

Direct Proposals and Competitive Bids in Renewable Energy Projects: **Policies and Implementation**



Contact details

We value your input, please contact us by emailing policy@edama.jo

All of EDAMA publications can be downloaded from: <u>http://edama.jo/e-library/publications/</u>

Authors

Reem Almasri - Policy and Research Specialist Abdallah Alshamali - Researcher

EDAMA Association for Energy, Water and Environment - "Direct Proposals and Competitive Bids in Renewable Energy Projects: Policies and Implementation", 2019

Copyright

© EDAMA Association for Energy, Water and Environment 2019. To the extent permitted by law, all rights are reserved, and no part of this publication covered by copyright may be reproduced or copied in any form or by any means except with the written permission of EDAMA Association for Energy, Water and Environment

Important disclaimer

EDAMA Association for Energy, Water and Environment advise that the information contained in this publication comprises general statements. The reader is advised and needs to be aware that such information may be incomplete or unable to be used in any specific situation. No reliance or actions must therefore be made on that information without seeking prior expert professional, scientific and technical advice. To the extent permitted by law, EDAMA Association exclude all liability to any person for any consequences, including but not limited to all losses, damages, costs, expenses and any other compensation, arising directly or indirectly from using this publication (in part or in whole) and any information or material contained in it.

Renewable energy policies and strategies

> A look into the global trend

The global trend towards renewable energy has been primarily driven by "goals" set by governments, by means of periodically updated energy sector strategies that defines how the renewable energy dependence will grow in the total energy mix in the upcoming years. The number of countries that have announced these goals at the national level has reached to 179 countries compared to the year 2004, when the number was approximately 40 countries¹. These goals also encouraged all those interested to start investing in this sector, and work has already started to translate the goals into practical steps in the form of tasks, legislative frameworks, financing mechanisms and programs all aimed at reaching the desired outcomes.

Renewable energy sector regulators have relied on many policies to ensure the continuous growth of the sector accompanied by a reasonable level of support, that decreases with the maturity of the sector and the accumulation of experience. Support mechanisms based on tariffs or on quantity were widely used for its effect on attracting investment and increasing the reliance on renewable energy.

The existing support mechanisms vary between mechanisms in which the price of purchasing electricity from renewable energy sources is determined by the regulatory authority such as the feed-in tariff, and others that are assigned according to the project developers, such as competitive bids of various kinds. We summarize the most important of these mechanisms in the following form:



Competitive bids – Auctions, or as it is called in Jordan as direct proposals, have gained momentum in recent years. The number of countries that adopted regulatory framework for periodic bidding increased from 6 countries in 2005 to nearly 67 countries in 2016², due to its flexible nature, which fits in reliably in various energy markets, starting with the single buyer model market, whilst not ending with the open markets model. In addition to that, its contribution in regulating the entry of renewable energy into the energy mix in a transparent, organized and studied manner, and its effectiveness on reducing incentives by sector regulators. And its flexibility that helps to integrate other_development goals and take into account both the particularity of each country and the level of maturity of its renewable energy market.

¹ Renewables 2018 Global Status Report, Renewable Energy Policy Network for the 21st Century, 2018.

² Renewable Energy Auctions: A Guide to Design, IRENA, 2015.



What are the direct proposals and what are the competitive bids?

The idea of direct proposals is to provide the opportunity for developers of renewable energy projects to submit their project proposals and discuss them with relevant authorities, then provide technical and financial offers and implement them if approved. In the case of competitive bids, the relevant authority invites those interested in submitting their bids to supply the electrical network with renewable energy, and this includes inviting them to submit financial and technical offers to build the project, which are evaluated according to a criteria set by the relevant authority. The following table shows the most important strength points that drive countries towards adopting competitive bidding programs in addition to the challenges facing this type of program:

Strengths	Weaknesses	
Ability to obtain competitive prices	Could cause intermittent growth in the sector, in case	
Insures safe investments through long term PPAs	implementation time frame was not planned	
Effective cost management due to the competitiveness on prices	Hard to win auctions due to large capital costs that can	
Ability to control project size according to what has been planned and the capacity of the electrical grid	only be satisfied by big investors*	
Ability to predict electrical energy produced from renewable energy sources		
Ability to include other development goals like employment and local industry support.	Risk of underestimating costs	

*the direct proposals system in Jordan, managed to avoid this point by allowing investors to submit direct offers

with proposals for projects outside the framework of the competitive bidding of the concerned ministry

Among the most important types of competitive bidding that countries adopted as programs to promote the penetration of renewable energy sources into the sector: auctions, sealed bid auction, and a hybrid of both types that are used at different stages³. In auction, the authority responsible for the auction determines the purchase price of electricity from renewable energy sources, and based on this price, bids from project developers are gathered and approved, then they would reduce the price and solicit bids for the second time until it reaches a financial offer through which the authority can guarantee the required capacities planned at this stage, while a sealed bid auction depends on providing undisclosed price by the project developers to be studied and the assignment of winning bids goes to the lowest price bidders if they were technically qualified at an earlier stage. The most important stages of competitive bidding are shown in the following figure:



Eligible developers submits their financial and technical offers

These offers are evaluated based on price and other criteria including share of local content or technical specifications or environmental commitments

A power purchasing agreement is signed with the winning bidder for period of 15-25 years. *The duration of PPA in Jordan is 20 years.

³ Renewable Energy Auctions in Developing Countries, IRENA, 2013.



An overview of Jordan

Jordan has adopted the direct proposals program - competitive bidding at an early stage, due to its great role in accelerating the penetration of renewable energy sources and reaching competitive prices in record times. Concerned authorities have organized the sector by establishing the necessary legislative structure to start this program, one of which is the Temporary of Renewable Energy and Energy Conservation law No. 3 of 2010 ⁴, then a consultative study on the indicative prices for renewable energy was conducted in 2011, the results of which were used to issue instructions regulating the renewable energy sector in accordance with the Renewable Energy and Energy Conservation Law.

In 2012, the Permanent Renewable Energy and Energy Conservation Law was issued, according to which the rules regulating work in this sector were also issued, including ⁵:

- Instructions for the sale of electrical energy generated from renewable energy sources

- Instructions for costs of connecting renewable energy sources to the distribution system in the cases of competitive bidding and direct offers

- The reference pricelist for the calculation of electrical energy purchase prices from renewable energy sources

Guidelines annexed to the instructions for the sale of energy generated from renewable energy systems
Procedures to attain licenses for connection on the distribution and transmission grid, standard generation
license forms, and connection agreements on the grid.

Through the instructions for the sale of electrical energy generated from renewable sources, the purchase price of energy from these sources was determined to be up to 12 piasters per kilowatt hour for solar energy and 8.5 piasters per kilowatt hour for wind energy. While an increase of 15% over this tariff was granted, if systems installed were of Jordanian origin.

In 2014 the Reference Pricelist was issued to calculate the electrical tariff from renewable energy sources and it was decided to use the reference to determine the upper limit of the tariff, and in 2015 the Direct Proposals by-law for electrical energy projects and grid connection was issued, which clarified the responsible authority for these offers, and the mechanism for their submission and evaluation.

In 2016, a new mechanism was adopted to calculate the average purchase price of energy from renewable sources, which replaces the Reference Pricelist ⁶. This mechanism states how to determine the ceiling of purchase price of direct proposals based on the average price of offers that were accepted during the most recent round of bidding, calculated from the first 12 offers in ascending order, and in order to take into account the continuous improvement in renewable energy technologies, the calculated ceiling price were to be reduced by 10% starting in 2017.

⁴ Annual Report, EMRC, 2010.

⁵ Annual Report, EMRC, 2012.

⁶ Annual Report, EMRC, 2016.



> Evolution of direct proposal in Jordan in light of the global experience

Global investments in the renewable energy sector in 2017 were twice the investments in fossil and nuclear energy combined , reaching a total of 68% of all new investments ⁷, as global energy markets had forgone the support of renewable energy production in order to enable it to compete with traditional energy sources, and soon it was able to bid on competitive bases.

- Lower costs

The average price of electricity produced from photovoltaic power plants "Levelized cost" between 2010 and 2017 has decreased by 73% ⁸, mainly due to the tendency of many countries towards implementing large-scale projects through competitive bidding instead of feed-in tariffs and due to the reduction in price of photovoltaic panels by 81% between the years 2009 and 2017 ⁹, which is the result of the maturity in industry, continuous scientific research and economies of scale that led to the production of these panels at an unprecedented low and competitive prices. In addition to these reasons, there are several expert project developers who are constantly seeking to open new renewable energy markets. The following figure shows the decrease in installation prices for photovoltaic and wind energy between 2010 and 2017, where the average reduction in price of installing wind and photovoltaic energy has reached 20% and 68% respectively.



Average Cost of Renewable Energy Installations Globally

- Levelized Cost of Energy

The Levelized Cost of Electricity (LCOE) refers to the average price of a unit of electricity produced over the lifetime of renewable energy powerplant, it is calculated by dividing the costs incurred throughout the lifetime by the total electrical energy production; the change in this cost reflects various developments in technology and change in the capital prices for constructing and installing these plants over the years. It is worth noting that the

⁷ Renewables 2018 Global Status Report, Renewable Energy Policy Network for the 21st Century, 2018

⁸ Renewable Power Generation costs in 2017, IRENA, 2017



LCOE of photovoltaic energy decreased globally by three quarters within seven years since the year 2010 ¹⁰, and the reduction trend was present in all countries of the world but in varying proportions as the next figure shows; the variance is due to the difference in total energy produced that depends on the geographical area, it is known as the capacity factor , in addition to the difference in cost of installation, which includes cost of technology.



Levelized Cost of Energy (LCOE) of PV

-Competitive Bid Prices

Competitive bidding prices are not equal to the costs of energy production or the LCOE, but they are direct indicators, as competitive bid prices decreased along with LCOE. The decrease in the global average LCOE for photovoltaics between 2013-2018 and wind energy for the years 2010-2017 reached around 63% and 24% respectively. The figure shows the variation in prices over recent years in many countries of the world.



10 Renewable Power Generation costs in 2017, IRENA, 2017



The decrease in competitive bidding prices in wind energy is due to several reasons; the most important of which is the development of technology and the decrease in financing costs due to the low level of investment risk involved, in addition to intense competition and the transition of many traditional energy providers into investing in wind energy technology. The following graph decrease of LCOE together with competitive bidding prices for wind energy globally.



Source: International Renewable Energy Agency (IRENA)

> The Jordanian Experience

After the Ministry of Energy and Mineral Resources announced that it will be receiving direct proposals for renewable energy projects, it announced in May 2011 the wish to receive expressions of interest in its first competitive renewable energy bid, they had defined the trend to be more towards competitive bidding through direct proposals, because of their desire to choose the best possible projects in an efficient and transparent manner.

And the fact that round one projects are the first Jordanian experience in competitive bidding, consultative studies were carried out regarding the indicative prices for renewable energy, which resulted in determining the purchase price in the same method as with feed-in tariff and the purchase price was to be fixed at 12 piasters per kilowatt hour for all those who qualify excluding Shams Ma'an project that had a tariff of 10.5 piasters per kilowatt hour as this was issued by the Cabinet Resolution No. 3274 in February 2014. The average global price for competitive bids in the same year was 11.56 piasters per kilowatt hour according to the International Energy Agency.

Based on experience gained during the first round by the Ministry of Energy and Mineral Resources and the developers of renewable energy projects, second round projects were announced to be sealed competitive bids.



Technical offers were evaluated first, then the lowest price was chosen from among those qualified, as is the case in the third-round projects. The following timeline reflects the competitive bidding process of its three phases.



Decrease in competitive bidding prices between the first and third round reached approximately 82%, since the price of the third round reflects both high confidence in the Jordanian renewable energy sector and the maturity of experiences in it. This accelerated development has contributed to an increase in production from renewable sources by 7.4% in the energy mix, as it had grown from 0.6% in 2015 to nearly 8% in 2018 ¹¹. The figure below shows the proportion of electricity produced from renewable sources and the percentage cost of purchasing energy from renewable sources.

¹¹ Annual Report, MEMR, 2015-2017





Renewable Energy share

Source: National Electrical Power Company



Appendix 1: Conventional Energy: Oil Prices and Costs of Production

The fluctuating and high price of fossil fuels is one of the most important drivers towards the adoption of renewable energy along with the advantage of renewable energy being a local energy source, especially in countries that import fossil fuels. The figure shows the average price of Brent crude during the same period that witnessed fast progress of renewable energy adoption. This period saw prices reaching 115 dollars per barrel.

It should be noted that the LCOE from renewable plants has almost matched and does in fact compete with that of the energy produced from fossil fuel power plants.

In the case of Jordan, the cost of energy production from renewable sources was less than traditional, in 2013 the cost was 12.47 piasters per kilowatt of conventional energy¹² compared to 12 piasters per kilowatt for the first round of photovoltaic energy projects, while the cost was 13.7 piasters per kilowatt of conventional energy compared to 4.8 piasters per kilowatt of round two PV projects. The following figure shows the energy costs for different conventional power plants compared to PV and wind energy.





¹² Annual Report, NEPCO, 2013



Appendix 2: Capacity Factor

The capacity factor expresses the fundamental difference between different energy systems, it indicates the difference between how much a system can produce energy based on the installed capacity compared to what it has actually produced, so that in the case of comparing a solar energy system with a conventional system with the same installed capacity, the first thing that should be focused on is the difference in the capacity factor as it ranges between 15% to 30% in the case of the solar systems and from 26% to 52% in the case of wind energy of all kinds, and 40% to 95% in conventional powerplants ¹³.

The figure below shows the evolution of the average capacity factor from 2010 to 2017 for both wind and photovoltaic energy, which is due to the continuous research and development, in addition to the accumulation of experience in operating and maintaining these systems.



¹³ Utility-Scale Energy Technology Capacity Factors, NREL, 2015



Appendix 3: Sources of Competitive Bid Prices

Source				
India and USA	IRENA - Renewable Energy Auctions: Analysing 2016			
Germany	SolarPower Europe	e, Global Market Outlook For Solar Power 2018 - 2022		
Egypt	<u>https://www.pv-ma egypts-200-mw-te</u>	agazine.com/2018/08/08/update-acwa-offered-lowest-bid-in- ender/		
	Round 1	Cabinet resolution No. 4723		
Jordan	Round 2	Average price of the 4 wining bids (– Ministry of Energy and Mineral Resources		
	Round 3	Average price of the lowest 3 bids - Round		
	4.16 Piasters/ kWh	https://www.power-technology.com/news/newsacwa-power-tsk- to-build-200mw-solar-pv-project-in-dubai-4491089/		
UAE	2.12 Piasters/ kWh	https://www.pv-magazine.com/2016/05/02/third-phase-of- dubais-dewa-solar-project-attracts-record-low-bid-of-us-2-99- centskwh_100024383/		
	1.7 Piasters/kWh	https://www.pv-magazine.com/2018/11/05/dubai-tariff-for-large- scale-pv-hits-new-low-at-0-024-kwh/		
	1.715 Piasters/ kWh	https://www.pv-magazine.com/2016/09/20/abu-dhabi-three- world-record-bids-entered-for-sweihan-solar-project_100026191/		
IRENA Global Average Price		IRENA, Renewable Power Generation Costs in 2017		
IEA Global Average Price	IEA, Renewables 2017			



Appendix 4: Direct proposals Rounds

	0)ire	ct propo	sals Rou	inds		
	F	Rou	ind I	Round 2		Round 3	
First Annoucement	5/2011		011	8/2013		12/2016	
Applicants Letters of Interests		6	4	83		45	
	Solar ene	ergy	Wind	Solar energy	Wind	Solar energy	Wind
Eligible	22		12	47	6	31	14
Applicants: both financial and technical proposals	12		N/A	24	Project Cxld	16	N/A
Number of signatories on power purchase agreements (PPAs)	12		7	4	=	2 or 3 (not yet set)	N/A
Installed Capacity (MW)	200		535	200	-	150	50
Operation	second half	/2016	End 2020	End 2018	-	2020 (expected)	-
Investment Volume (Million US\$)	580		1171	325	-	N/A	-
Average Purchase Price/Tariff	10.5*	12	8.36**	4.817 (2015)	-	1.768 (2018)	-
(Plaster / KVV Hr)	2013						

(*) According to Energy Purchasing Agreement between the Ministry of Energy and Shams Maan Company, comprising 25% of the Installed Capacity of Phase I Projects

(**) Averge Wind Energy Purchase Price in 2017



Appendix (5): Documents related to direct proposals



المتحليق الوزول

رقم القرار

21177

استعرض مجلس الوزراء كتاب معالى وزير الطاقة والثروة المعنية رقم ٢١٢/٣/١٠/١ تاريخ ٢٠١٣/١٢/٢٩ وكتاب معالي وزير الصناعة والتجارة والتموين ومعالى وزير المالية ومعالي وزير الطاقة والثروة المعنية رقم ١٠٢٨/٥/٣/٦ تاريخ ٢٠١٤/٢/١٣ ومرفقيهما التقرير المعد حول نتائج المفاوضات مع الشركات المتقدمة بالعروض المباشرة لمشاريع الخلايا الشمسية لتوليد الكهرباء/ الجولة الأولى وتقرير المستشار فختنر (Fichtner) ، بموضوع العروض المباشرة لتطوير مشاريع الخلايا الشمسية لتوليد الكهرباء، وقرر المجلس الموافقة على ما يلي:-

- أ- اعتماد اتفاقية شراء الطاقة بصيغتها المرفقة بكتاب معالى وزير الطاقة والثروة المعدنية رقم ٢١٢/٣/١٠/١ تاريخ ٢٠١٣/١٢/٢٩ كنموذج لمشاريع الطاقة الشمسية المقدمة ضمن سياسة العروض المباشرة وفقا لأحكام مواد قانون الطاقة المتجددة وترشيد الطاقة رقم (١٧) لسنة ٢٠١٢.
- بالسير فى توقيع الاتفاقية المشار إليها أعلاه مع الشركات المتقدمة بالعروض المباشرة للطاقة الشمسية ضمن الجولة الأولى وعددها (١٢) شركة والمبينة بالجدول المرفق بكتاب معالى وزير الطاقة والثروة المعدنية رقم ١٢/٢/٢/١٢ تاريخ ٢١٢/٢/٢/١٩ وذلك بعد استكمال هذه الشركات للمتطلبات القانونية تاريخ ٢٠١٣/١٢/٢٩، وذلك بعد استكمال هذه الشركات للمتطلبات القانونية والفنية المطلوبة منها وفقا للتشريعات النافذة، وتفويض وزارة الطاقة والثروة معدنية رقم ١٢/٢/٢/٢/٩ تاريخ والفنية المطلوبة منها وفقا للتشريعات النافذة، وتفويض وزارة الطاقة والثروة المعدنية رقم ١٢/٢/٢/٢/٩ تاريخ ١٥ معالى وزير الطاقة والثروة المعدنية رقم المتطلبات القانونية والفنية المطلوبة منها وفقا للتشريعات النافذة، وتفويض وزارة الطاقة والثروة المعدنية وشركة الكهرباء الوطنية بإجراء بعض التعديلات غير الجوهرية على هذه الاتفاقيات في حال تطلب الأمر ذلك، والرجوع لمجلس الوزراء في التعديلات الجوهرية، وعلى أن يتم التوقيع على هذه الاتفاقية والاتفاقيات الأخرى في موعد أقصاه ١٤/٢/٣/٣١ وتفويض عطوفة مدير عام شركة الكهرباء الوطنية باجراء ولي والرجوع لمجلس الوزراء في المعديلات أي والالفاقيات والمعدنية والمعدنية والتقاقيات والمعدنية وعلى أن يتم التوقيع على هذه الاتفاقيات الأخرى في موعد أقصاه ١٤/٢/٣/٣١ وتفويض على هذه الاتفاقيات الأخرى في موعد أقصاه الأرام والاتفاقيات والاخاقيات والأخرى في موعد أقصاه ١٤/٢/٣/٣١ والتفاقيات والاتفاقيات والأخرى في موعد أقصاه الربوايات والاتفاقيات المباشرة لها واتفاقيات الربط الكهرباء الوطنية بالتوقيع على الاتفاقيات والربط الكهرباء الوطنية بالتوقيع على الاتفاقيات والربط الكهرباء الوطنية بالتوقيع على الاتفاقيات الربط الكهرباء الوطنية بالتوقيع على الاتفاقيات الربط الكهرباء المشاريع.
- ج منح الشركات المبينة في الجدول المرفق بكتاب معالى وزير الطاقة والثروة المعدنية رقم ٢١٢/٣/١٠/١ تاريخ ٢٠١٣/١٢/٢٩ وجميع مشاريع العروض المباشرة للطاقة المتجددة لتوليد الكهرباء الإعفاءات المقرة من مجلس الوزراء لمشروع طاقة الرياح في الطفيلة بموجب قراريه رقم (٢٠٦٧) و (٢٠٦١) تاريخ ٢٠١٢/١١/١٢

د - تقديم اتفاقية كفالة الحكومة للالتزامات المالية لشركة الكهرباء الوطنية في اتفاقية شراء الطاقة والاتفاقية المباشرة لها لمشاريع الطاقة الشمسية للشركات المشار إليها أعلاه وتفويض معالي وزير المالية بالتوقيع على هذه الاتفاقيات.





رقم القرار

- ٩- تفويض عطوفة القائم بأعمال رئيس مجلس مفوضى هيئة تنظيم قطاع الكهرباء بالتوقيع على البندين (2.1) و (13) من الاتفاقية المباشرة لاتفاقية شراء الطاقة.
- و تكليف هيئة تنظيم قطاع الكهرباء بإصدار رخصة التوليد المطلوبة لهذه المشاريع وفقا لأحكام المادة (٧/ ب/١) من قانون الطاقة المتجددة وترشيد الطاقة رقم (١٣) لسنة ٢٠١٢.
- ز اعتبار طلب الممولين لموضوع الاكتشافات الأثرية في موقع المشاريع في منطقة معان التنموية مندرجاً تحت الظروف القاهرة الحكومية التي تستوجب التعويض للشركات المتضررة وفقا للألية التالية:-
- تعويض الشركة المتضررة عن التكاليف الفعلية المصروفة على المشروع لتاريخه.
 قيام شركة تطوير معان بإعطاء الشركة المتضررة موقعاً بديلاً مماثلا من حيث المساحة والطبوغر افية قدر الإمكان لتنفيذ مشروعها ضمن
 - منطقة معان التنموية لتسهيل عملية الربط الكهرباني لهذا المشروع.
 - شراء الطاقة الكهربانية من هذه المشاريع وفقا للآلية التالية: -

١. تعرفة شراء الطاقة الكهربانية المولدة من مشاريع الطاقة الشمسية للمرحلة الأولى (باستثناء مشروع شمس معان) ١٢٠ فلسا / ك. و. س حتى سقف إنتاج سنوي (2.1). ج.و.س / م.و لتكنولوجيا الخلايا الشمسية الثابتة وبسقف (2.5) ج.و.س/م.و لتكنولوجيا الخلايا الشمسية المتحركة.

٢. (٨٠%) من الطاقة الكهربانية المولدة والتي تزيد عن السقوف المحددة أعلاه مجانية لصالح شركة الكهرباء الوطنية ويتم دفع قيمة باقي الطاقة الكهربانية المولدة (٢٠%) بواقع (١٢٠) فلما / ك.و.س.

٢. الطاقة المولدة من أي مشروع زيادة عن الطاقة السنوية المتوقع توليدها كما هو مقدم في النموذج المالي للمشاريع يتم اعتبار ها طاقة مجانية لصالح شركة الكهرباء الوطنية حتى إذا كانت هذه الطاقة دون السقوف المحددة في البند (1) أعلاه.







Qualified Expression of Interests for Direct Proposal Submissions for Renewable Energy Projects

No.	Applicant	Technology & Capacity
1.	Kawar Consortium	PV/ 50 MW
2.	ACWA Power	PV /10 MW
3.	SunEdison Hellas SA	PV / 20 MW
4.	Shamsuna Power Company	PV /10 MW
5.	Martifer Solar, S.A.	PV / 10 MW
6.	Zouk Solar Opportunities Ltd.	PV / 10 MW
7.	Kinetics + Marquis + Infinite Technologies	PV / 10 MW
8.	Jordanian American Renewable Energy Company LLC	PV / 20 MW
9.	Sithe Global	PV / 20 MW
10.	Southern Sun Consortium	PV / 20 MW
11.	Ennera	PV / 10 MW
12.	Guascor Solar	PV/5MW
13.	Clean Energy Concepts	PV / 10 MW
14.	Enviromena Power Systems LLC	PV / 10 MW
15.	Scatec Solar	PV / 10 MW
16.	Bright Power Group	CPV / 10 MW
17.	Greenland Alternative Energy	CPV / 10 MW

71.2 CW

Seria and

, il



No.	Applicant	Technology & Capacity
18.	Abengoa Solar	CSP / 25 MW
19.	Mitsubishi Corporation	CSP / 50 MW
20.	EJRE Projects	CSP / 50 MW
21.	Evolution Solar	CSP / 50 MW
22.	Catalyst Private Equity	CSP / 50 MW
23.	Preciz Ltd and NRG Systems Ltd	Wind / 24 MW
24.	EYRA Internacional	Wind / 100 MW
25.	KOSPO	Wind / 48 MW
26.	Xenel International+ WKN AG	Wind / 30-50 MW
27.	China International Water & Electric Corporation	Wind / 50 MW
28.	Green Watts	Wind / 83 MW
29.	Ayla Oasis	Wind / 20 MW
30.	El Sewedy + Terna Energy	Wind / 50 MW
31.	Vestas+ CCC	Wind / 16-24 MW
32.	Delenova	Wind / 45 MW
33.	Gecal Renovables S.A.	Wind / 40-80 MW
34.	Windkraft Simonsfeld	Wind / 24 MW

2-

the cui

waller .



الجدول رقم (1)

قائمة الشركات المؤهلة لطلبات الاهتمام المقدمة

للمرحلة الثانية من العروض المباشرة لمشاريع توليد الطاقة الكهربانية باستخدام الخلايا الشمسية

<u>Table (1): List of Qualified Expressions of Interest for</u> <u>Direct Proposal Submissions/ Stage 2 for Solar Energy (PV) Projects</u>

	Applicant
1.	Linuo Group Co.
2.	AS Solar GmbH
3.	Hanergy Global Solar Power Group (Europe)
4.	Enfinity Middle East
5.	Philadelphia Solar
6.	Solairedirect
7.	Mainstream Renewable Power
8.	Helios Power JV/ Solartec
9.	Building Energy
10.	Alten Renewable Energy Developments
11.	Hareon Swiss Holding AG
12.	Changzhou Trina Solar Energy Co.
13.	Saudi Oger
14.	SkyPower Services
15.	Saudi International Telecom & Electronics Group (Int'Itec Group)
16.	Scatec Solar
17.	G.I. Karnomourakis "SunRise PV Systems"
18.	Activ Solar
19.	Kawar Investments
20.	ELF for Generating Renewable Energy
21.	Neoen
22.	Canadian Solar
23.	International Company of Power and Water Projects (ACWA Power)

رئيس لجنة العروض المباشرة

أمين عام وزارة الطاقة والثروة المعدنية

المهندس فاروق الحياري

& Czui



الجدول رقم (2)

قائمة الشركات المؤهلة بشروط لطلبات الاهتمام المقدمة

للمرحلة الثانية من العروض المباشرة لمشاريع توليد الطاقة الكهربانية باستخدام الخلايا الشمسية

Table (2): List of Conditionally Qualified Expressions of Interest for Direct Proposal Submissions/ Stage 2 for Solar Energy (PV) Projects

	Applicant
1.	Elecnor
2.	Abu Dhabi Future Energy Company PJSC (Masdar)
3.	Al Sanad for Renewable Energy (JoSolars)
4.	SunEdison Italia Construction
5.	Sources International Trading Company
6.	Suncore Photovoltaic Technology Co.
7.	Clean Energy Concepts
8.	British Solar Renewables
9.	Aqaba National Real Estate Projects Company (ANREPCO)
10.	Evolution Solar
11.	Abengoa Solar
12.	Xenel International
13.	Al Sanabel International Holding
14.	Seci Energia
15.	Terra Sola Jordan for Renewable Energy
16.	Giza Solar for Renewables
17.	Spectrum International for Investment
18.	The Jordanian Company for Canadian Renewable Energy (JCRE)
19.	Fotowatio Renewable Ventures
20.	Shapoorji Pallonji & Company
21.	Deutsche Eco International
22.	Dynamic Renewable Energy
23.	The European Jordanian Renewable Energy Projects
24.	Bright Investments Group

رنيس لجنة العروض المباشرة

أمين عام وزارة الطاقة والثروة المعدنية

المهندس فاروق الحياري

- si

A

Ministry of Energy and Mineral Resources Direct Proposal Submission/ Stage II PV

Final Ranking for Qualified Proposals 22 June 2015

Rank	Name	Tariff [Fils/kWh]
1	SunRise PV Systems	43,4491
2	Saudi Oger	45,9784
3	Fotowatio Renewable Ventures	48,949
4	Hareon Swiss Holding	54,3
5	Evolution Solar	55,9
6	Philadelphia Solar	56
7	Solairedirect	56,8
8	Neoen	57,38
9	Linuo Group Co.	58,6
10	Activ Solar	60,21
11	Mainstream Renewable Power	61,49346
12	Kawar Investments	62,3
13	Alten	62,75
14	Al Sanad for RE (JoSolars)	62,99
15	SkyPower Services	63,61881
16	SunEdison Italia Construction	64
17	Elecnor	64,13
18	ACWA Power	65,31
19	ELF	66
20	Seci Energia	66
21	Scatec Solar	66,99
22	Hanergy	70
23	Spectrum	73
24	Suncore	94,2

erles De



وسي إلله التجز التجنير



وكالقالظا فتقالتن فالتفايذ تنتق

0 EAA/2.b.2	الرقم
Y . NVI. VIX	التاريخ
	المو افق

الجدول رقم (1)

القائمة المعدلة للشركات المؤهلة لطلبات الاهتمام لمشاريع الخلايا الشمسية

المقدمة للمرحلة الثالثة للعروض المباشرة

Table (1): Modified List of Qualified Expressions of Interest for Solar Energy (PV) Projects for Direct Proposal Submissions/ Stage III

	Applicant
1.	Acciona Energia Global; Enara Bahrain SPV WLL,
2.	ACWA Power (International Company for Water and Power Projects); Chint Solar (Zhejiang) Co Ltd,
3.	Adenium Energy Capital, LTD; ET Solutions AG; Ahmad Yousef Al- Tarawneh and Partner Ltd,
4.	Al-Edwan Contracting Company; Conergy Asia & ME Pte Ltd,
5.	Diamond Generating Europe Limited (Mitsubishi),
6.	First Solar International Middle East FZ-LLC,
7.	FRV Solar Holdings VIII B.V.,
8.	Hanwa Energy Corporation; KEPCO; Arabia Trading and Consulting,
9.	Hareon Swiss Holding AG; Spectrum International for Renewable Energy,
10.	Innogy SE; Kawar Investment Company LLC; Canadian Solar UK Projects LTD,
11.	International Power SA Dubai Branch (ENGIE),
12.	JinkoSolar Holding Co., Ltd.,
13.	Linuo Group Co., Ltd,
14.	Marubeni Corporation,
15.	Masdar (Abu Dhabi Future Energy Company),
16.	Neoen SAS / Catalyst MENA Clean Energy Cooperatie,
17.	NSCC International (L.L.C); Isolux Ingeneria S.A.,
18.	Orange Renewable Power PVT LTD; Waaree Energies LTD,
19.	Phelan Energy Group Limited,
	المملكة الأمردنية الهاشمية
www	* ماق : ١٠٠٣٠٦ ٦ ٢٦٠ فاكس: ١٢٥٦٥٧٦ ٦ ٢٢٠ + ص.ب: ١٤٠٠٢٧ عمان ١١٨١٤ الأردن . الموقع الإكتروني: V.MEMR.GOV.JO







فيسس كمقرال تتن النصب



م <u>ط م/۹۳۷۹</u>	الرة
٢.١٨/١٢/٢٢	التار
افق	المو

الترتيب النهائي للشركات المؤهلة لمشاريع العروض المباشرة للخلايا الشمسية/ الجولة الثالثة Final ranking for the qualified bidders for Direct Proposals Submission for solar PV projects/Round III

Ranking	Bidder Name	Tariff in Fils/KWh	Base/Alternative	Size in MW
1	Jinko Power (HK) Company Limited	17.62900	Alternative	100MW
2	Jinko Power (HK) Company Limited	17.64663	Base	50MW
3	RAI Energy International, Inc. (LD); Capital Investments & Brokerage / Jordan Ltd. Co.	17.76121	Alternative	100MW
4	RAI Energy International, Inc. (LD); Capital Investments & Brokerage / Jordan Ltd. Co.	17.78768	Base	50MW
5	Canadian Solar UK Projects Ltd. (LD); Kawar Investments Company Ltd	23.00000	Alternative	100MW
6	FRV Solar Holdings VIII B.V. (Parent Company: Fotowatio Renewable Ventures B.V.)	23.48670	Alternative	100MW
7	Canadian Solar UK Projects Ltd. (LD); Kawar Investments Company Ltd	24.40000	Base	50MW
8	FRV Solar Holdings VIII B.V. (Parent Company: Fotowatio Renewable Ventures B.V.)	24.42380	Base	50MW
9	First Solar International Middle East FZ- LLC	27.90000	Base	50MW

المملكته الأمردنيته الهاشميته

هاق: ١٨٠٣٠٦ ٦ ٢٦ + فأكس: ١٨٦٥ ٢ ٦٦ + ص.ب: ١٤٠٠٢٧ عمان ١٨١٤ الأمردن . الموقع الإكتر وفي: WWW.MEMR.GOV.JO



بتسب لمثرا تتوزار بحبتهم



فلاتقالظافة كالتزق للغانية

 الرقم
 التاريخ
 الموافق

الترتيب النهاني للشركات المؤهلة لمشاريع العروض المباشرة للخلايا الشمسية/ الجولة الثالثة Final ranking for the qualified bidders for Direct Proposals Submission for solar PV projects/Round III

		T	-1	
10	Phelan Energy Group Limited	27.99700	Base	50MW
11	Abu Dhabi Future Energy Company PJSC - Masdar	29.15300	Base	50MW
12	VOLTALIA SA	29.36180	Base	50MW
13	Neon SAS (LD); Catalyst MENA Clean Energy:·Cooperatie U.A.	29.95920	Base	50MW
14	Hanwha Energy Corporation (HEC) (LD); Korea Electric Power Corporation ("KEPCO"); Arabia Trading & Consulting Co. Ltd. ("ATC")	31.05500	Base	50MW
15	TBEA Xinjiang SunOasis Co.,Ltd	32.95300	Base	50MW
16	Adenium Energy Capital Ltd (LD); ET Solutions AG; Ahmad Yousef Al- Tarawneh and Partner Co. Ltd.	33.90000	Base	50MW
17	ACWA Power (LD); Chint Solar (Zhejiang) Co., Ltd	34.20700	Base	50MW
18	Solarpack Corporación Tecnológica, S.L (LD).; Xenel International	Not Compliant		

رئيس لجنة نظام العرض المباشر

الأمين العام م.أماني الْعَزام

م. المعلى العرام الملكة الأردنية الهاشية. ماق : ٢٠٦٠ ماق : ٢٩٦٢ ١٥٨٠٢ ٢٦٠ + فأكس : ٢٥٨٦٥٧١٤ - ص.ب : ٢٤٠٠٢٧ عمان ١٨١٤ الأردن . الموقع الإكتروني : WWW.MEMRGOV.JO