Institutional Working Group (INS WG)

Peer Review to the Energy and Minerals Regulatory Commission (EMRC) on electricity licensing procedures

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FINAL VERSION

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About MEDREG

MEDREG is the Association of Mediterranean Energy Regulators, bringing together 25 regulators from 21 countries, spanning the European Union, the Balkans and North Africa.

Mediterranean regulators work together to promote greater harmonization of the regional energy markets and legislations, seeking progressive market integration in the Euro-Mediterranean basin.

Through constant cooperation and information exchange among members, MEDREG aims at fostering consumers’ rights, energy efficiency, infrastructure investment and development, based on secure, safe, cost-effective and environmentally sustainable energy systems.

MEDREG acts as a platform providing information exchange and assistance to its members as well as capacity development activities through webinars, training sessions and workshops.

The MEDREG Secretariat is located in Milan, Italy.

For more information, visit www.medreg-regulators.org

If you have any queries relating to this paper, please contact:

MEDREG Secretariat
Telephone: +39 02 65565 524
E-mail: vlenzi@medreg-regulators.org

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This report is the result of a work carried out by the Peer Review Team within the INS WG and the MEDREG Secretariat in the period February – December 2018.

Main drafters: Ms. Marilena Delenta (CERA, Cyprus), Ms. Salma Hussein (EgtptERA, Egypt), Mr. Sotirios Manolkidis (RAE, Greece), Mr. Nicolò Di Gaetano (ARERA, Italy), Cihan Yildiz (EMRA, Turkey).

Co-drafters: Ms. Veronica Lenzi and Mr. Matteo Lambicchi (MEDREG Secretariat)
Executive summary

In the context of the "Support to national reforms" initiative, MEDREG proposes peer review activities as one of the tools to assist Southern and Eastern regulators of the Mediterranean region. The peer review is the systematic examination and assessment of the performance of a member regulator made by other member regulators with the final goal of helping the reviewed regulator improve its provisions, adopt better practices and successfully comply with MEDREG’s standards and recommendations.

In this context, the Jordanian regulator EMRC has expressed its interest to receive a peer review from MEDREG on the topic of issuing and managing licensing procedures applied for generation, transmission and distribution, including licenses for the commerce and self-consumption of renewable energy sources. To answer this need, MEDREG set up a peer review team (PRT) composed by experts from different MEDREG members to carry out the activity.

As a final result, the peer review report analyses EMRC according to the six good regulatory principles of MEDREG (independence, competences, enforcement, internal organization, transparency and accountability) and issues recommendations to be implemented by the Jordanian regulator on a voluntary basis to better carry out the implementation of electricity licensing procedures in Jordan.

MEDREG considers that the proposed recommendations will require EMRC to engage in a substantial revision of its practices and a renewed dialogue with the Government on the powers and competences entrusted to the regulator. For this reason, in 2019 these recommendations will be the object of a dedicated capacity-building support that can leave behind some applicable solutions and that can provide a concrete roadmap to Jordan on how to improve its electricity licensing procedures.
Related Documents

MEDREG documents

- MEDREG (2014) Good regulatory principles
- MEDREG (2017) Peer-review process methodology
- EMRC (2018) EMRC’s preliminary report
- EMRC (2018) Reply to the peer review questionnaire
Table of Contents

1. METHODOLOGY FOR THE PEER REVIEW ................................................................. 8
   1.1 Scope of peer review activities .............................................................................. 8
   1.2 The actors ............................................................................................................ 9
       1.2.1 Candidates ..................................................................................................... 9
       1.2.2 Peer Review Team ....................................................................................... 9
       1.2.3 Focal points .................................................................................................... 9
   1.3 The procedure ..................................................................................................... 10
       1.3.1 Focusing the Target ...................................................................................... 10
       1.3.2 Desk analysis ................................................................................................ 10
       1.3.3 Questionnaire ............................................................................................... 11
       1.3.4 Fact-finding visit .......................................................................................... 11
       1.3.5 Assessment ................................................................................................... 11
       1.3.6 Output ........................................................................................................... 12

2. OVERVIEW OF THE JORDANIAN ELECTRICITY MARKET .................................. 14
   2.1 Jordanian energy policy ....................................................................................... 14
   2.2 Structure and evolution of the Jordanian electricity sector ................................ 14
       2.2.1 Companies and plants .................................................................................. 14
       2.2.2 Capacity and grid .......................................................................................... 15
       2.2.3 Consumption ................................................................................................ 16
   2.3 The Energy and Minerals Regulatory Commission (EMRC) ................................ 17

3. REVIEW OF EMRC AND ITS LICENSING PROCEDURE .................................... 19
   3.1 Independence ...................................................................................................... 19
       3.1.1 Legal framework ............................................................................................ 19
       3.1.2 Independence of the Board ......................................................................... 19
       3.1.3 Human and financial resources .................................................................... 20
       3.1.4 The location of the regulator ........................................................................ 20
   3.2 Competences ...................................................................................................... 22
       3.2.1 EMRC duties and responsibilities according to Law 17 (2014) ....................... 22
3.2.1.1 Balancing interests of the consumers, licensees and investors, consumers’ protection and monitoring .........................................................22
3.2.1.2 EMRC structure economic feasibility ........................................22
3.2.1.3 Compliance with environmental protection .....................................23
3.2.1.4 General and nuclear safety ..........................................................23

3.2.2 EMRC competences to fulfil its responsibilities ........................................23
  3.2.2.1 Licensing ..................................................................................23
  3.2.2.2 Markets monitoring .................................................................23
  3.2.2.3 Cost of services and tariffs ........................................................24
  3.2.2.4 Networks rules, technical standards, performance indicators and environmental requirements ..................................................25
  3.2.2.5 Unbundling and cross subsidies ..................................................26
  3.2.2.6 Recommendations to government .............................................27
  3.2.2.7 Cooperation with other institutions ...........................................27
  3.2.2.8 Nuclear ....................................................................................27
  3.2.2.9 Contracts ..................................................................................28
  3.2.2.10 Access to information ............................................................28

3.3 Enforcement.......................................................................................30

3.4 Internal organization ..........................................................................33

3.5 Transparency ......................................................................................34

3.6 Accountability ....................................................................................35

4. STEPS FORWARD ...............................................................................37

Annex 1 – List of abbreviations ..................................................................38
Figure Summary

Figure 1. Peer Review Process 2.0 ................................................................. 10
Figure 2. Assessment Phase ........................................................................ 12
Figure 3. Market share in the Jordanian electricity market (source: Enerdata) .......... 15
Figure 4. Power generation by source (source: Enerdata) .................................... 16

Table Summary

Table 1. MEDREG Good Regulatory Principles.................................................. 8
Table 2. Example of Compliance Roadmap......................................................... 13
1. Methodology for the peer review

1.1 Scope of peer review activities

MEDREG’s mission is to promote the compatibility of energy regulatory provisions throughout the Mediterranean. A compatible regulatory framework is crucial in order to develop progressively integrated energy systems. In order to achieve this relevant goal, it is important to support the institutional building of MEDREG’s member regulators so that they can play a more effective role at national level. During its 18th General Assembly (Barcelona, 27 November 2014), MEDREG approved a report on “Good Regulatory Principles” which highlighted the main standards characterizing an efficient regulator in terms of independence, competences, effective internal organization, enforcement, transparency and accountability. Based on that report, the Working Group on Institutional Issues (INS WG) prepared a methodology to assess the performance of MEDREG’s member regulators against those regulatory principles through the performance of peer review exercises.

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence</td>
<td>Independence from national and regional government and from the industry guarantees regulatory stability and neutrality and avoids situations in which the decisions of the regulator are constantly modified or taken under influence.</td>
</tr>
<tr>
<td>Competences</td>
<td>Duties and powers should constitute a minimum set of competences defining the specific responsibilities of a regulator to promote competition and to empower consumers.</td>
</tr>
<tr>
<td>Internal Organization</td>
<td>Effective organization means to have clear decision making processes and an operative internal structure, with distinction of roles and responsibilities.</td>
</tr>
<tr>
<td>Enforcement</td>
<td>Enforcement is to ensure compliance with rules by market participants and regulated entities, in order to obtain the public benefit that regulation provides.</td>
</tr>
<tr>
<td>Transparency</td>
<td>Transparency in the regulatory process helps others to understand the regulator’s work and is beneficial for a proactive stakeholder engagement.</td>
</tr>
<tr>
<td>Accountability</td>
<td>Accountability means that the regulator takes on the responsibility and is able to demonstrate outcomes and results from its regulatory action.</td>
</tr>
</tbody>
</table>

Table 1. MEDREG Good Regulatory Principles

Peer review is the systematic examination and assessment of the performance of a member regulator made by other member regulators with the final goal of helping the reviewed regulator improve its provisions, adopt better practices and successfully comply with MEDREG’s standards and recommendations. The peer review is an exercise performed among equals and on a non-adversarial basis, as it is based on the mutual trust and shared confidence among the regulators involved. The Secretariat ensures that the process is properly guided and encourage a system of mutual accountability.

The effectiveness of this exercise does not rely on binding acts, but rather derives from the soft persuasion exercised by the peer regulators during the process. This soft persuasion generally takes the form of formal recommendations and informal channels for dialogue by the peer regulators. Peer regulators will highlight strengths of the reviewed regulator as well as propose measures that can support a more efficient role of the regulator and promote a closer compliance with MEDREG’s recommendations. Officials of the reviewed regulator could also use the results of the peer review to stimulate discussion and improvement in their national
policies and practices. The national regulator could use the outcomes of the peer review to build momentum and impact on domestic public opinion, policy makers and national administrations. This chapter details the procedure followed by MEDREG to perform a peer review. This procedure can be adapted to the specific needs and requests of the reviewed regulator.

1.2 The actors

1.2.1 Candidates

Peer review activities are also proposed as one of the tools of the assistance MEDREG provides to Southern and Eastern regulators in the context of the "Support to national reforms" initiative. MEDREG aims at performing one peer review per year. Regulators interested in receiving a peer review can contact the MEDREG Secretariat at any time. Once a volunteer is identified, the Secretariat and the peer review coordinator from the INS WG establish a direct connection with the regulator’s staff and agree on the exact focus of the peer review to be described in a term of reference, which may rely on the entire regulatory framework as well as on a single procedure.

1.2.2 Peer Review Team

The peer review team includes a coordinator identified by the INS WG, at least three members coming from the different MEDREG Working Groups and a representative of the Secretariat. The team is identified in cooperation with the reviewed regulator and approved by the MEDREG President. The team should include a different array of countries and members should have expertise relevant to the focus of the peer review.

The role of peer review members includes the examination of documentation, participation in discussion with the reviewed country, production of documentation and analysis and possible participation in missions to visit the reviewed regulator. The team is led by a peer review coordinator; whose role is to provide guidance to the overall peer review process. The role of the Secretariat is to support the overall peer review process by contributing to the drafting of documents and reports, organizing meetings and missions, stimulating discussion, upholding quality standards and ensure the coherence of the peer review with the overall activities of MEDREG.

1.2.3 Focal points

The reviewed regulator should identify staff members that will act as focal points for the peer review team. They will be responsible for collecting information within the reviewed regulator and regularly coordinating with the peer review team and the Secretariat.
1.3 The procedure

1.3.1 Focusing the Target

In order to consolidate the focus of the peer review, the INS WG Chair (or his/her delegate) and the reviewed regulator agree on terms of reference, which should contain a detailed description of the objectives, timetable and main deliverables to be reported. The terms of reference should also include a checklist based on MEDREG’s “Good Regulatory Principles” which can be adapted to the reviewed regulator’s specific needs in order to highlight topics of particular interest or add additional regulatory targets. It will contain a number of key performance indicators to investigate main aspects. It provides a synthetic and comprehensive overview of the evolution of the main dimensions, from the starting situation (AS IS) to the target condition (TO BE).

1.3.2 Desk analysis

The desk analysis has the scope to collect data on the present situation and to define the AS IS checklist. The Focal points prepare a preliminary report on the framework under review, including the different information and documents that can be useful to the team in order to understand fully the context, including:

- General information on the country: institutional arrangements, macroeconomic data, main issues and perspectives;
- Description of the energy sector: market model, current situation, main actors, trends, descriptions and data on electric and gas systems (generation, production, networks, demand);
- Information about the regulator: legal framework, competences, annual reports, publications.

The peer review team may ask for clarifications and additions to this report.
1.3.3 Questionnaire

The peer review team will connect the information received through the desk analysis with the checklist framework and elaborate a short and focused questionnaire that addresses the most challenging issues for the reviewed regulator. The questionnaire is addressed to the focal point, who should ensure a reply within the agreed time. The reviewed regulator should strive to provide comprehensive and transparent replies to each question and can refer to official pieces of legislation as well as third party documents. At any time of the process, the reviewed regulator can ask clarifications in order to provide answers that are more consistent.

1.3.4 Fact-finding visit

While the peer review team collects and analyses material from the questionnaire and external sources, fact-finding visits are invaluable to gain a hands-on understanding of how regulations are implemented. These visits take the form of consultations between the reviewed members and the team. The visits include meetings with the head of regulatory body as well as with the various departments of the regulator that are involved in the peer review exercise. If necessary, the team can also meet with a range of local and international stakeholders active in the country such as governmental officials, international financial institutions, consumer associations, utilities and others. At the end of the fact-finding visit, the peer review team presents its key impressions in the form of a short document. This report is included as an annex to the final assessment report. Field visits normally last three to four days and are organized by the MEDREG Secretariat with the help of the reviewed regulator’s Focal points.

1.3.5 Assessment

Using the information gathered through the questionnaire and during the fact-finding visit, the peer review team draft a report which assesses the status or the compliance with the MEDREG’s Good Regulatory Principles. The assessment includes a logic model\(^1\) which helps evaluating how the regulator fulfil its mission, considering external and internal conditions (legal framework, independence, organization, etc.) and final outputs and outcomes. A number of key performance indicators (KPIs) synthetically describes the performance or the effectiveness (i.e. numbers of employees\(\times\)millions consumers) in the present situation.

Figure 2. Assessment Phase

The reviewed regulator has the possibility to comment and propose integrations to the report, providing explanatory information or data. The reviewed regulator may ask to consider some data or results as confidential. The peer review team replies to comments and finalizes the assessment report, evaluating the values of the KPIs in the AS IS Condition and eventually providing specific recommendations and suggestions on all or specific areas identified in the checklist and proposed KPIs target values. The final report is presented to the MEDREG General Assembly for approval and formally delivered to the reviewed regulator. The assessment report may be published on the MEDREG website upon consent of the reviewed regulator and may be presented in front of national and international stakeholders to support the implementation of the suggestions and guidelines.

1.3.6 Output

On the basis of the final report, the reviewed regulator is encouraged to issue a compliance roadmap that present how and when the regulator will implement the recommendations, for instance indicating a step-by-step variation of the KPIs to reach the target values.
<table>
<thead>
<tr>
<th>KPI</th>
<th>KPI scale</th>
<th>AS IS (2017)</th>
<th>MID TERM (1 year)</th>
<th>TO BE (2 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terms and conditions of third party access (TPA) to the electricity transmission grid</td>
<td>Regulated TPA = 0</td>
<td>Negotiated TPA = 3</td>
<td>no TPA = 6</td>
<td>6</td>
</tr>
<tr>
<td>Wholesale Open Market for electricity</td>
<td>Yes = 0</td>
<td>No = 6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Vertical separation between Infrastructures &amp; other segments</td>
<td>Ownership separation = 0</td>
<td>legal separation = 3</td>
<td>accounting separation = 4</td>
<td>no separation = 6</td>
</tr>
<tr>
<td>Market share of the largest company in the electricity</td>
<td>Smaller 50% = 0</td>
<td>Between 50% &amp; 90% = 3</td>
<td>Greater 90% = 6</td>
<td>6</td>
</tr>
<tr>
<td>Minimum consumption threshold that consumers must Exceed to choose their electricity supplier (kwh/y)?</td>
<td>no min. Consumption = 0</td>
<td>&lt;=1000 = 1</td>
<td>Between 1000 and 5000 = 2</td>
<td>&gt; 1000 = 4</td>
</tr>
</tbody>
</table>

Table 2. Example of Compliance Roadmap
2. Overview of the Jordanian electricity market

2.1 Jordanian energy policy

The Ministry of Energy and Mineral Resources (MEMR) coordinates the activities carried out in the energy sector. The two main objectives of the energy policy are reducing the energy supply cost and its dependence on imported oil. In 2007 the country put forward the “Energy Master Plan”, a new 20-year energy plan involving €2.6bn worth of planned investments. The main objectives of the plan are energy efficiency (e.g. 30% of all households are expected to be equipped with a solar water heating system by the year 2020), the diversification of energy sources, the development of more reliable infrastructures, the continuation of the development of gas, and an increase in the use of local resources from 4% in 2007 to 40% in 2020.

In 1996 an electricity law allowed the development of production from private producers (BOT, BOO). The deregulation of the electricity sector started in 1997 with the sale of 51% of public shares in Electric Generating Company (CEGCO), the electricity production company. In 2002, the General Electricity Law was issued, setting out the privatization process for the electricity sector and creating a regulator (Electricity Regulatory Commission), now part of EMRC. The regulator controls electricity prices, sets up the electricity tariff, grants electricity generation and distribution licenses, ensures the rights of consumers and resolves complaints between consumers and electricity companies. The Government intends to sell its stakes in distribution companies: it currently holds 100% of Electricity Distribution Company (EDCO) and 55.4% of Irbid District Electricity Company (IDECO).

The Renewable Energy Law (2012) aims for 10% of the country’s energy mix to come from renewables in 2020 and 25% by 2030; mainly from wind (objective of 1 200 MW), solar (600 MW) and waste to energy (20-30 MW). In 2012, the then Electricity Regulatory Commission (ERC) announced the introduction of a feed-in tariff system for net metering; it is designed to reduce energy demand and allows the sale of any surplus energy generated back to the national grid. In 2017, the percentage of renewable energy sources (RES) energy production was 10%. According to the law, by 2019 all meters will have to be smart.

In mid-2014, MEMR announced that the Government expects to commission about 1,800 megawatt (MW) of solar and wind capacity by 2019. In 2015, the Government awarded licenses for 14 projects (12 solar and 2 wind) with a combined capacity of 200 MW. In 2018 the government launched a bidding process for renewable projects with a total capacity of 300 MW. In its Master plan, the country set the target that by 2020 half of the hot water supply should come from solar. The installation of solar water heaters is supported by the Jordan Renewable Energy and Efficiency Fund (JREEEF), which should to raise the number of households benefiting from the programme from 14% to 25% by 2020. The fund plans to provide 50% of the heater’s price in the form of a loan and a subsidy of around 175 Jordan Dinars (JD) (€213) compared to market prices.

2.2 Structure and evolution of the Jordanian electricity sector

2.2.1 Companies and plants

CEGCO, Electric Generating Company (Saudi Arabia’s ACWA Power International 51%,
Government 40% and Social Security Corporation 9%) is the main generator with a total capacity of around 1 100 MW and a production of 4.2 terawatt per hour (TWh) in 2016 (21% of the total power generation). Samra Electric Power Company (SEPCO), a government-owned company, has a capacity of 1 175 MW (24% of total generation). The initial Samra plant (300 MW in 2004) was extended in several phases and now consists of 8 gas turbines (total of 832 MW) and 3 steam turbines (total of 343 MW).

![Figure 3. Market share in the Jordanian electricity market (source: Enerdata)](image)

There are several independent power producers (IPP) projects active in the country. Amman East Power commissioned the first IPP in 2009, a 370 MW combine cycle gas turbine (CCGT), under a BOO agreement (cost of €259m). The second IPP, Al Qatrana (373 MW), was commissioned in 2012 by KEPCO (Korea Electric Power) (cost of €398 BOT until 2035). It is fueled with gas from the Arab Gas Pipeline. The third IPP power plant (573 MW diesel engine) was completed in 2014 by a consortium of KEPCO, Mitsubishi Corporation, Wartsila Development and Financial Services. Electricity is sold to the National Electric Power Corporation (NEPCO) under a 25-year PPA. AES Levant Holdings (AES 60% and Mitsui 40%), started commercial operations of the fourth IPP, a 241 MW tri-fuel (natural gas/diesel/heavy fuel oil) power plant located in Al-Manakher, in 2014 (cost of €302m). The electricity is supplied to NEPCO under a 25-year PPA. Jordan Wind Project Company (InfraMed 50%, Masdar 31% and EP Global Energy 19%) commissioned the Tafila Wind Farm (117 MW) in 2015 (cost of €251m).

NEPCO is in charge of the transport of electricity, the development of the national network and the interconnection between Jordan and its neighbors. There are 3 distribution companies: Jordan Electric Power Company (JEPCO) for the east of the country; Irbid District Electricity Company (IDECO) for the North (22.5% of the distribution); and Electricity Distribution Company (EDCO) for the south (Valley of the Jordan, 13.5% of distributed electricity).

2.2.2 Capacity and grid

The country’s electricity capacity (4.8 GW, end of 2016) is mainly thermal, with gas combined cycles accounting for about half of that capacity (1.9 GW). Electricity production has more than doubled since 2004, from 8.4 TWh to 19.7 TWh in 2016. The share of gas in total production
increased rapidly until 2009 (from 50% in 2004 to 90%) but dropped significantly from 2010 to 2015, due to imports constraints (25% and 7% in 2013 and 2014). In 2016, gas’ share climbed to 84%, with the opening of the LNG Sheikh Sabah Al Ahmad terminal in Aqaba in 2015, while the share of fuel oil dropped from 92% in 2014 to 11% in 2016.

Figure 4. Power generation by source (source: Enerdata)

The electricity grid was connected to Egypt in 1999 and to Syria in 2001, within the framework of a regional programme aimed at connecting the Arab grids to Europe through Turkey and Syria ("Electric Interconnection Project of the Six Countries"). It is also connected to Iraq. In the south it is connected to Egypt through a 400 kilovolt (KV) submarine cable crossing the Gulf of Aqaba, and in the north to Syria through a 400 kV single circuit transmission line with capacity of about 350 MW from Jordan to Syria and 200 MW from Syria to Jordan. The interconnection with Iraq was reinforced through the creation of a new transport line between Al Manakhar and the Iraqi border, with the addition of a new sub-station to Risha. Jordan is a net importer of electricity (335 GWh imports, 45 GWh exports in 2016). Currently, there is not Third Party Access (TPA) to the grids of the country.

The European Investment Bank (EIB) agreed to provide a €62m loan to NEPCO to finance the NEPCO Green Corridor project to strengthen the country’s high-voltage electricity transmission backbone, enabling new facilities generating large amounts of renewable energy to be connected to the network, and electricity to be transmitted from the central/southern desert areas to Amman, where generation is fossil-fuel based. The €62m loan will be used to construct a new electricity substation located north of the city of Ma’an to build new transmission lines and to modify existing substations to accommodate these new lines. The project will be operational in 2018. The project is being co-financed by the EIB, Agence Française de Développement (AFD) and the EU Neighborhood Investment Facility. In 2015, the authorities announced that Hanergy from China would provide the country with a €268m grant to expand the grid to absorb more power generated by renewable energy projects. Saudi Arabia plans to connect its renewable projects with Jordan through a 450 MW line.

2.2.3 Consumption

The country’s overall consumption (8.5 Mtoe in 2016) increased by 4%/year between 2000 and 2015 and decreased in 2016 (-2.2%). Oil is the country’s main energy source, with 57% of total consumption; gas accounts for 36% (4% and 22%, respectively, in 2014 and 2015). Consumers do not have the right to choose their suppliers. If they do not pay their bills, they
can be disconnected after 30 calendar days.

Final energy consumption has grown steadily since 2000, at an average rate of 3.4% year. Oil products are the main source of energy for final consumers (67% in 2016), followed by electricity (24%) and coal (6%). The use of wood is negligible; the majority of households use liquid petroleum gas (LPG) for cooking and kerosene for heating (80%). Nearly all households are connected to the electricity grid (around 99%). The use of solar water heaters is widespread (approximately 20%, or an installed area of 1 400 km², or 148 m²/1 000 inhabitant). The residential-tertiary and transport sectors are the country’s largest consumers with 37% and 43%, respectively, of final consumption each in 2016, followed by industry (19%, including non-energy uses). The shares of each sector in electricity consumption have been fairly stable since 2011: households account for 44%, industry for 23% and services for 17% (2016).

2.3 The Energy and Minerals Regulatory Commission (EMRC)

EMRC is a governmental body that possesses a legal personality with financial and administrative autonomy. It may, in such capacity, acquire movable and immovable properties necessary to achieve its goals, and to perform all legal acts, including entering into contracts, acceptance of aids, donations, grants and gifts; it further has the right to litigate, where the Civil Attorney General acts on its behalf in legal proceedings. EMRC was created by law in 2014 and is considered the legal successor of the Electricity Regulatory Commission (ERC), the Jordan Nuclear Regulatory Commission (JNRC) and the Natural Resources Authority (NRA).

EMRC regulates electricity, gas, mining and nuclear resources, as well as renewable energy, oil, petroleum and oil shale in Jordan. EMRC is a separated entity, which acts independently, although it is directly related to the Prime Minister. Some of its decisions must be submitted for governmental approval in areas such as tariff methodology, security of supply, national development plans, draft budget and the annual work plan. The members of “the Council of Commissioners”, which manages and supervises the regulator, are appointed by the government. Conflicts of interest are prohibited, and staff members are recruited via open calls.

EMRC is financially independent, funded by license fees and fines, which are set autonomously. It manages its annual budget independently and submits it for external audits. Its decisions are binding and appealable in the court. EMRC monitors the generation, network development, and maintenance, and actively covers peak demand. EMRC is also currently taking necessary actions towards unbundling: it monitors the progression of the single buyer model in a competitive electricity market and reports each year on the potential for competition to the minister; it is also working on the procedures for approving the electricity transmission codes.

The regulator determines the methodologies for calculating tariffs for electricity licensed services and sets the tariffs according to it; it grants permits and licenses to construct, own or operate and undertaking or in any way engage in the business of generation, transmission, system operation, supply or distribution. EMRC has access to information of the licenses. It settles disputes between licensees and between consumers involving matters of electric power connection and supply, quality of service, and tariffs. It participates in developing the technical standard of the sector’s appliances and facilities and it protects the interests of consumers by informing them of their rights, managing their complaints, and monitoring the quality of the
services provided to them. EMRC supports vulnerable consumers by offering them specific tariffs.

EMRC is autonomous when it comes to deciding its internal organisation, number of staff, and its human resources policy. In addition, EMRC verifies the licensees’ compliance with their obligations. In case of unsolved and persistent non-compliance by the licensee, it has the power to impose amendments in the license’s terms and conditions and to cancel it. EMRC issues annual reports, it maintains and regularly updates its website in Arabic and English, with information on the energy sector, tariffs, regulatory decisions and other documents and it conducts public consultations such as hearings, written consultations and workshops.
3. Review of EMRC and its licensing procedure

3.1 Independence

“Independence from national and regional government and from the industry guarantees regulatory stability and neutrality and avoids situations in which the decisions of the regulator are constantly modified or taken under influence” (Good Regulatory Principles in the Mediterranean Countries, MEDREG 2014).

Regulators maintain its activities in a complex environment at the crossroads of public authorities, the private sector and consumers. For this reason, they have to balance competing interests and needs of different actors in the sector. Therefore, they must act objectively, impartially, and consistently, without conflict of interest or undue influence.

MEDREG defines independence as the first good regulatory principles. In order to assess the degree of independence of a regulator, MEDREG looked in particular at four dimensions:

- The legal framework establishing the regulator;
- The independence of the Board;
- Human and financial resources available; and
- The location of the premises of the regulator.

The findings regarding EMRC are the following:

3.1.1 Legal framework

EMRC is a legal entity, which acts independently, although it is directly related to the Prime Minister. It can be said that duties, powers and independence of EMRC are clearly defined by the Law, which is very important according to Good Regulatory Principles in MEDREG. However, some of EMRC decisions must be submitted for governmental approval in areas such as tariff methodology, security of supply, national development plans, draft budget and the annual work plan. Such dependence, make EMRC’s independence questionable in practice.

3.1.2 Independence of the Board

The Council of Commissioners is the decision-making body that manages and supervises the EMRC and consists of five members including the Chief Commissioner. The powers and duties of the Council of Commissioners whose members are appointed by the government, are clearly defined in the Law. Its decisions are binding and appealable only in the court.

According to EMRC Law, Commissioners and their spouses or relatives of first and second degree cannot have direct or indirect financial interest related with generation, transmission, system operation, distribution or supply of electricity throughout their term of appointment and during the cooling-off period which last one year after the termination of the term. Cooling-off periods can contribute to the development of culture of independence. In this regard, in order to ensure impartiality and independence from the energy industry and from the political sphere, one year cooling-off period can be extended by bearing in mind that general trend of cooling-off periods in Mediterranean regulators is 2 or 3 years.
Commissioners are appointed for a 4 years’ term of office which may be renewed only one time for the same length. On the other hand, according to EMRC Law, the term of office of a Commissioner can be extended after the expiry of his mandate up to a maximum of a further three months until he has been re-appointed, or the successor has been appointed. The extension is an important tool considering that parliamentary elections are held every 4 years in Jordan, thus risking to affect the appointment of new Commissioners in case of long negotiations for the creation of a new government.

A long-term mandate of the Commissioners of the regulator beyond the electoral cycle can help resolve time inconsistency and fluctuations linked to the political gridlocks. Therefore, as recommendation it is important that the Council of Commissioners’ mandate should be longer than parliamentary election circles to increase the regulator independence.

### 3.1.3 Human and financial resources

EMRC is autonomous in managing human resources policy. EMRC employs 370 staff which is mainly composed of engineers, technicians and administrative employees. A binding code of ethics is in effect.

The annual budget of EMRC is around €6.7 million. According to EMRC Law, its financial resources mainly come from license fees, administrative service fees, fines, the general government budget (in case of emergency) and grants. EMRC has the power to determine autonomously the amount of fees and fines.

EMRC’s budget, as in the case of all government institutions, has to be approved by cabinet and endorsed by the King. Indeed, the budget must be compliant with rules and/or guidelines arising from the state budget. In addition to its internal financial control, EMRC’s budget is audited by certified legal auditor appointed by the Council in accordance with the international accounting standards.

Even if EMRC’s annual budget must be approved by the Government and there is the potential risk of being in need of governmental budget, EMRC has the ability to manage its financial and human resources, carrying out its duties effectively.

### 3.1.4 The location of the regulator

According to MEDREG’s good regulatory principles, a geographic separation of the regulators’ premises with those of political or private entities active in the energy sector could enhance independence. In this regard, EMRC has its own premises and the regulator considers its premises sufficient to exercise its tasks.

<table>
<thead>
<tr>
<th>Recommendations on independence</th>
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<tbody>
<tr>
<td>Some of EMRC decisions must be submitted for governmental approval for areas such as tariff methodology, security of supply, national development plans, draft budget and the annual work plan. Such dependence, make EMRC’s independence questionable in practice. Therefore, it is important to develop a policy to increase EMRC’s administrative independence especially in approval processes and relations with the government.</td>
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In addition, EMRC Commissioners are appointed for a 4 years’ term of office as well as the parliamentary mandate. As a consequence, it is important to ensure the Council’s stability and inconsistency by extending the term of Commissioners beyond the electoral cycle, thus helping
to resolve time inconsistency and fluctuations linked to the political gridlock and increasing the regulator independence.

Finally, EMRC's annual budget is still dependent from the approval of the government. As a result, strengthening its financial independence, will oblige EMRC to do not rely on incomes from the general government budget in case of emergency.

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**Case study: the Electric Utility and Consumer Protection Regulatory Agency (EgyptERA) in Egypt**

EgyptERA was established in 2000 by virtue of the Presidential Decree No. 339. By virtue of the Law 87/2015, EgyptERA was restructured to become an independent institutional entity in charge of handling and developing activities between electricity producers, transmission operators, distribution companies and end users. The above Law specifies the powers and missions, the decision-making process and the provisions regarding transparency, independence and impartiality of the regulator.

EgyptERA has the mission to regulate the Egyptian electricity market in a transparent and non-discriminatory manner, while considering environmental measures and ensuring availability, reliability and quality of supply at fair prices. EgyptERA’s activity main objectives over competences and enforcement are:

**Competences**

- Regulates and supervises all electricity generation, transmission, and distribution
- Ensures availability of supply to users at the most equitable prices and considers environmental issues
- Ensures fair competition in the field of electricity including generation and distribution
- Protects the interests of customers, producers, transmitters, and distributors
- EgyptERA Sets the tariff methodology, including both network tariffs, end-user tariffs for domestic customers and tariffs for renewable energy sources installations and submits to the approval by the Cabinet of Ministers. The approval of tariffs is divided into two phases. First, the Cabinet of Ministers approve the tariff methodology. Then, EgyptERA autonomously performs the calculation of tariffs.
- Vulnerable consumers are subsidized in as much as a progressive tariff structure applies, i.e., low-consumption consumers pay proportionally less than high-consumption consumers.
- Network rules and standards - EgyptERA approves network connection and network access contracts. However, Law 87/2015 does not include provisions and respective competences for EgyptERA to approve and adopt cross border capacity allocation rules.
- EgyptERA is responsible for market monitoring. In particular, it is entitled to approve Market Rules and to launch reparatory measures and amendments when required. Taking into consideration that in the Egyptian electricity sector the liberalization process has just started, the market monitoring activity is currently mainly devoted to assessing the existence of the required conditions to allow market opening, with particular reference to competition on the supply side of the market. EgyptERA also observes the compliance of the Licensees to the terms and conditions of their licenses.
- Under Law. 87/2015, EgyptERA is competent to grant all permissions and licenses to establish, manage, operate and maintain electricity production, distribution and supply/ sale activities.
- Law. 87/2015 provides EgyptERA with access to all necessary information of the regulated entities.
- Consumer protection -Electricity consumer protection is mainly performed through a complaint management system and initiatives aimed at increasing consumer awareness. In particular, in regard to complaints EgyptERA has an electronic system for recording complaints and follow-up on its procedures. Concerning consumer awareness, EgyptERA makes intensive use of the available information technology (e.g., website, social media, mass communication channels) to promote awareness campaigns.
- Dispute resolution – Law 87/2015 establishes dispute settlement provisions. A specific settlement procedure has been adopted through the respective Executive Regulations.
- Utility unbundling: The unbundling regime is set out by the Electricity Law and each utility is tasked to implement it. EgyptERA is involved in the different phases of the unbundling process, from designing it to the ex-post monitoring of the process.

**Enforcement**

- EgyptERA, by virtue of the L. 87/2015 is empowered to enforce its decisions, regulatory measures, as well as to impose sanctions to supervised entities, especially Licensees, in case they do not comply with its decisions, according to two different procedures:
  - Imposing any of the penalties stated in the Law, in case of violating legal provisions, competition rules or the transparency and equal opportunity principles.
  - Imposing sanctions in cases of violation of its provisions or prejudice to any of the generation plants or tampering them and these sanctions range from fines to aggravated imprisonment in accordance with the gravity of the acts.
- Several other tools are available to EgyptERA to ensure compliance with regulatory framework, as for instance market monitoring, publication of performance benchmarking, warnings, legal action.

### 3.2 Competences

“Duties and powers should constitute a minimum set of competences defining the specific responsibilities of a regulator to promote competition and to empower consumers” (Good Regulatory Principles in the Mediterranean Countries, MEDREG 2014).

#### 3.2.1 EMRC duties and responsibilities according to Law 17 (2014)

EMRC (Energy and Minerals Regulatory commission) is an independent Regulatory Authority which reports directly to the Minister of Energy and Mineral Resources. EMRC is considered the legal successor of the Electricity Regulatory Commission (ERC), the Jordan Nuclear Regulatory Commission (JNRC) and the Natural Resources Authority (NRA) in relation to its regulatory tasks pursuant to law No. (17) of the year 2014 on Restructuring of Governmental Institutions and Organizations. The objectives and responsibilities of EMRC are defined in the above Law and mainly include the following.

1. **Balancing interests of the consumers, licensees and investors, consumers’ protection and monitoring**

EMRC regulates the sector on the basis of balance between the interests of the consumers, licensees, investors and any other relevant parties, including the regulation and monitoring of the uses of the nuclear and ionized radiation energy sector. The interest of electricity consumers is assured by the compliance with the conditions on provision of service as issued by the licensees and approved by EMRC. This includes the right to be supplied with energy of a specified quality at reasonable, easily and clearly comparable prices, the right to solve, easily and economically, their disputes with market system operators and the protection of vulnerable customers, i.e. supporting poor households or sick customers with social tariffs or discounts. The latter entails monitoring the implementation of measures taken to ensure a high level of consumer protection and to provide universal service to all household customers.

2. **EMRC structure economic feasibility**

EMRC maintains an active structure for the sector and develop the same in a manner that contributes to and promotes its economic feasibility, therefore enhancing its efficiency.
3.2.1.3 Compliance with environmental protection

The regulator ensures the compliance of enterprises operating in the sector with the standards of environmental protection instructions and laws and the general safety conditions applicable in the Kingdom pursuant to the legislations in effect.

3.2.1.4 General and nuclear safety

EMRC safeguards that the conditions and requirements of general safety, radiation protection and nuclear safety and security are in place. In addition, the regulator works on protecting the environment and human health and properties from the risks of contamination and exposure to ionized radiations.

3.2.2 EMRC competences to fulfil its responsibilities

3.2.2.1 Licensing

EMRC competences related to licensing include the following:

- Granting permits and licenses to persons operating in the sector;
- Verifying the compliance of permittees and licensees with the application of the provisions of the laws, regulations and issued related instructions;
- Monitoring the permittees and licensees with a view to ensure the compliance thereof with the provisions of the laws and the permits and licenses granted thereto, for which purpose it may make inspections to any entity or any other body;
- Issuing special incentives for renewable energy in cooperation with other agencies/bodies such as the government. There is a simplified licensing application procedure for power plants based on renewable energy sources.

In a future, open market situation, EMRC should gear up to acquire the abilities and competences for running competitive auctions for generation additions. This is a very significant, effective and transparent process that has been successfully deployed in several developing Countries for RES development. Depending on Government policies, auction could also be applied to conventional generation additions. Furthermore, resulting auction results may be beneficial for containing tariffs to the users without impairing the suppliers’ economic viability.

3.2.2.2 Markets monitoring

EMRC should have the necessary competences to monitor wholesale and retail markets, access to networks and other relevant infrastructure, to monitor competition as well as compliance of regulated entities with rules and standards, and to avoid any abuse of dominant positions, in particular to the detriment of consumers, as well as predatory and anti-competitive behaviour.

EMRC should be allowed to work in close cooperation with national antitrust or any other national or regional authorities in charge of the supervision of competition rules to adjust and tune the regulation framework. A proactive market surveillance may increase customers, investors and market operators’ confidence in the regulator’s action and in the overall market functioning.
3.2.2.3 Cost of services and tariffs

Competences on markets monitoring should lead to an appraisal of the main components of the electricity prices paid by household and industrial consumers. These components can be divided in five main categories:

- **Energy costs**, reflecting mainly the cost of purchasing electricity on the wholesale market, but also suppliers operating costs to run the business, including sales and billing as well as profit margins.
- **Network costs**, mainly the rates charged for transmission and distribution of energy to end users, including transmission and distribution losses, system operation costs and metering.
- **RES charges**, or the levies for government policies in support of renewable energy sources
- **VAT**.
- **Other taxes and charges** including: (i) possible charges for promoting and improving energy efficiency and combined heat and power generation, (ii) possible taxes and charges related to air quality and environmental purposes, (iii) possible taxes and charges related to CO2 and other greenhouse gases emissions, (iv) possible taxes and charges related to the nuclear sector, energy security and capacity payments and (v) other taxes and charges not covered by any of these points.

The results of these assessments should be an element to consider when addressing policy issues and it will allow useful comparisons with similar appraisals by other countries.

EMRC should have competences on conducting research on cost of service for generation, distribution and transmission as an input for price setting. This research, useful for determining tariffs, involves an accurate analysis of the different cost components leading to a fair rates system. Such analysis may encompass an embedded cost of service study which divides the costs included in a utility's revenue requirement among the various classes of customers. There are three primary steps in this process:

- **Functionalization** consists of identifying whether costs are related to production, transmission, distribution, or other cost areas.
- **Classification** of costs is the determination of whether particular costs are related to the number of kilowatts of peak demand, the number of kilowatt-hours of energy consumption, or to the number of customers served.
- **Allocation** of the costs between the classes based on usage characteristics for each class.

The end result of an embedded cost of service study is a measure of revenue, expenses and rate base by class. These results permit calculation of a rate of return for each class, a profit margin for each class, and some indices of return, such as a return index and a revenue to cost ratio. It is often assumed, but not necessarily required, that all classes should provide the same rate of return. A differential rate of return, recognizing differences in class risk, class growth rates, or other factors can significantly affect the results of a study.

Common costs, such as administrative and general expenses and general plant, are subjected to separated analyses to divide them among the production, transmission, and distribution functions.

EMRC should be able to set the rules under which utilities are allowed to set rates based on
the cost of providing service to customers and the right to earn a limited profit. Electricity prices generally reflect the cost to build, finance, maintain, and operate power plants and the electricity transmission and distribution grids as well as a financial return for utility owners. Generally, several key factors influence the price of electricity:

- **Fuels**: fuel costs can vary, especially during periods of high demand. High electricity demand can increase demand for fuel, such as natural gas, which can result in higher prices for the fuel and, in turn, higher costs to generate electricity.

- **Power plants**: each power plant has construction, maintenance, and operating costs.

- **Transmission and distribution system**: the electricity transmission and distribution systems that deliver electricity have maintenance costs, which include repairing damage to the systems from accidents or extreme weather conditions.

- **Weather conditions**: hydropower generation, solar and wind can provide low-cost electricity generation from wind turbines when wind speeds are favourable. However, extreme temperatures can increase the demand for electricity, especially for cooling, and demand can drive prices up.

- **Regulations**: in some countries, regulators or public service commissions fully regulate prices, while other countries have a combination of unregulated prices (for generators) and regulated prices (for transmission and distribution).

- **Incentives to promote government policies on energy**: among these policies, research support, RES generation as well as efficiency and energy savings programs may be included with their cost covered by the electricity prices.

Electricity prices are usually higher for residential and commercial consumers because it costs more to distribute electricity to them. Industrial consumers use more electricity and can receive it at higher voltages, so supplying electricity to these customers is more efficient and less expensive. The price of electricity to industrial customers is generally close to the wholesale price of electricity.

Based upon the preceding considerations, EMRC has the competence for determining the electric tariffs, subscription fees, service charges, deposits and cost of service connection with the electric transmission and distribution systems. Fixing transparent and non-discriminatory tariffs for connection, access and use of national transmission and distribution networks is cost reflective, and it should provide incentives for efficient new investment and avoid cross-subsidies amongst network users. EMRC is responsible for fixing those tariffs in order to guarantee the economical sustainability of network development and ensure that costs passed on through consumers are duly economically justified. In addition, EMRC has the duty and competences for determining the fees, service charges, deposits and any other costs related to the sector.

### 3.2.2.4 Networks rules, technical standards, performance indicators and environmental requirements

In its role of regulator, EMRC has the power to set and approve network codes and rules (in cooperation with other agencies/bodies such as the government), including capacity allocation at interconnection points, congestion management and quality of service. This ensures that the terms and conditions to use and access these infrastructures prescribe that they should be
managed in a non-discriminatory, transparent, efficient and effective way.

In addition, EMRC participates in developing the technical standard specifications related to the sector appliances’ and facilities in consultation with other stakeholders in order to issue the same by Jordan Standards and Metrology Organization. This competence is related to the task of EMRC in setting the requirements for implementing the environmental conditions to be available in entities and facilities of the sector in cooperation with relevant parties and in accordance with the legislation in effect.

It should be noted that in many developed Countries environmental issues are dealt by autonomous entities or Authorities appropriately set up by the governments. In some cases, dealing with such issues is elevated to the rank of Environmental Ministries that are an active part of the government. They deal, along with the other Ministries and local Authorities, with the applications for energy permits and operational licenses. In addition, their areas of competence extend beyond the energy fields to contain all the environmental threats to the Country.

Finally, EMRC issues performance indicators for the Distribution System Operators (DSOs) and for the electricity suppliers.

### 3.2.2.5 Unbundling and cross subsidies

Preparing the appropriate conditions for unbundling electric service – that is, pricing and selling separately all of the services that comprise today bundled service – is the prerequisite for introducing and developing competition, thus avoiding cross subsidies and enabling a competitive market to develop in some services, so that customers could choose services they need, decline those that they do not, and presumably pay less. In addition, unbundling will prevent cross subsidies between bundled activities, allowing real costs to be properly allocated.

Unbundling is normally a long, complicated process but it will lead to impressive results opening the market to an effective competition in the unregulated activities. There are four main types of unbundling vertically integrated utilities:

- **Accounting unbundling** is the least drastic form of unbundling; separate accounts must be kept for the network activities and generation activities to prevent cross subsidization.

- **Functional unbundling** (also called management unbundling) requires, in addition to keeping separate accounts, that the operational activities and management are separated for transmission and generation activities.

- **Legal unbundling** requires that transmission and generation be put in separate legal entities.

- **Ownership unbundling** is the most drastic form of unbundling. *Generation and transmission have to be owned by independent entities.* These entities are not allowed to hold shares in both activities.

Several stages are required to accomplish unbundling:

- **Bundled electric services must be unbundled.** These services must be separated into discrete, independent functions which can be served by existing or new business entities.

- **The costs of these unbundled services must be carved out of the costs of the bundled service.** The separated costs will be the basis for the prices of each new service. This will
involve the application of cost allocation and accounting methods. The correct application of
cost allocation is required to ensure that the regulated services are priced at cost and do not
subsidize competitively offered services. To ensure that competition will flourish for these
competitively offered services, some organizational changes of existing utilities may be
required. This could range from functional unbundling to divestiture or corporate spin off of
certain functions or services.

- In order to preserve the reliability of electric service, and to facilitate commercial exchange,
  essential electric services must be divided into two categories, those that are potentially
  competitive and those that should remain regulated services. At a minimum, a potentially
  competitive service should be technically feasible for a variety of suppliers to provide the
  service and be economically beneficial for suppliers to compete to provide the service, i.e.,
  the prices paid by customers should fall or quality of service increase. The remaining
  regulated services either exhibit natural monopoly properties or are not amenable to
  competitive markets.

- The market and regulatory structures conducive to a reduction of overall costs to customers
  must be identified. This fourth stage will require analysis of market structure, regulatory
  practices, and the legal rights and obligations of utilities, customers, and other industry
  participants. To complete these steps, EMRC should have the competences for analysing all
  utilities activities and establishing guidelines on how to separate accounts for licensed
  activities in order to monitor the effective separation (which may be at a corporate,
  accounting, ownership level) between competitive and regulated monopolistic activities.
  This separation will minimize the possibilities of cross subsidies between generation,
  transmission, distribution and supply activities. Effective unbundling of activities can increase
  competition as monopolies are broken up and market entry can be easier for new market
  actors.

3.2.6 Recommendations to government

EMRC should make recommendations to the Ministry on to the transition from the single buyer
approach to the competitive electric market approach as described under the unbundling
competences. More specifically, EMRC should make recommendations or issuing opinions on
draft legislation, on policy documents or on legislation reviews proposed by the executive
power through a formal or informal process. Currently, EMRC opinions are not made public.

3.2.7 Cooperation with other institutions

EMRC participates with the competent bodies in developing the principles for import and export
of metals. Moreover, it manages the communication with the institutions and organizations in
charge of regulation and monitoring of electricity, nuclear energy, radiation protection and
nuclear safety and security in Arab and foreign countries with a view to benefit from their
scientific expertise, researches and aids & grants in their respective field of work.

3.2.8 Nuclear

In the field of nuclear energy, EMRC participates, upon the approval of the Council of Ministers,
in Arab, regional and international projects for radiation protection, nuclear safety and security,
energy and minerals related to expertise or researches. Additionally, it regulates the
relationships between Jordanian entities and institutions concerned with radiation protection
and nuclear safety on one hand, and between them and the international, regional, Arab and local organizations and institutions on the other hand. As a consequence, EMRC also applies comprehensive nuclear safeguards and creates an inventory system to control all nuclear materials subject to such safeguards.

### 3.2.2.9 Contracts

EMRC provides binding guidance, reviews and rejects or approves contract terms between regulated entities and/or market actors as well as issues appropriate templates for standardized contracts.

### 3.2.2.10 Access to information

EMRC accesses all the information available by market or transmission system operators (TSOs) and DSOs in order to be able to know all features useful to analyze the evolution of energy markets and infrastructures. Since data may be confidential, both from commercial and security point of view, EMRC should assure appropriate measure to treat such data and to protect customers’ privacy.

#### Recommendations on competences

As pointed out in the preceding paragraph on competences, in most Countries, environmental legislation is extremely important and should address regulation. Environmental compliance to regulation is mentioned in several occasions among EMRC responsibilities. Yet, the Commission organization, as described by its block diagram of 2016, seems to be missing an environmental branch. Therefore, EMRC should organize itself to extend its competences in order to deal with the subject.

Another important issue apart from the lack of performance indicators (as explained below), is that the regulator does not issue industry or consumer standards. This situation appears to impede the regulator's monitoring role.

Although monitoring is an important EMRC responsibility, data collection appears to be missing in several important areas, namely:

- Data on compliance: compliance with legal obligations, organizational/corporate compliance and quality of regulatory process.

Data collection in these areas should be developed using all the available tools. In many cases preparing appropriate questionnaires focusing on selecting the pertinent data and parameters is a complex exercise where it will be useful to examine other MEDREG regulators experience. Elaborating the answers will require appropriate skills and the expertise to select the relevant answers disregarding the marginal considerations that may be present among the answers.

Selected benchmarks should be used as reference to compare collected data and evaluate the differences. It should be noted that national benchmarks in the MEDREG basin may vary from country to country depending on their similarity with the Jordanian situation.

These actions will complement the data already monitored and will allow EMRC to elaborate...
additional KPIs that are essential for a meaningful performance evaluation that may lead to appropriate action plans in the areas outlined above. A meaningful example of possible action plans is suggested by the recommendations of the Good Regulatory Principles in the Mediterranean Countries, MEDREG 2014, as reported on page 9 of this report, where KPIs are actually a good measure of the milestones reached in each action plan.

Market monitoring should be enhanced by establishing an automated data collection platform that would speed up the process and save at least some resources. Not all data can be collected automatically but at least some significant data can be collected by the new generation “smart” meters that should eventually be deployed by the utilities.

With the present “bundled” situation, there is also no mechanism that prevents licensees from providing cross-subsidy between market activities and non-market activities. As pointed out under the “unbundling competences”, accounting separation for vertically integrated companies should be developed. This separation will minimize the possibilities of cross subsidies between generation, transmission, single buyer, fuel buyer, distribution and supply activities, therefore encompassing all the activities performed in the energy systems. Furthermore, effective unbundling of activities can increase competition as vertically organized utilities are broken up and market entry can be easier for new market entrants.

Finally, there are no mechanisms available for meeting the demands of third parties (TPA access) for connection to the transmission and distribution networks and for system use. Third party access should be guaranteed. It gives electricity and gas customers the right to choose from whom they receive a supply of electricity and/or gas and therefore enhances competition. For such a supply to be given, electricity and/or gas must be conveyed across networks to enable a supply to customers from third party suppliers. The right to choose a supplier of electricity and/or gas is a fundamental component of a competitive energy market. The provision of third-party access can be broken down into a number of stages with distinct responsibilities and timings for each party (network owner, customer and third-party supplier).

Case study: The Energy Market Regulatory Authority (EMRA) in Turkey

EMRA is an autonomous, public legal entity with administrative and financial authority established to regulate and monitor electricity, natural gas, petroleum and liquid petroleum gas markets. EMRA is governed by the Energy Markets Regulatory Board. EMRA can create and approve tariff levels, issue licenses, establish quality service standards and address other matters such as management and consumer complaints arising from lack of quality or interruptions in the power supply. EMRA often cooperates with the Turkish Competition Authority, and its decisions can be appealed before the administrative courts.

EMRA’s organization and competences are mainly defined by Law No. 4628 and the other laws governing the respective energy sectors. EMRA’s main objective is to regulate and supervise the energy market in order to provide a sound, transparent and competitive market and foster the appropriate conditions to provide electricity and energy sources to consumers in the most convenient way in terms of quality, quantity, price and environmental compatibility. In line with the relevant market laws (Electricity, Natural Gas, Petroleum and LPG), EMRA regulates the respective energy sectors by issuing secondary legislation and licenses, monitors the activities (covering conformity with the legislation and collecting market data), investigates the market participants’ compliance, gives orders and issues legally binding decisions and penalties to the licensees. Furthermore, powers and tasks of EMRA regarding renewable energy resources are also included in the Renewable Energy Law No. 5346 introduced in 2005. Moreover, EMRA settles disputes between market participants and between consumers and
market participants.

**Competences**

EMRA main competences (responsibilities and powers) are as follows:

- Granting licenses defining the authorized operations as well as resulting associated rights and obligations of legal entities in electricity, natural gas, petroleum, and liquid petroleum gas markets; auditing organizations engaged in aforesaid markets
- Monitoring the market performance, designing related regulations and auditing the enforcement process
- Determining statutory principles of pricing and approving or fixing distribution and transmission tariffs for access and use of the electricity and natural gas systems. Tariffs are set considering the investment plans and their fulfilment undertaken by the system operator.
- EMRA also has the competences to regulate cross-border capacity allocation and balancing regimes in line with the relevant secondary legislation.

**Enforcement**

EMRA has the enforcement powers to fulfill its responsibilities. Among them:

- Imposing administrative sanctions, through the Electricity Market Regulation Board, in case of violations
- EMRA has the right to open investigations on market participants’ compliance with the relevant legislation in all energy markets it regulates. If non-compliance persists after EMRA’s written warning, EMRA is entitled to issue administrative fines and double the fines in case of repetition of the infringement.
- In the event that the license holders do not abide by law, EMRA may impose penalties either in the form of a monetary fine or the cancellation of the license. The amount of penalties is categorized according to the offence. The amounts of penalties in the Market Laws are reviewed each year by the Ministry of Finance.

### 3.3 Enforcement

“Enforcement is to ensure compliance with rules by market participants and regulated entities, in order to obtain the public benefit that regulation provides” (Good Regulatory Principles in the Mediterranean Countries, MEDREG 2014).

The Jordanian Electricity Market has been relatively liberalized since 1996 when an electricity law allowed the generation of electricity from private producers. In 1997 with the sale of 51% of public shares of CEGCO (PPC) effectively ceased to be a state monopoly, even though the central government exercises a substantial control either directly (40%) or through other branches of government (i.e. Social Security Agency).

Furthermore, in 2002 the General Electricity Law set out a comprehensive privatization process for the electricity sector and created a national regulator (the Electricity Regulatory Commission), now part of EMRC. Transmission is still controlled by the Jordanian State and electricity distribution to the final consumer is operated by EDCO, currently owned 100% by the State. NEPCO is responsible for electricity transmission, for the development of the national grid and for the interconnections between Jordan and its neighbors. Generation of electricity has been liberalized but the main company is CEGCO with a total production of 4.2 TWh in 2016 (around 21% of the total power generation) and with a total installed capacity of around 1,100 MW.

In a market with heavy concentration, enforcement powers of the regulator become crucial.
Transfer of stakeholders is regulated by law and enforced by EMRC. Consequently, the direct or indirect acquisition, by a natural person or a legal entity, of shares that amount to more than ten percent of the capital of a licensee (five percent for publicly traded companies) are subject to EMRC’s Board approval. Such a provision is similar to many provisions on the subject currently enforced in many EU countries. Therefore, it constitutes a sound administrative practice.

When it comes to market behavior it appears that EMRC has the power to investigate market abuse and impose pecuniary sanctions. It is empowered by law to have access to any relevant document in any form, and to receive a copy of it, demand information from any relevant person, carry out on-site inspections, by a designated officer (“observer officer” according to EMRC), request existing telephone and existing data traffic records, and, finally, request the cessation of any practice that is contrary to the law and regulations or contrary to delegated acts, or to the implementation guidelines adopted on the basis thereof. Furthermore, the regulator can request a court to freeze or sequester assets, pending the outcome of an investigation.

However, it appears that EMRC cannot request a court, or any competent authority, to impose a temporary prohibition of a professional activity in the electricity sector.

There is a clear drawback in the absence of any mechanism to revoke or waive granted licenses. In a liberalized market the national regulator should have the power to review periodically the licenses granted and impose sanctions for non-compliance with the requirements set out in the original license and/or the licensees’ market behavior. In cases of serious license violations, the regulator should have the power to revoke said license.

EMRC can enforce compliance with industry and consumer standards and regulatory commitments through legal punitive (pecuniary) powers. Thus, EMRC can collect information from the regulated entities by a compulsory process and in cases of non-compliance it reserves the right, under the law, to impose pecuniary sanctions, independently, i.e. without the need to resort to any other public authority. Furthermore, it can refer disputes between market actors and regulated entities to a mediation with or without the assistance of another agency, i.e. the office of the Ombudsman. The final decisions, in disputes between market actors and regulated entities in the electricity sector, fall within the competence of EMRC. Finally, EMRC has the power, in cases of criminal infringements, to refer a case to the Public Prosecutor.

On the consumer side, non-technical losses in distribution should be contained. This is normally achieved through appropriate metering arrangements. Although advanced metering is the preferred tool to investigate such losses, older meters can be deployed to pinpoint electricity thefts. This effort will require a specific program by the distributors endorsed and sponsored by EMRC.

**Recommendations on Enforcement**

EMRC should have the power to review periodically, on its own initiative or after a complaint filed with the regulator, the licenses granted and impose sanctions for non-compliance with the requirements set out in the original license and/or the licensees’ market behaviour.

In addition, **EMRC should have the possibility to request a court, or any competent authority, to impose a temporary prohibition of a professional activity in the electricity sector.**
If a recommendation of paramount importance can now be made, is that of a legislative change towards empowering EMRC to revoke or waive granted licenses, under judicial supervision, will enhance its powers and constitutes a sound administrative practice.

To solve disputes between market actors, regulated entities and consumers, EMRC should define fast track and efficient procedures to solve minor disputes out of court. These disputes should be handled by mediation, in house procedures or through the office of the Ombudsman.

Moreover, vulnerable consumer’s protection should be enforced through periodic EMRC controls in order to provide needed social support to eligible consumers. At the same time periodic controls will prevent petty fraud attempts.

Finally, EMRC should consider developing criteria and rules on third party access rights. Appropriate legislation should be enacted or reviewed in order to establish the possibility of such access. A policy guidance should be developed to help network owners, customers and potential third-party suppliers in assessing what steps they need to take in order to ensure compliance with the legislation.

Case study: The National Electricity Regulatory Agency (ANEEL) in Brazil

Based on the general policy established by the National Council for Energy Policies (CNPE) and Ministry of Mining and Energy (MME), the Brazilian electricity sector is regulated by ANEEL, an independent federal regulatory agency.

ANEEL is a special independent body linked to the MME. It has technical and political autonomy to regulate, supervise and monitor activities related to the electricity sector. Modeled on the concept of independent regulators, ANEEL emerged from the restructuring of the electrical sector and it started its activities as a federal Agency on December 2nd, 1997, following the enactment of Decree 2,335 of October 6, 1997, which establishes the directives to be followed by the Agency, its powers and responsibilities, its governing and administrative structure.

ANEEL is characterized by its administrative independence and by absence of hierarchical subordination. It is managed by a collegiate Board of Directors, composed by the General Director and four others, appointed by the President and confirmed by the Senate. The executive functions are under the responsibility of twenty departments. ANEEL decisions are not reviewed by the government or other administrative entity, except by the judicial branch. ANEEL has financial autonomy provided by the annual collection of inspection tax paid by all energy consumers.

ANEEL’s mission and objectives are to regulate and monitor the production, transmission, distribution and supply of power, according to the policies and directives established by the federal government, and to establish conditions for power market development which balances the interests of market players for the broader benefit of society.

Competences

- Permitting and authorizing electric-power facilities and services.
- Mediating conflicts of interests among industry players and between these agents and consumers; proposing and enacting regulations for the electricity sector.
- Implementing and regulating the exploitation of various energy sources, including the use of hydroelectric and renewable energy.
- Managing and supervising concession and permission contracts for electric power public services (generation, transmission and distribution, including the approval of electricity tariffs).
- Analyzing negotiations and transactions between concessionaires, permit holders and authorized companies.
- Defining the criteria and methodology to determine transmission and distribution tariffs.
• Calculating rates for providing electric power services (especially the electricity supply from distributors).
• Approving rules and procedures for the electric power trade.
• Promoting public bidding procedures for the granting of new concessions.
• Organizing and promoting energy auctions.
• Educating and informing industry players and society about energy policies, guidelines and regulation.
• Accessing all the information available by market or system operators in order to be able to know all features useful to analyze the evolution of energy markets and infrastructures.

**Enforcement**

• Enforcing fair competition rules in the electric energy industry as well as free access to electric systems, and warrants fair electricity rates.
• Analyzing power system needs and enforcing investments by regulated entities.
• Inspecting the generation, transmission, distribution and commercialization of electric energy. As a tool to accomplish its mission, ANEEL can impose sanctions, since the agency has legal competence in applying administrative penalties to the agents.
• Assessing the quality of services and recommending appropriate steps to improve it if feasible.
• Deciding, at an administrative level, on disputes between concessionaires, permit holders, authorized or independent power producers and self-producers, as well as disputes between these agents and their respective consumers.
• Imposing fines and penalties on agents for non-compliance with regulatory obligations.

3.4 Internal organization

“Effective organisation means to have clear decision-making processes and an operative internal structure, with distinction of roles and responsibilities” (Good Regulatory Principles in the Mediterranean Countries, MEDREG 2014).

EMRC is allowed to decide to hire staff members and to manage the hiring procedure. EMRC can select the most adequate required skills and carrying on a procedure, consisting of examinations and interviews, directly appointing the preferred candidate. These approaches are meant to guarantee the collections of the most suitable skills and competences, even though open call is the best option to transparently identify and hire professionals.

Measures to incentivize employees are carried out on discretionary basis, since there is a structured framework to reward better performances, according to The Civil Service Bureau assessment method. In any case, meritocratic rewarding systems could be considered, even taking into account benefits not necessarily based on extra salaries (e.g. soft skills training).

Specialists dealing with licensing procedures are not assigned to specific departments or units, but these responsibilities are distributed in each technical department, which reflect the diverse regulated sectors. In order to create a more homogenous and transparent approach, a strong coordination among the involved specialist teams could be put in place.

This could be achieved through common general procedures to be shared and adopted, for instance regarding how to interact with companies who require or have already been appointed as licensees.

In order to create also the same professional approach as a “professional transversal team”, dedicated trainings and team building sessions could be delivered to all professionals and specialists. Moreover, frequent exchange of employees among the different units could
promote new professional challenges and more transparent procedures, while preventing potential inappropriate relations with long-standing stakeholders.

Considering that monitoring licensees is a main issue, a particular concern should be focused on how to obtain data and information from licensee in order to verify the compliance to the contractual licensing agreements.

Regulated entities should be obliged to transmit regularly data and information to EMRC in order to elaborate and update constantly a transparent status of the compliance to the regulation. These information flows could be achieved more efficiently using digital devices or internet transmission protocols to an information system managed by the Jordanian regulator. These data could be stored and managed in order to elaborate a clear and transparent status of single licensee as well as of the whole regulated sector. Moreover, strong and clear data sets allows to define a more solid and robust regulation based on objectives and transparent criteria (ARERA, the Italian Regulatory Authority for Energy, Networks and Environment requires more than 90 mandatory data collections from regulated entities in order to have information and data to define cost-based tariffs).

For instance, inspections could be randomly performed in order to collect data and information. Another approach could be based on defined set of data that could be assumed as reference benchmark. In Italy, the Electricity Services Operator GSE (the agency in charge to provide almost 16 billion euro each year of incentives to renewable energy producers) has signed contracts with a number of universities and energy experts to launch periodical campaign of visits and inspection to verify if RES power plants are compliant with the standard protocols to receives the incentives they have been asked.

**Recommendations on internal organization**

To better liaise with licensing procedures that are currently distributed in each technical department, EMRC should adopt a more homogenous and standardized approach with a common transversal procedure among departments, strengthening the exchange of information and practices between professionals in charge of licensing procedures, organizing dedicated trainings and team building sessions for them and increasing their rotation among the different technical departments.

In addition, EMRC should oblige regulated entities to regularly transmit data and information using digital devices or internet transmission protocols in order to elaborate and update constantly a transparent status of the compliance to the regulation. As a consequence, EMRC should put in place an information system where these data could be stored and managed. In addition, inspections could be randomly performed in order to collect data and information.

### 3.5 Transparency

Transparency in the regulatory process helps others to understand the regulator’s work and is beneficial for a proactive stakeholder engagement (Good Regulatory Principles in the Mediterranean Countries, MEDREG 2014).

One of the main values of EMRC published is the transparency. EMRC is disseminating its decisions and information related to licenses on the national newspaper and the website. In addition, EMRC is responsible for building an integrated information system for the energy
sector according to the law no 8 for the year 2017.

Such decisions, prior to be published, are subject to an informal consultation carried out by EMRC with different stakeholders through meetings and letters, in order to collect suggestions and feedbacks to be integrated in the final resolution. The decision-making process does not foresee any legal obligation for EMRC to perform neither any public consultation nor any public hearing. However, EMRC considers the informal consultation an important step to apply right rules, thus being keen in engaging stakeholders to establish a clear and functioning licences system.

In such process, for the sake of the licensed applicants, EMRC keeps secret and confidential data that might affect the business. In addition, EMRC is using social media to publish its activities and shares them in a larger scale through Facebook page and twitter, being also owner of a mobile app, useful for consumption calculations.

Despite the satisfying degree of transparency in Jordan, there are some improvements that can be made by looking at other national cases. For instance, the Singapore Energy Market Authority delivers information to its licensee in a clear and transparent way, providing a clear understanding of all the licensing issues (electricity and gas regulations, codes, standards, agreements, and exemption orders) under a specific section for licensees on its website. Another case is represented by NERSA, the regulator of South Africa, which develops the consultation process with a high degree of transparency, describing the consultation process and detailing all the obligations required for participating in the licensing process on its website. Finally, also Egypt Era is giving a higher attention to public hearings regarding the licenses application and approved procedures for public hearings, developing simultaneously awareness campaigns and press releases to increase the level of communication with stakeholders.

**Recommendations on transparency**

EMRC should hold awareness campaigns and develop related press release to increase the awareness of stakeholders in licensing procedures.

In addition, the Jordan regulator should actively use the website for disseminating information on licensing procedures, describing the procedure for licensing and detailing all the obligations required to request a license. The publication of templates for standardized contracts for users could also increase EMRC’s transparency.

Finally, the decision-making process does not foresee any legal obligation for EMRC to perform neither any public consultation nor any public hearing. EMRC should set a clear public hearing for licensing regulations and all the related regulations.

### 3.6 Accountability

Accountability means that the regulator takes on the responsibility and is able to demonstrate outcomes and results from its regulatory action (Good Regulatory Principles in the Mediterranean Countries, MEDREG 2014).

EMRC developed grid codes and license process, including the simplified one for renewable energy projects, and disseminates its information and decisions related to licenses. However, EMRC does not collect performance technical data, despite the fact that it developed a system.
of key performance indicators and despite its duty to motivate its regulatory decisions with data such as the change of tariff data.

Tariffs are published on the website, but it’s not clear how other regulatory outcomes are published and disseminated. For instance, EMRC Annual reports, regulatory procedures and licensing conditions are not clearly mentioned as part of EMRC outcomes on the regulator website. Moreover, disputes decisions, financial issues and reasons for regulatory decisions are not published and communicated to different stakeholders with a clear procedure and no specific communication channels are foreseen.

Considering that the law clearly states that it’s the responsibility of EMRC to establish an integrated communication information system for the whole energy sector, EMRC should develop a clear communication strategy implemented through different channels in order to deliver information to stakeholders in an accurate and effective way. For example, the Singapore Energy Market Authority (EMA) is having a clear mechanism of consultation for different regulatory issues such as changes to the regulatory framework for the energy industry or the code of conduct for licensees. Also Egypt ERA has recently approved a public consultation process and its annual reports are published on the website together with relevant information for licenses procedures.

### Recommendations on accountability

The Jordanian law clearly states that it is responsibility of EMRC to establish an integrated communication information system for the whole energy sector. As a result, EMRC should develop a clear communication strategy implemented through different channels in order to deliver information to stakeholders in an accurate and effective way.

Currently, EMRC Annual reports, regulatory procedures and licensing conditions are not yet clearly mentioned as part of EMRC outcomes on the regulator website. EMRC should fill these gaps by publishing its annual reports and any new regulations related to licensing.

Also disputes decisions, financial issues and reasons for regulatory decisions are not published and communicated to different stakeholders with a clear procedure. EMRC should improve the stakeholders’ awareness on its procedures, setting up clear appealing procedures against its decisions.
4. Steps Forward

The current document collects recommendations addressed to the Energy and Minerals Regulatory Commission (EMRC) to improve its capacity to act as an independent energy authority in its country, with the specific capability of issuing, monitoring and revising electricity licenses.

MEDREG considers that the proposed recommendations will require EMRC to engage in a substantial revision of its practices and a renewed dialogue with the Government on the powers and competences entrusted to the regulator.

For this reason, in 2019 these recommendations will be the object of a dedicated capacity-building support that can leave behind some applicable solutions for Jordan. MEDREG will support EMRC with a workshop on the results of the 2018 peer review to provide a concrete roadmap to Jordan on how to improve its electricity licensing procedures. The workshop will be enriched by the participation of experts that can detail the legislative and technical steps Jordan should take in order to endow EMRC with the powers necessary to correctly give, monitor and withdraw licences. In addition, the workshop should also involve the other public and industrial actors that are part of the licensing process.
### Annex 1 – List of abbreviations

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AFD</td>
<td>Agence Française de Développement</td>
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<tr>
<td>ANEEL</td>
<td>Agência Nacional de Energia Elétrica</td>
</tr>
<tr>
<td>ARERA</td>
<td>the Italian Regulatory Authority for Energy, Networks and Environment</td>
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<tr>
<td>BOO</td>
<td>Build, Own, Operate</td>
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<tr>
<td>BOT</td>
<td>Build, Operate, Transfer</td>
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<tr>
<td>CCGT</td>
<td>Combine cycle gas turbine</td>
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<td>CEGCO</td>
<td>Central Electric Generating Company</td>
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<td>CNPE</td>
<td>National Council for Energy Policies</td>
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<td>CO2</td>
<td>Carbon dioxide</td>
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<td>DSOs</td>
<td>Distribution System Operators</td>
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<td>EDCO</td>
<td>Electricity Distribution Company</td>
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<tr>
<td>EgyptERA</td>
<td>Electric Utility and Consumer Protection Regulatory Agency</td>
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<tr>
<td>EIB</td>
<td>European Investment Bank</td>
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<td>EMA</td>
<td>Singapore Energy Market Authority (EMA)</td>
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<td>EMRA</td>
<td>Electricity Market Regulatory Authority</td>
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<td>EMRC</td>
<td>Energy and Minerals Regulatory Commission</td>
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<td>ERC</td>
<td>Electricity Regulatory Commission</td>
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<td>GSE</td>
<td>Italian Electricity Services Operator</td>
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<td>GW</td>
<td>Gigawatt</td>
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<td>GWh</td>
<td>Gigawatt hour</td>
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<td>IDECO</td>
<td>Irbed District Electricity Company</td>
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<td>INS WG</td>
<td>MEDREG Institutional Working Group</td>
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<tr>
<td>IPPs</td>
<td>Independent Power Producers</td>
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<td>JD</td>
<td>Jordan Dinars</td>
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<td>JEPCO</td>
<td>Jordan Electric Power Company</td>
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<td>JNRC</td>
<td>Jordan Nuclear Regulatory Commission</td>
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<td>JREEEF</td>
<td>Jordan Renewable Energy and Energy Efficiency Fund</td>
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<td>KEPCO</td>
<td>Korea Electric Power</td>
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<td>KPIs</td>
<td>key performance indicators</td>
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<td>kV</td>
<td>Kilovolt</td>
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<td>kWh</td>
<td>Kilowatt hour</td>
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<tr>
<td>LNG</td>
<td>Liquefied Natural Gas</td>
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<td>LPG</td>
<td>Liquid petroleum gas</td>
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<td>MEDREG</td>
<td>Association of Mediterranean Energy Regulators</td>
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<td>MEMR</td>
<td>Ministry of Energy and Mineral Resources of Jordan</td>
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<td>MME</td>
<td>Ministry of Mining and Energy</td>
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<td>MW</td>
<td>Megawatt</td>
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<td>NEPCO</td>
<td>National Electric Power Company</td>
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<td>NERSA</td>
<td>National Energy Regulator of South Africa</td>
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<td>NRA</td>
<td>Natural Resources Authority</td>
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<td>PPA</td>
<td>Power Purchase Agreement</td>
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<td>SEPCO</td>
<td>Samra Electric Power Company</td>
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<td>TPA</td>
<td>Third Party Access</td>
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<td>TSO</td>
<td>Transmission System Operator</td>
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<td>Term</td>
<td>Definition</td>
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<tr>
<td>TWh</td>
<td>Terawatt hour</td>
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<tr>
<td>VAT</td>
<td>Value Added Tax</td>
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