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Oil, Gas & Energy Law Intelligence

The Jordanian Electricity Market - A Transitory Regime by Y. Abul Failat

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The Jordanian Electricity Market

A Transitory Regime

YANAL ABUL FAILAT

Abbreviations:

1st REEL	Renewable Energy and Energy Efficiency Law No.3/2010
CEGCO	Central Electric Generation Company
COM	Council of Ministers
EDCO	Electricity Distribution Company
EOI	Expression of Interest
ERC	Electricity Regulatory Commission
General Electricity Law	Temporary Electricity Law No.64/2002
GOJ	Government of Jordan
IDECO	Irbid District Electricity Company
Investment Promotion Law	Investment Promotion Law No.16/1995 and its amendments for the Year 2000
JEA	Jordan Electricity Authority
JEPCO	Jordan Electricity Power Company
Jordan's Energy Strategy	Jordan's Master Strategy of the Energy Sector for the Period 2007-2020
MEMR	Ministry of Energy and Mineral Resources
MENA	Middle East and North Africa
NEPCO	National Electricity Power Company
QEPCO	Qatrana Electric Power Company
REEL	Renewable Energy and Energy Efficiency Law No.13/2012
SEPCO	Samra Electric Power Company

1. Introduction:

1.1. Background:

In the light of strengthening energy security, diversifying the economy and promoting sustainable development; Jordan is revolutionising and modernising its electricity sector. The restructuring of the market taking place is mainly regulated under the framework of the Temporary Electricity Law No.64/2002 ("General Electricity Law") which is an interim legal instrument regulating the electricity sector during the period of transition to a wholesale competitive market operating under a multiple-buyer business model.¹ Like many other countries, three major trends could be noticed in Jordan, namely: (1) the gradual restructuring and liberalisation process which entails a disintegration of the energy value chain by unbundling the vertically owned utilities; (2) the increasing demands and the new loads which have to be included in the system; and (3) the crucial evolving role of renewable energy generation, particularly, wind power and photovoltaic plants.²

The market which is ultimately sought would provide greater incentives for controlling operating costs and construction of generating capacity; motivating the development of power technologies; and encouraging network operators to enhance their level of service quality and; diminish risks faced by consumers.³ Such liberalisation of the Jordanian market is in harmony with plans of expanding the electricity sector across the Mediterranean, whereby a Mediterranean Union is established endorsing a regional cooperation between the EU and states of the Middle East and North Africa ("MENA") enhancing the already existing Euro-Med free trade area.⁴ Accordingly, the Jordanian electricity market is growing beyond its borders and is slowly integrating as part of a larger network. For this reason, this paper's objective is to provide a guide or an overview of the Jordanian Electricity market by looking at its history and development, the market structure, and the general provisions of the interim legal framework regulating it.

¹Temporary Electricity Law No.64/2002 (General Electricity Law), Article 48.

²Alexey Sorokin, Handbook of Networks in Power system (Springer 2012) 469.

³Paul Joskow, 'Lessons Learned from Electricity Market Liberalisation' (2008) 29 (Special Issue 2) the Energy J 9, 11.

⁴EU Directorate General for Internal Policies, 'EU Energy Strategy in the South Mediterranean' (2011) Policy Department Economic and Scientific Policy Research Paper, 70; available at:

<http://www.europarl.europa.eu/document/activities/cont/201106/20110628ATT22803/20110628ATT22803EN.pdf> accessed 29.01.13.

1.2.Demand

The growth rate of electrical energy demand in Jordan which has been increasing constantly is associated with the parallel increase of heavy fuel oil.⁵ Amongst the objectives of Jordan's Master Strategy of the Energy Sector in Jordan for the Period 2007 – 2020 ("Jordan's Energy Strategy") is to tackle this accelerating growth in the unexpected demand for electricity by attracting and ensuring sufficient private investment in the electricity sector.⁶ Such objective is challenged by the fact that Jordan has almost no fossil fuel sources and is almost totally dependent on imported oil and gas which is causing a financial burden on the national economy as the country spends more than 7.5% of its national income on the purchase of energy.⁷

In 2011, the energy demand increased from 794 MW in 1994 to 2680 MW and the peak load at the interconnection system reached 2660 MW.⁸ Consumption is dominated by the transport, household and industrial sectors estimated to have consumed 7457 ktoe in 2011.⁹ The main reason for the increase from the original small demands in the 1990s was the rise in population as a consequence to the 1st and mostly the 2nd Gulf War.¹⁰ Moreover, it is provided that there is a pattern in the annual peak load in Jordan which occurs in the summer period between July and September.¹¹ This is the result of the proliferation of air-conditioning in the summer due to high temperatures and the large number of tourists and Jordanians who live

⁵ERC, 'Annual Report 2011' (2012), 18; available at:

<http://www.erc.gov.jo/English/Publication/Documents/annual%20report2011.pdf> accessed 29.01.13.

⁶MEMR, 'Summary of the Updated Master Strategy of Energy Sector in Jordan for the Period (2007-2020)' (2007), 4; available at: <http://www.memr.gov.jo/Portals/0/energystrategy.pdf> accessed 29.01.13.

⁷EBRD, 'Market Demand Study of Sustainable Energy Investment Potential in Jordan' (2011) available at: <https://www.devex.com/en/projects/market-demand-study-of-sustainable-energy-investment-potential-in-jordan-2> accessed on 28.01.13.

⁸Mohammad Al-Momani, 'Factors Affecting Electricity Demand in Jordan' (2013) 5 (1) Energy and Power Engineering 50, 51; ERC (n 5) 39.

⁹MEMR, 'Request for Proposals for Consulting Services for Establishing an Information System for Energy Sector in Jordan' (2013) 6; available at:

<http://www.memr.gov.jo/LinkClick.aspx?fileticket=0mWMAXZ69c%3d&tabid=36> accessed 12.02.13.

¹⁰Ibid, 58.

¹¹Momani (n 8) 51.

abroad and visit Jordan in the summer.¹² In 2011, the minimum load for the electricity system was 1080 MW, the maximum load in the morning reached 2660 MW and in the evening 2530 MW with a growth rate of 0.4% and 2.85% respectively.¹³

1.2.1. History and Development of the Market:

The electricity industry in Jordan started in 1938 when the first electricity company was created and commenced supplying electricity nine years later.¹⁴ The company evolved to become the Jordan Electricity Power Company ("JEPCO") which was the sole company in the market until the Irbid District Electricity Company ("IDECO") was found in 1961.¹⁵ Both companies were responsible for the production and supply of electricity for the majority of Jordan's consumers.¹⁶ The need for a "modern and reliable electricity system" was the purpose behind the Jordanian Government's ("GOJ") decision to implement the General Electricity Law No.21/1967 which established the Jordan Electricity Authority ("JEA").¹⁷ JEA was created as a self governing governmental institution holding a legal personality and independence with regard to administrative and financial matters.¹⁸ JEA enjoyed the right to generate, transmit and distribute electricity.¹⁹

¹²Jamal Jaber and others, 'Future Electricity-demands and Greenhouse-gas Emissions in Jordan' (2001) 69 (1) APPL ENERG 1, 18.

¹³ERC (n 5) 31.

¹⁴Malek Kabariti, 'Identification of National Energy Policies and Energy Access in Jordan' (2005) National Energy Research Group, 14; available at:

<http://webfealb.fea.aub.edu.lb/fea/research/erg/web/Policy%20Paper%20Jordan.pdf> accessed 19.03.12.

¹⁵ERC, 'Electricity and National Growth' (ERC, 2008)

<http://www.erc.gov.jo/English/AboutTheSector/Pages/default.aspx> accessed 28.03.12.

¹⁶Ibid.

¹⁷The General Electricity Law No.21/1967, Article 3; Kabariti (n 14).

¹⁸The General Electricity Law No.21/1967, Article 3 (1).

¹⁹Ibid, Article 3(2).

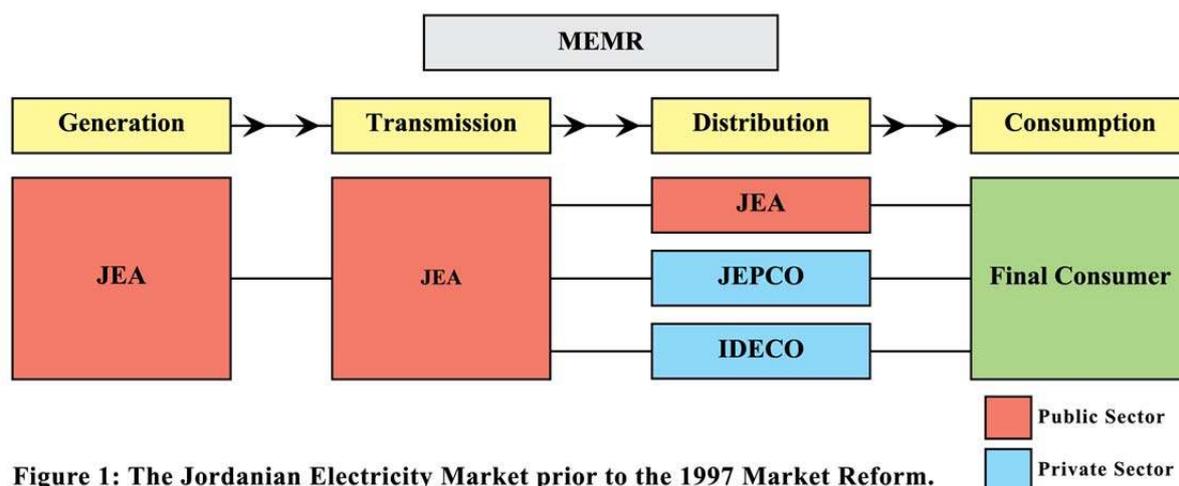


Figure 1: The Jordanian Electricity Market prior to the 1997 Market Reform.

1.2.2. Privatisation:

When Jordan has appreciated the need for developing the electricity market, the Council of Ministers ("COM") has created the Executive Privatisation Commission which was responsible for administering a national privatisation reform on various sectors including electricity.²⁰ The main reasoning for such reform is to attract investment, strengthen local capital market, install new generation plans, implement schematic projects and cover local demand.²¹ The reform also divided the regulation of the market by assigning the policy making role to the Ministry of Energy and Mineral Resources ("MEMR") and the regulation to the Electricity Regulatory Commission ("ERC").²² This also entailed any roles of investment or operation within the market to private entities.²³ By virtue of the 1999 Decree No (13) and the COM Resolution of 1997, JEA was unbundled in stages to three companies: the Central Electric Generation Company ("CEGCO") who is responsible for production; the National Electricity Power Company ("NEPCO") who is responsible for transmission and the Electricity Distribution Company ("EDCO") who is responsible for supply.²⁴

2. The Sector Structure:

2.1. The Model:

²⁰League of Arab States, Arab States Business Law Handbook Vol 1 (IBP 2007) 108.

²¹F. Abdulla and others, 'Status of Jordan Renewable Energy Sectors: Problems Needs, and Challenges' (Beirut Regional Workshop on Energy Efficiency and Renewable Energy Technology, Beirut, April 2004) 5.2.

²²Mohamed Arafat, Rashid Aburas and Fawzi Kharbat, 'The Privatisation of the Electricity Supply Industry in Jordan' (17th World Energy Congress, Houston, September 1998).

²³Ibid.

²⁴NEPCO, 'Historical Glimpse' (NEPCO, 2011) http://www.nepco.com.jo/english_history.html accessed 28.03.12.

In Jordan, the electricity market follows the single-buyer business model where a central entity, namely: NEPCO buys electricity from all the generating companies and then resells them to distributors or wholesale traders as illustrated in figure 2 below.²⁵ Thus, NEPCO which is a governmental entity acts both as a single buyer and a single bulk seller of electric power.²⁶

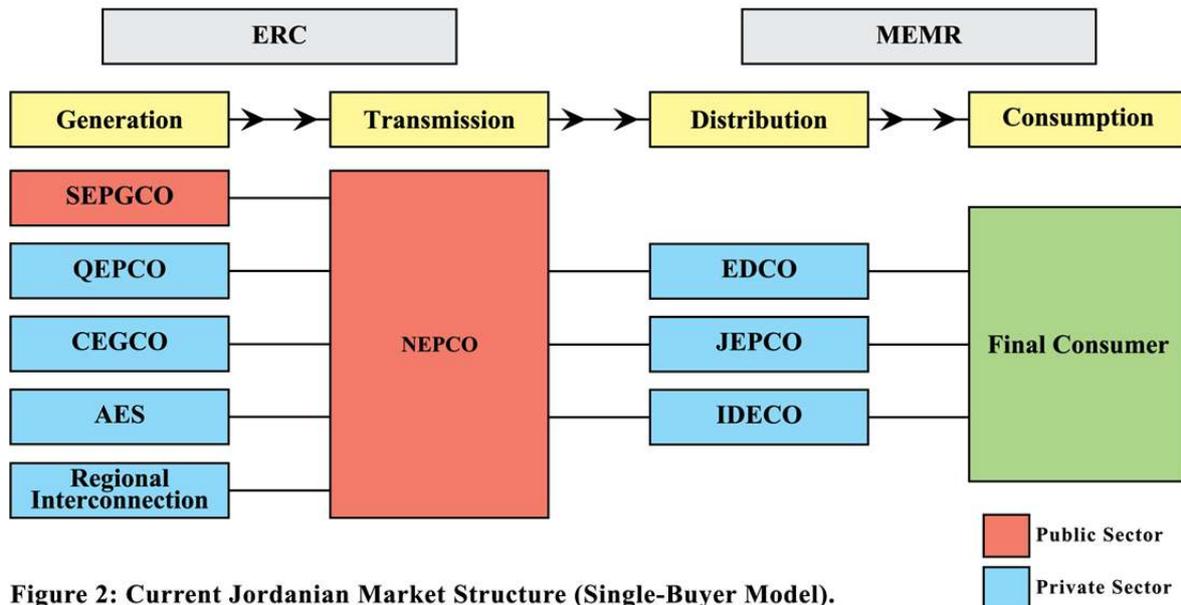


Figure 2: Current Jordanian Market Structure (Single-Buyer Model).

This model has been opted for with a view to restructure the electricity sector. It may be that Jordan has followed this business model as many developing countries see it as a way to preserve “an artificial monopoly over the wholesale trading of electricity even after the vertically integrated company is unbundled.”²⁷ Although this model benefits the government due to a number of technical, economic and institutional reasons; it cannot be relied upon in the long run as NEPCO is dependent on state support and guarantees by the GOJ who is facing unsustainable public sector deficits and high debts levels.²⁸

²⁵Andras Lakatos, 'Overview of the Regulatory Environment for Trade in Electricity in Janusz Bielecki and Melaku Gebeye Desta (eds.), Electricity Law in Europe: Review of Economic and Regulatory Challenges (Kluwer Law International 2004) 122.

²⁶Rana Tomaira, Legacy of a Rentier State: Reforming Jordan's Water, Energy, and Telecommunications (ProQuest 2008).

²⁷World Bank, 'The Single-Buyer Model: A Dangerous Path toward Competitive Electricity Markets' (2000) Note number 225/2000, 1; available at: <http://rru.worldbank.org/documents/publicpolicyjournal/225Lovei-1211.pdf> accessed 29.01.13.

²⁸EBRD, 'Country Assessment: Jordan' (2012), 19; available at: http://www.ebrd.com/downloads/country/technical_assessments/jordan-assess.pdf accessed 21.01.13.

Nevertheless, the single-buyer model was adopted in 1999 as a transitory model only.²⁹ This is evident from Article 48 of the General Electricity Law which mandates a move towards a competitive electricity market with multiple independent system and transmission operators as illustrated in figure 3.³⁰

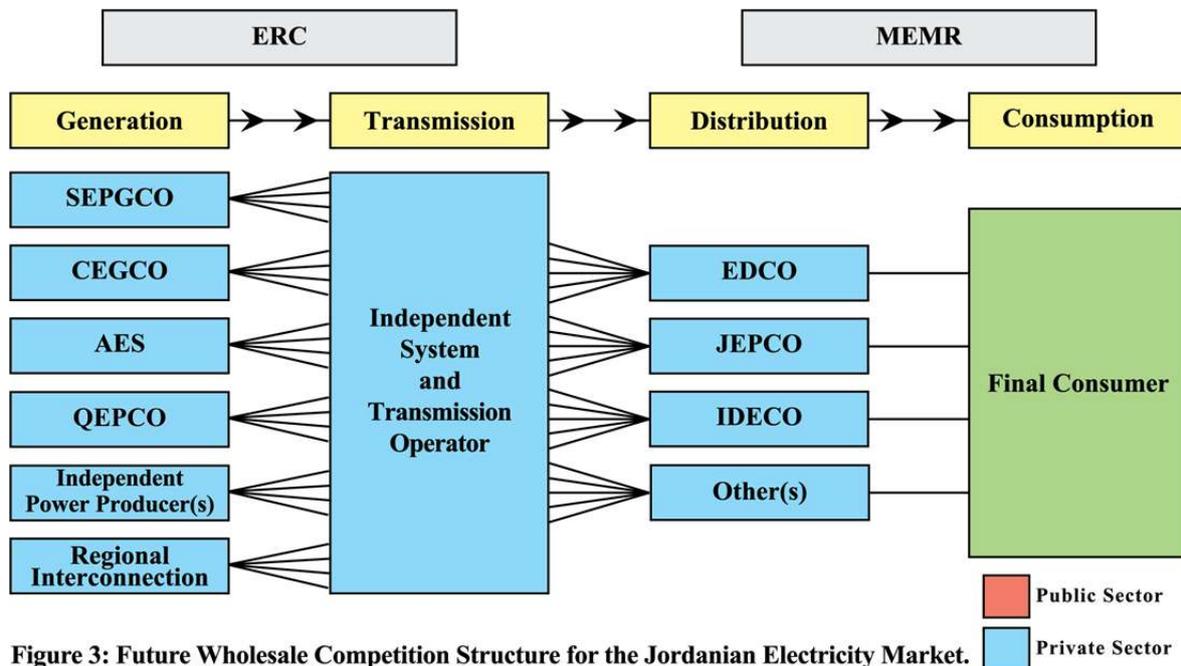


Figure 3: Future Wholesale Competition Structure for the Jordanian Electricity Market.

The law requires that the transition to such a market must be phased and managed carefully whilst taking into account the number of competitive entities; number of metering, IT and infrastructure necessary; financial viability of the sector; and the impact of competition on the prices payable by consumers.³¹ Such a transition will occur once the COM is satisfied that the electricity market or sector is developed and ready to shift to the multi-buyer model.³² Accordingly, the ERC is assigned a continuing responsibility to monitor the Jordanian electricity sector on this regard and report to the COM annually.³³

2.2. Electricity Value Chain:

A value chain is generally the “full range of activities which are required to bring a product or service from conception, through the different phases of production delivery to final

²⁹ PPIAF, 'PPIAF Assistance in Jordan' (October 2012), 1; available at:

http://www.ppiaf.org/sites/ppiaf.org/files/documents/PPIAF_Assistance_in_Jordan.pdf accessed 21.01.13.

³⁰ General Electricity Law, Article 48 (A).

³¹ General Electricity Law, Article 48 (B).

³² General Electricity Law, Articles 48 (B) and 48 (D).

³³ General Electricity Law, Article 48 (A).

consumer, and final disposal after use.”³⁴ The value chain approach used in Jordan; benefits from the fact that the outcome of both downstream and upstream are considered.³⁵ The electricity market in Jordan is following a global trend of departing from the traditional integrated planning of electricity generation and transition. This is the result of the liberalisation, the unbundling to a competitive market structure and the gradual privatisation of the market’s electricity value chain.³⁶ The market is disintegrating from a previous vertically integrated national monopoly towards a competitive market in terms of electricity generation and supply. The main divisions of the market are generation, transmission and supply. Generating companies are competing to sell power to the market and energy service companies’ purchase from those markets electric power which is ultimately sold to retail customers.³⁷ The power grids, or in other words the transmission and distribution systems are viewed as natural monopolies and are operated by both transmission and distribution system operators.³⁸

As a result of the change in the electricity market and the decoupling of power generation, transmission and distribution, there are different and sometimes unprecedented actors which interact and communicate.³⁹ This is followed by the need for intelligent automated processes which are subject to “new rules on standardisation, metering, and consumer transparency” which generate high amounts of data.⁴⁰ In the current market, the electricity value chain includes not only generation, transmission and distribution but also regulation, service

³⁴Meine Pieter Van Dijk and Jacques Trienekens, *Global Value Chains: Linking Local Producers from Developing Countries to International Markets* (Amsterdam University Press 2012) 13.

³⁵Ibid.

³⁶Maria Vagliasindi and others, 'Revisiting Policy Options on the Market Structure in the Power Sector' (Sustainable Energy Week 2011, Washington, 16 March 2011); available at: <http://www.esmap.org/sites/esmap.org/files/study%20on%20energy%20sector.pdf> accessed 21.01.13.

³⁷Sorokin (n 2).

³⁸Anke Wedilich, *Engineering Interrelated Electricity Market: An Agent-based Computational Approach* (Springer 2008) 8.

³⁹Sorokin (n 2).

⁴⁰BDI, 'the Energy Industry on the Way to the Internet Age.' (2010) BDI initiative Internet of Energy publication No.439, 2; available at: http://www.iiese.fraunhofer.de/content/dam/iiese/en/mediacenter/documents/BDI_initiative_IoE_us-IdE-Broschuere_tcm27-45653.pdf accessed on 21.01.13.

location, storage and IT solutions.⁴¹ The main activities of this chain are illustrated in figure 4 which represents additional integral characteristics of a modern electricity market.⁴²

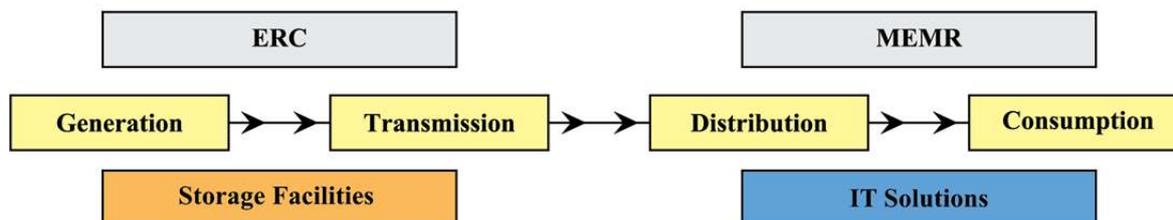


Figure 4: Modern Electricity Value Chain.

2.3. Market Players:

2.3.1. Regulation:

Apart from the MEMR who holds a policy making role, the main market player in regulation is the ERC. The establishment of the ERC followed the implementation of Law No.25/2000 which was the legal basis for the unbundling and privatisation of the market.⁴³ The General Electricity Law enforced the creation of the ERC in 2002,⁴⁴ an agency which is seen as a mean to liberalisation and capable of developing the efficiency, reliability, and development of the market.⁴⁵ The ERC has several powers including the grant of licences, the regulation of persons engaging in the electricity markets, setting and enforcing tariffs amongst other fees, and many other tasks necessary to meet the demands of the market and the ultimate goal of achieving a competitive wholesale market.⁴⁶

Article 47 of the General Electricity Law provides that the ERC sets the tariffs to all sectors except generation, who's tariffs is determined in conformity with any agreements in force between the generation licensee and NEPCO as a bulk supply licensee.⁴⁷ As to all other

⁴¹The China Greentech Initiative, 'The China Genentech Report 2009: Defining and Mapping Genentech Opportunities in China' (2009) at 158; available at: <http://www.china-greentech.com/sites/default/files/CGTR2009-FullReport.pdf> accessed 21.01.13.

⁴²Ibid.

⁴³The Privatisation Law No.25/2000, Article 7 (A) 6; available at: <http://www.idlo.int/MF/Documents/Regulations/571.pdf> accessed 14.03.12.

⁴⁴General Electricity Law, Article 6 (A).

⁴⁵OECD, 'Designing Independent and Accountable Regulatory Authorities for High Quality Regulation' (Proceedings of an Expert Meeting, London, January 2005) 7.

⁴⁶General Electricity Law, Article 7 (B).

⁴⁷General Electricity Law, Article 37 (B) and 47 (A).

licensed services, the ERC must take into account the following considerations when determining tariff methodologies:

- (1) allow a licensee that operates efficiently to recover the full costs of its business activities and to earn a reasonable return on the capital invested in business;
- (2) provide incentives for the continued improvement of the technical and economic efficiency with which the services are provided, and for the continued improvement of quality of services;
- (3) give to consumers economically efficient signals regarding the costs that their consumption imposes on the licensee's business;
- (4) avoid undue discrimination between consumers of the same category and consumer categories; and
- (5) gradually phase out or substantially reduce cross subsidies, except while providing lifeline tariffs.⁴⁸

Such a set of competencies and in particular the review and setting up of tariffs and costs are the heart of a regulator's function and are crucial for protecting consumers and facilitating investment.⁴⁹ The General Electricity Law provides the ERC with considerable independence from the government and other stakeholders.⁵⁰ Such independence is crucial for achieving effective governance and regulation and is a characteristic which enhances the credibility of the GOJ in the eyes of the investors who are afforded considerable protection resulting from such autonomy.⁵¹

⁴⁸General Electricity Law, Article 4 (A), 4 (B) and 4 (C).

⁴⁹UNIDO, Training Manual on Sustainable Energy Regulation and Policymaking for Africa (2006), Module 5: Structure, Composition and Role of an Energy Regulator, 5.6; available at: <http://africa-toolkit.reeep.org/modules/Module5.pdf> accessed 23.01.13.

⁵⁰For analysis on the independence of the ERC, see, Yanal Abul-Failat, 'The Jordanian Electricity Regulatory Commission: Independence in Theory or in Practice?' (2013) Advance January 2013 OGEL; www.ogel.org (OGEL, ISSN 1875-418X).

⁵¹Jon Stern and John Cubbin, 'Regulatory Effectiveness: The Impact of Regulation and Regulatory Governance Arrangements on Electricity Industry Outcomes' (2005) The World Bank 3536; Warrick Smith, 'Utility Regulators – The Independence Debate' (1997) The World Bank, Public Policy for the Private Sector Note, No 127; Ioannis Kessides, 'Reforming Infrastructure - Privatization, Regulation; and Competition' (2004) The World Bank Research Report 28985; Roger Noll, 'Telecommunications Reform in Developing Countries' in Anne Krueger (ed.), Economic Policy Reform: The Second Stage (University of Chicago Press 2002).

2.3.2. Generation

Before the establishment of the JEA in 1967, electricity was generated by two small diesel power facilities with a total capacity of 59 MW owned by JEPSCO and IDECO and afterwards, the installed capacity has increased in parallel to the rise in population and demand.⁵² More recently, the overall installed capacity has also risen in correlation with the increase in the prices of heavy fuel oil leading to a figure of approximately 3420 MW and a total in electricity generation of 14593 GWh 2011.⁵³

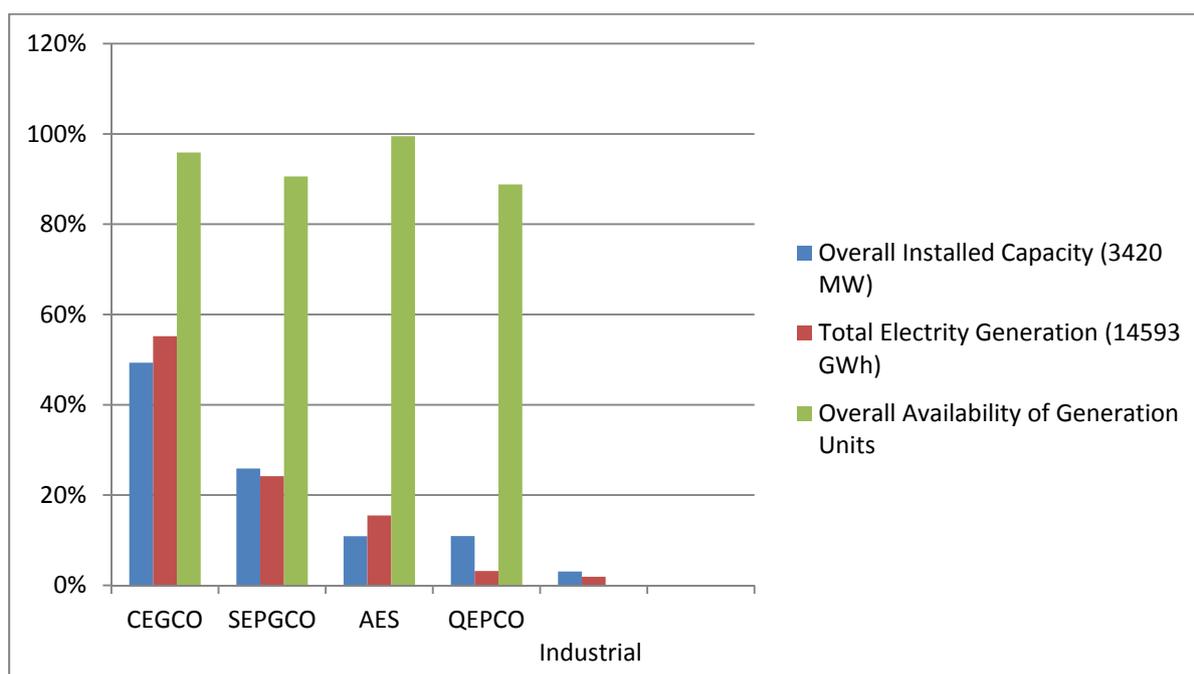


Figure 5: Electricity Generation and Capacity.

Source: ERC.

In the generation segmentation of the market, there are four companies, namely:

- (1) CEGCO, a public shareholding company whose shares are mainly owned by Inara Coalition Company, GOJ and the Social Security Corporation with 51%, 49% and 9% respectively.⁵⁴
- (2) Samra Electric Power Company ("SEPCO"), a shareholding company fully owned by GOJ holding a capital value of JD 50 million.⁵⁵

⁵²Rana Toukan, 'Sector Analysis Report: Overview of the Electricity Sector in Jordan' (2003) Arab Jordan Investment Bank Research Department Working Paper, 6; available at: <http://www.ajib.com/uploads/Electricity-Sector.pdf> accessed 22.01.13.

⁵³ERC (n 5).

⁵⁴MEMR (n 9) 9.

(3) AES-Jordan PSC, a private company owned by both AES Corporation and the Mitsui Group since its establishment in 2009 leading to the establishment of the first ever private generation project in Jordan, the East Amman Power Plant “Al Manakhir”.⁵⁶

(4) Al Qatrana Electric Power Company (QEPCO), a private company owned by the consortium of Korea Electric Power Company and XENEL established in 2009.⁵⁷

These companies operate by virtue of generation licences granted by the ERC.⁵⁸ The General Electricity Law provides that a generation licensee “shall construct, own, operate and maintain a power station for purposes of generation of electric power and to sell electric power and ancillary services.”⁵⁹ The licensee may not operate a transmission system; hold any share in the transmission, system operation or bulk supply licensee; or be part of any agreement which incurs benefits from the transmission, system operation or bulk supply licensee.⁶⁰

The General Electricity Law exempts persons from requiring a licence if they “construct, own or operate an undertaking for generating electric power not exceeding 1 MW in aggregate at the same site... [or] for auto-generation... [or] a power station with an installed capacity not exceeding 5 MW.”⁶¹ The development of a generation facility by a private entity is unprecedented in Jordan. As a result, consents and permits are yet to be established and explained. Nevertheless, it is assumed that the procedure would follow common practice, namely, obtaining a generating licence and compliance with standard construction and operation permit requirements.⁶²

⁵⁵Ibid 10.

⁵⁶MEMR, ‘Annual Report’ (2010), 18; available at: http://memr.gov.jo/LinkClick.aspx?fileticket=gyEYa_z_Xe8%3D&tabid=111 accessed 11.02.13.

⁵⁷Xenel, ‘Al Qatrana IPP’ (Xenel 2012) <http://www.xenel.com/qatrana.asp> accessed 11.02.13.

⁵⁸General Electricity Law, Article 28.

⁵⁹General Electricity Law, Article 32.

⁶⁰General Electricity Law, Article 37 (c) (1) (a); Standard Generation Licence Article 7; available at: <http://www.erc.gov.jo/English/RegulatoryDocuments/Documents/Standard%20Generation%20License.pdf> accessed 22.01.13.

⁶¹General Electricity Law, Articles 28 (B) (1) and 28 (B) (3).

⁶²CMS, ‘Electricity Sector’ (2005), 177; available at: <http://www.cms-cmck.com/Hubbard.FileSystem/files/Publication/b32556e3-d5e6-40dc-93e6->

2.3.3. Transmission:

The transmission system in Jordan is located in the north-south axis of the country which is a radial system and is subject to minimal looping.⁶³ The system consists of 10 generation power stations, 132 KV and 400 KV transmission networks.⁶⁴ This is operated by NEPCO who is a wholly owned company by the GOJ and is responsible for the transmission of electricity and operating the electrical system and the electrical interconnection line.⁶⁵

As explained earlier, the model for the market is a single-buyer business model, were NEPCO is the only entity which operates in the transmission segmentation of the market. This requirement is specified in the General Electricity Law which provides that only one company may hold a transmission licence during the transitory period were the market follows a single-buyer model.⁶⁶ The transmission licence authorises NEPCO to engage in construction, operation, and maintenance of transmission and engage in transmission to other users connected to the transmission system within Jordan and internationally through international interconnectors.⁶⁷

Even though, the General Electricity Law and the Standard Transmission Licence prohibit NEPCO from engaging in generation in any way; they mandate it to be the sole holder of both the bulk supply licence and the system operation licence until the Jordanian market becomes a wholesale competitive electricity market.⁶⁸ Thus, NEPCO, amongst other things is also responsible to purchase electric power from generation licensees and sell it to retail licensees as well as conduct various forms of scheduling, management, co-ordination and

[43fe79cb8e77/Presentation/PublicationAttachment/28344e0c-5a05-4fb6-97ad-47478d8edcb8/cmselectricityguide.pdf](http://www.erc.gov.jo/English/RegulatoryDocuments/Documents/Standard%20Transmission%20License.pdf) accessed 23.01.13.

⁶³Toukan (n 52) 7.

⁶⁴NEPCO, 'Annual Report 2011' (2012), 12; available at: http://www.nepco.com.jo/PDF%20Documents/annual_report_2011_en.pdf accessed 22.01.13.

⁶⁵ERC (n 5) 29.

⁶⁶General Electricity Law, Article 33 (B).

⁶⁷General Electricity Law, Article 33; Standard Transmission Licence, Article 3; available at: <http://www.erc.gov.jo/English/RegulatoryDocuments/Documents/Standard%20Transmission%20License.pdf> accessed 22.01.13.

⁶⁸General Electricity Law, Articles 34 (C) and 35 (E); Standard Transmission Licence, Article 7.

ancillary services related to the transmission sector.⁶⁹ Due to the wide scope of NEPCO, a Grid Code has been published by the ERC to define the rights and obligations of NEPCO as the transmission system operator, single buyer, bulk seller and transmission network service provider.⁷⁰

As a transmission system operator, NEPCO is required to provide users of the transmission system, non-discriminatory access.⁷¹ The concept of non-discriminatory third party access is emphasised by the Grid Code which provides that NEPCO in “providing connections and transmission services...shall not unduly discriminate against or unduly prefer any one or any group of users.”⁷² Generally, access to the network in Jordan is regulated; the General Electricity Law provides that NEPCO shall provide access to the network in accordance with the terms and conditions specified in the Standard Transmission Licence.⁷³ The licence provides that

[i]n each connection point to the transmission system, the Licensee shall enter into a Connection Agreement with the corresponding User, in such standard form as the ERC shall approve and as the Transmission Licensee may amend from time to time, provided that any amendment shall require the approval of the ERC. The Connection Agreement may also include, when applicable, conditions for the use of the transmission system of the Licensee.⁷⁴ The fees and costs for such access are called Connection Charges and are determined by the ERC to ensure fairness and that the appropriate tariff methodology has been used.⁷⁵

As part of the transmission system, NEPCO also operates the interconnection forming part of any regional energy networking. Since 1999, Jordan has been part of the Egypt – Jordan –

⁶⁹General Electricity Law, Articles 34 (B) and 35 (A) (1).

⁷⁰The Grid Code at Paragraph 4; available at:

<http://www.erc.gov.jo/English/RegulatoryDocuments/Documents/Grid%20Code%20-%20Feb%202010.pdf>

accessed 22.01.13.

⁷¹General Electricity Law, Article 33 (A) (2).

⁷²Grid Code, Article 23.

⁷³General Electricity Law, Article 33 (A) (2).

⁷⁴Standard Transmission Licence, Article 29 (2).

⁷⁵Ibid, Articles 7 (B) and 29 (6).

Syria Electrical Interconnection from which Jordan has imported a capacity of 1739 MW in 2011 through 132 KV and 400 KV high voltage lines.⁷⁶ Whilst on the other hand, the total electricity exported from Jordan to neighbouring countries such as Egypt, Jericho and Iraq is approximately 86 GWH.⁷⁷ It is important to note that NEPCO or any other person needs the COM's approval for any trade through the interconnection lines and cannot trade on an international level without prior consent.⁷⁸

The importance of such a network is clear when noting that 80% of Jordanian Electricity is generated from Egyptian natural gas imported through the Arab Gas Pipeline.⁷⁹ In 2010, import costs were estimated at \$3.6 billion accounting for 13.5% of GDP.⁸⁰ Regional co-operation on this is under consideration and development. The EIJLLST Electrical Interconnection Project, illustrated in figure 6, is a prime example of such development, where seven countries in the MENA region are working towards an electricity grid connection crossing seven countries.⁸¹ This project will increase the integration of electricity grids and so strengthening energy security for Jordan and other participating countries.⁸² The project may also ease the move towards the energy grid anticipated to connect MENA and the EU.⁸³ Plans foresee an interconnecting grid between MENA and the EU before 2020 constituting a unified low carbon energy vision.⁸⁴

⁷⁶ERC (n 5) 18.

⁷⁷ERC (n 5) 19.

⁷⁸General Electricity Law, Article 35 (D).

⁷⁹Peter Meisen and Jenna Tatum, 'The Water-Energy Nexus in the Jordan River Basin: The Potential for Building Peace through Sustainability' (2011) at 24; available at:

<http://www.geni.org/globalenergy/research/water-energy-nexus-in-the-jordan-river-basin/the-jordan-river-basin-final-report.pdf> accessed 23.01.13.

⁸⁰MEES, 'Minister Puts Jordan's Energy Import Bill at \$2.6bn' (MEES, 25 April 2011)

<http://www.mees.com/en/articles/1136-minister-puts-jordan-s-energy-import-bil-at-3-dolars-dot-6bn-in-2010> accessed 23.01.13.

⁸¹The Project involves: Egypt, Iraq, Jordan, Lebanon, Libya, Syria and Turkey; World Bank, '2008 Economic Developments and Prospects: Regional Integration for Global Competitiveness' (2008) at 66; available at

<http://siteresources.worldbank.org/INTMENA/Resources/2008MENA-EDP-full.pdf> accessed on 23.01.13.

⁸²Michael Mason and Amit Mor, *Renewable Energy in the Middle East* (Springer 2009) 185.

⁸³Ibid.

⁸⁴Philippe Adam, Jean Kowal and Herve Pouliquen, 'Medgrid – a Co-development Project for the Exchanges of electricity in the Mediterranean Basin' (2011) Medgrid Working Paper, 5; available at

http://pscc.ee.ethz.ch/uploads/tx_ethpublications/sp2_-_Medgrid.pdf accessed 29.01.13.

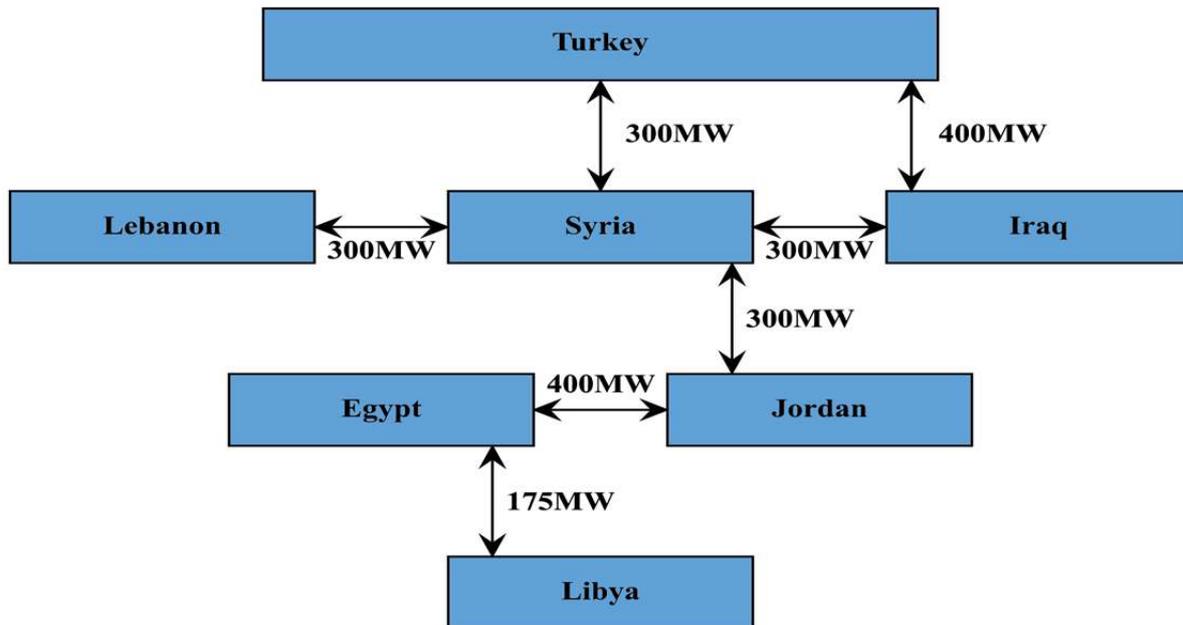


Figure 6: The EIJLLST Interconnection.

Source: ERC.

2.3.4. Distribution:

The distribution sector consists of three companies, the public shareholding company JEPCO and two other privatised companies EDCO and IDECO.⁸⁵ The three companies have been supplying consumers with electricity through medium and low voltage lines to consumers under their allocated distribution and retail supply areas.⁸⁶

- (1) JEPCO distributes in the Balqa, Madaba, Metropolis and Zarqa Governorates and the Central Jordan Valley.
- (2) IDECO distributes in Ajloun, Irbid, Jerash and Mafraq Governorates as well as the Northern and Eastern Jordan.
- (3) EDCO distributes in the Southern Eastern parts of Jordan and Jordan Valley areas.⁸⁷

Due to the current structure and players of the market, these companies in turn, have de facto exclusive franchises to supply electricity to various different consumers within a specified

⁸⁵International Business Publication, Arab Fund for Economic and Social Development Handbook (USA Int'l Business Publications 2007) 102.

⁸⁶Standard Distribution and Retail Supply Licence, Annex 1; available at:

<http://www.erc.gov.jo/English/RegulatoryDocuments/Documents/Standard%20Distribution%20and%20Retail%20Supply%20Licence.pdf> accessed 24.01.13.

⁸⁷MEMR (n 9) 11.

area.⁸⁸ Until 2012, JEPKO was operating under a concession awarded in 1962 for 50 years which was replaced by a distribution licence upon its expiry.⁸⁹ IDECO and EDCO both operated under distribution licences which were granted on the 30th June of 2008.⁹⁰

Under the General Electricity Law, distribution companies hold two different roles and distinct licences, this is because a distribution licensee “shall construct, operate and maintain a distribution system within a specified area” and they “shall be the sole retail supply licensee for that area” under a retail supply licence.⁹¹ Nevertheless, the standard licence published by the ERC deals with distribution companies for both distribution and retail supply through a single licence.⁹² Due to the single-buyer model and the law in force, retail and supply licensees can only purchase electricity from NEPCO in the capacity of a bulk supplier.⁹³ The term of the standard licence is 25 years and similarly with generation and transmission licensees, distribution and retail supply licensees are prohibited from engaging in any activity relating to other segments of the market thus enforcing a purposeful separation.⁹⁴

3. Renewable Energy in Jordan

With a view to decrease dependency on imported fuels and as part of the development and opening of the electricity sector in Jordan, the General Electricity Law mandates the MEMR to promote the use of renewable energy for generation.⁹⁵ In addition, the ERC is mandated to encourage investment in the sector and encourage the development and the improvement of operational efficiency.⁹⁶ Jordan’s energy strategy also emphasises the need to diminish dependence on imported energy sources which account approximately for 96% of the Jordanian energy demand and that renewable generation must meet 10% of the energy

⁸⁸Joskow (n 3) 11.

⁸⁹EBRD, 'Jordan's Request for Country of Operations Status' (2011) Technical Assessment of 17 November, 46; available at: http://www.ebrd.com/downloads/country/technical_assessments/2012-02-13_Jordan_TA.pdf accessed 29.01.13.

⁹⁰ERC (n 5) 29.

⁹¹General Electricity Law, Articles 35 (f) and 36.

⁹²Standard Distribution and Retail Supply Licence.

⁹³General Electricity Law, Article 35 (b).

⁹⁴Standard Distribution and Retail License, Paragraph 3 and Article 7.

⁹⁵General Electricity Law, Article 4 (f).

⁹⁶General Electricity Law, Article 7 (2).

demand by 2020.⁹⁷ Such objectives are realistic when considering that Jordan has a great potential for wind power installations and solar energy potential.⁹⁸

Accordingly, the GOJ has been pushing for a legal framework which can support these goals. Currently, renewable energy is regulated under the Renewable Energy & Energy Efficiency Law No.13/2012 ("REEL") which has replaced or in a way amended and improved the Renewable Energy and Energy Efficiency Law No. 3/2010 ("1st REEL") that promoted Jordan's required development of renewable generation through either direct proposals or competitive tenders.⁹⁹

Under Article 6 of REEL, investors enjoy the possibility of utilising a 'direct proposal option' and apply to the MEMR to develop and exploit renewable energy in any available sites.¹⁰⁰ Such a direct proposal must contain and illustrate: (1) the development plan (2) details of the applicant's technical know-how and financial capacity (3) any data or documents which may support the application and (4) the proposed fixed tariff which falls within an acceptable range in accordance with the reference pricelist.¹⁰¹ The MEMR, with NEPCO's assistance, may issue tenders or attract proposals on a competitive basis.¹⁰² This development is seen as a "major step forward in terms of increasing the security of energy supply, allowing the Government to work closer with developers with a view to increasing energy efficiency in Jordan."¹⁰³

In fact this has already been tested under the 1st REEL; the GOJ has adopted the request for Expression of Interest ("EOI") approach which essentially organises or sets up a procedure

⁹⁷MEMR, 'Summary of the Updated Master Strategy of Energy Sector in Jordan for the Period (2007-2020) (December 2007) at 20; available at: <http://www.memr.gov.jo/Portals/0/energystrategy.pdf> accessed 29.01.13.

⁹⁸Ibid.

⁹⁹MEMR (n 6) 3.

¹⁰⁰REEL, Article 6 (A).

¹⁰¹REEL, Article 6 (B).

¹⁰²REEL, Article 5.

¹⁰³Michelle Davies, 'Jordan: Adoption of the Renewable Energy and Energy Efficiency Law and the Resulting Direct Proposals' (Eversheds, 11 May 2012) available at: <http://cleanenergyblog.eversheds.com/all-briefings/jordan-adoption-of-the-renewable-energy-and-energy-efficiency-law-and-the-resulting-direct-proposals/> accessed 28.01.13.

for the direct proposal option.¹⁰⁴ In such applications, The MEMR looks at the applicants' "credentials, general project plans and parameters in the proposed location, and their compatibility with the technical integration plans and the grid capacity..."¹⁰⁵ Applicants selected in the EOI phase will be shortlisted and will receive a Memorandum of Understanding from the GOJ which entitles them to progress with "measurement campaigns, feasibility studies and other preparatory and due diligence work such as negotiating access to land and financing options of the proposed projects."¹⁰⁶ So far, 34 Jordanian and international firms were shortlisted on 23 April 2012 in the EOI process initiated by GOJ, firms which have expressed interests in establishing photovoltaic, solar power and wind energy projects.¹⁰⁷

These firms are subject to a process which will end in 2014, the shortlisted applicants are required to submit a direct proposal in harmony with the provisions of the REEL and any applicable regulation.¹⁰⁸ Subsequently and mainly on the basis of technical and financial capacity, the GOJ will select the best applicants resulting in a guaranteed Power Purchasing Agreement within two months of the 'Notification of Acceptance' to develop the targeted 1800 MW (10% of electricity generation in 2020) via renewable energy projects in harmony with Jordan's Energy Strategy.¹⁰⁹ Such projects will be also subject to the normal licensing procedure were the developers will need to operate under a generation licence and sell the generated electricity to NEPCO.¹¹⁰ Despite, the competitive tendering process, other companies who did not participate are entitled to bypass the competitive bidding process and

¹⁰⁴Ibid.

¹⁰⁵MEMR, 'Investment Opportunities in Renewable Energy Projects "Direct Proposals Submissions": Request for Expression of Interest' (May 2011) at 4; available at: <http://www.memr.gov.jo/LinkClick.aspx?fileticket=i2-fmKsroc%3d&tabid=93> accessed 28.01.13.

¹⁰⁶Ibid.

¹⁰⁷Taylor Luck, 'Int'l firms "lining up" for Renewable Energy Opportunities in Jordan' (Jordan Times, 28 Jun 2012) <http://jordantimes.com/intl-firms-lining-up-for-renewable-energy-opportunities-in-jordan> accessed 29.01.13; Meqdad Qadous, 'Jordan Renewable Energy Program' (2012) available at: <http://www.naruc.org/International/Documents/QADOUS-%20Jordan%20RE%20Program%20Sept%202012.pdf> accessed 29.01.13.

¹⁰⁸MEMR (n 105).

¹⁰⁹Jenny Muirhead, 'CSP Consolidates Position in Jordan's Market' (CSP Today, 14 Dec 2012). social.csptoday.com/emerging-markets/csp-consolidates-position-jordan's-market accessed 29.01.13.

¹¹⁰REEL, Article 7.

negotiate directly with the MEMR; in such unsolicited submission, investors' will apply to develop and exploit renewable energy sources and for generating electrical power and connecting to the grid in relation to any site which is not covered by any competitive tendering process initiated by the GOJ.¹¹¹

The process became more credible and coherent upon the ERC's publication of the Reference Pricelist Record in accordance with Article 2 of the REEL which outlines the Feed-in-Tariffs that determine the ceiling tariff for the sale of electrical energy generated by renewable energy facilities.¹¹² The tariffs which are set below may be added to an additional 15% on the tariff if and when the winning bidder from direct proposals installs a dully Jordanian origin Renewable Energy Facility.¹¹³

Technology Project Type	Reference price (Fils/kWh)
Wind Power	85
Solar Power	135
Solar Power (Photovoltaic)	120
Bio-mass (waste)	90
Bio-gas	60

Figure 6 Feed in Tariff.

Source: Reference Pricelist Record.

Another incentive initially established by the 1st REEL and further developed by the REEL is the Renewable Energy and Efficiency Fund which is aimed at providing the necessary funding for the exploration of Renewable Energy Sources and the “rationalisation of energy consumption including small Renewable Energy Facilities.”¹¹⁴ Investors, consumers, citizens, entrepreneurs will be able to apply to such financial support from the fund which is financed by the GOJ and international donor agencies such as the world bank amongst others.¹¹⁵ Alaa Batayneh, Minister of Energy and Mineral Resources, stated that “the establishment of this

¹¹¹REEL, Articles 6 (A) and 6 (B).

¹¹²ERC, The Reference Pricelist Record, Article 2; available at:

http://www.erc.gov.jo/English/RegulatoryDocuments/Documents/Reference%20prices_Article_2.pdf accessed 29.01.13.

¹¹³The Reference Pricelist Record, Articles 4 (A) and 4 (B).

¹¹⁴REEL, Article 12.

¹¹⁵Norton Rose, ‘Renewable Energy in Jordan’ (2012, Norton Rose) available at:

<http://www.nortonrose.com/knowledge/publications/62385/renewable-energy-in-jordan> accessed 29.01.13.

fund is an important step in our strategy to finally take advantage of Jordan’s solar and wind energy resources.”¹¹⁶

4. The Investment Climate:

All developments and key reforms occurring in the energy sector that are aimed at attracting foreign investment form part of a national move towards an “outward-oriented, market based, and globally competitive economy.”¹¹⁷ This national move allowed advancements which have occurred in other sectors and different frameworks to pose a direct and positive impact on the investment climate in the Jordanian energy sector.

Since 2005, over 14 regulatory reforms have been implemented of which a third has made doing business in Jordan easier, faster and cheaper.¹¹⁸ These include (1) a reduction of the paid-in minimum capital requirement down to 1 JD from 1000 JD (2) the lowered overall costs of starting an investment from 102% per capita to 14% since 2004 and (3) the establishment of a one-stop-shop where representatives of various ministries and governmental institutions are connected and thus cutting procedures in half.¹¹⁹

By way of the Investment Promotion Law No.16/1995 and its amendments for the Year 2000 (“The Investment Promotion Law”), provisions have been implemented to encourage investment both from domestic and foreign investors.¹²⁰ The Investment Promotion Law has created a freedom from custom duties. To exemplify, investors are not liable for fees and taxes for fixed assets (i.e. machinery, equipment and supplies) which are intended to be used

¹¹⁶Taylor Luck, ‘Officials Hope New Fund Will Revitalise Renewable Energy’ (Jordan Times, 27 Jan 2013) <http://jordantimes.com/officials-hope-new-fund-will-revitalise-renewable-energy> accessed 29.01.13.

¹¹⁷US Department of State, ‘Jordan: 2012 Investment Climate Statement’ (2013) 1; available at: http://photos.state.gov/libraries/jordan/231771/PDFs/jordan_ics_e.pdf accessed on 30.04.13.

¹¹⁸The World Bank, ‘Doing Business in the Arab World’ (2012) 7; available at: <http://www.doingbusiness.org/~media/FPDKM/Doing%20Business/Documents/Special-Reports/DB12-ArabWorld.pdf> accessed on 04.04.13.

¹¹⁹Ibid, 7 and 27.

¹²⁰Jordan Investment Board, ‘Investment Promotion Law’ (Jordan Investment Board 2013) available at: <http://www.jordaninvestment.com/AboutJIB/InvestmentPromotionLaw/tabid/207/language/en-US/Default.aspx> accessed 07.04.13.

for the relevant project.¹²¹ The same applies to imported spare projects which do not exceed the value of 15% of the fixed assets as well as fixed assets which are required for the “expansion, development or modernisation of the project” if the expansion increases the production capacity by at least 25%.¹²² An investor may re-export, relinquish or sell the exempted fixed assets to another investor operating in a business not covered by the Investment Promotion Law if and when they receive consent from the Incentives Committee.¹²³ Moreover, other regulations supplement the Investment Promotion Law and provide several investment guarantees. Regulation No.54/2000 Regulating Non-Jordanian Investments Regulation Issued Pursuant to Article (24) of the Investment Promotion Law No.16/1995 treats investors whether Jordanian or not on an equal footing as it allows the non-Jordanian to "own any project wholly partially or may participate in it in any percentage" with the exception of certain commercial activities and sectors (mainly related to transport) where limitations will be placed on the possible extent of ownership.¹²⁴

Moreover, over the years and since the privatisation reforms commenced in the late 1990s, Jordan has signed numerous trade and investment agreements providing access to many regional and international markets through a series of free trade agreements rendering Jordan’s virtual hub accessible to over 1 billion consumers.¹²⁵ Again with a view to liberalise the Jordanian market and increase exports, Jordan has negotiated and implemented bilateral and multilateral agreements including: membership to the World Trade Organisation since the year 2000; the Greater Arab Free Trade Agreement 1998; the Arab Mediterranean Free Trade 2004; the Jordan-EU Association Agreement 1997; the Jordan-US Free Trade Agreement 2000; the Qualifying Industrial Zone Agreement 1996; The Jordan-Singapore FTA 2004; and some 38 bilateral Investment Agreements with 38 countries.¹²⁶ A number of

¹²¹Investment and Promotion Law No.16/1995 and its amendments for the Year 2000 (“Investment Promotion Law”), Article 6 (a).

¹²²Ibid, Article 6(b) and (c).

¹²³Oxford Business Group, *the Report: Jordan 2012* (Oxford Business Group 2012) 250.

¹²⁴Regulation No.54/2000 Regulating Non-Jordanian Investments Regulation Issued Pursuant to Article 24 of the Investment Promotion Law No.16/1995 (“The Non-Jordanian Investment Regulation”) Articles 2, 3 and 4.

¹²⁵Bashar Al-Zubi, ‘Jordan Renewable Energy: Projects and Investment Opportunities’ (2010) 3; available at: <http://www.oecd.org/mena/investment/46874368.pdf> accessed on 30.04.13.

¹²⁶Jordan Investment Board, ‘International Agreements and Memberships’ (Jordan Investment Board 2013) available at:

these agreements whether bilateral or multilateral offer structured means of dispute resolution such as arbitration or conciliation. Examples include the Treaty on Settlement of Investment Disputes in the Arab Countries, the Treaty between Jordan and the Government of the United States of America on Mutual Encouragement and Protection Investment, the Washington Convention on the Settlement of Investment Disputes, and the a range of Promotion and Reciprocal Protection of Investment Agreements between Jordan and African, Asian, European and American countries.¹²⁷

In addition to the numerous revisions, amendments and substitutions of Jordanian laws in recent years, participation in these agreements have served as a major contribution to the modernisation of the Jordanian legal system.¹²⁸ Domestic laws allow foreign investors to seek arbitration and as a member state, decisions of the International Centre for the Settlement of Disputes are recognised in Jordan.¹²⁹ The main legal instrument regulating arbitration in Jordan is the Arbitration Law No.31/2001 and is based on the United Nations Commission on International Trade Law Model Law on International Commercial Arbitration 1985.¹³⁰ This law and the arbitration regime in the context of protecting both Jordanian and foreign investors have been recognised as a successful development in Jordan where proper remedies and enforcement are available.¹³¹ Al-Jazy explains that "[t]his legal environment will naturally provide a breeding ground for more foreign investment in Jordan since it suggests an appropriate level of security and neutrality."¹³²

<http://www.jordaninvestment.com/BusinessandInvestment/InternationalAgreementsandMemberships/tabid/143/language/en-US/Default.aspx> accessed 30.04.13.

¹²⁷PKF, 'Doing Business in Jordan' (2012) 37; available at:

<http://www.pkf.com.tw/Doing%20Business%20in/doing%20business%20in%20jordan.pdf> accessed 06.04.13

¹²⁸Jordan Investment Board, 'Investment Protection' (2013) available at:

<http://www.jordaninvestment.com/BusinessandInvestment/InvestorProtectionDisputeSettlement/tabid/137/language/en-US/Default.aspx> accessed 06.04.13.

¹²⁹US Department of State, (n 117) 4.

¹³⁰Al-Ghazzawi Professional Association, 'Guide to Dispute Resolution in the Middle East 2010/2011' (2010) 42; available at: http://ghazzawilawfirm.com/files/Guide_to_dispute_resolution_in_the_Middle_East.pdf accessed 07.04.13.

¹³¹Omar Aljazy, 'Jordanian Centre for Dispute Resolution' (2013) 3; available at:

http://www.jcdr.com/pdf/impact_adr.pdf accessed on 04.03.13; EBRD n (28) 2 and 57.

¹³²Aljazi, Ibid, 5.

5. Final Remarks:

Jordan has embarked on a journey to liberalise its electricity market. A market paradigm which is able to meet the interests of all stakeholders, namely: the government who aims to modernise and increase the efficiency of its market by attracting investors in order to meet national and economic interests; the investor who is seeking a reasonable return on their investment; and the consumer who is seeking stable, continuous and affordable supply at affordable prices.¹³³ Even though, the Jordanian market is currently using a single-buyer business model, it is only an interim measure or a model which has already passed through four major developments including: the implementation of the General Electricity law which established the independent ERC and allowed for private sector involvement and provided a legal framework for restructuring; unbundling the vertically integrated company, NEPCO; the ERC's continuous involvement and monitoring of the market to promote competition in the sector; and the gradual tariff reform which is eradicating subsidies, cross subsidies and ensuring reasonable rate of return to private entities.

The level of liberalisation is yet to be defined due to pricing regulation and a highly concentrated market in the hands of four generating companies operating in different areas. Nevertheless, the changes in the sector demonstrate Jordan's commitment to achieve a wholesale competitive market; the ongoing and steady opening of the market should be seen as a sign of devotion and credibility on behalf of Jordan. Moreover, developments in the renewable energy sector and the establishment of the new legal regime has created a prosperous playing field for renewable energy developers and a source of energy which will diminish the costly dependency on imported energy sources. In addition, events which occurred in the last two years such as deliberate shortage of Egyptian gas supply on nine occasions, multiple cabinet and ministerial appointment changes and several demonstrations during the Arab spring have affected the country's economy greatly; yet, Jordan has remained politically stable and ranked by the World Bank as among "the best economic reformers" when comparing to other 'lower middle income-countries'.¹³⁴

¹³³See Anatole Boute, 'Challenging the Re-regulation of Liberalised Electricity Prices Under Investment Arbitration' (2011) 32 (497) ELJ 497.

¹³⁴Ahmad Al-Omari, 'The Institutional Framework of Financial Reporting in Jordan' (2010) 22 EJEFAS 32, 41.

The reform and the legislative signals may be slow but they are stable and coherent which will allow utilities to participate in long term projects, ultimately resulting in the benefit of both the individual and the collective interest of all the stakeholders.

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