
Solar Rooftop

Perspective on Regulatory Frameworks and Emerging Business Models in the Middle East

Abridged Version

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Muscat, Oman

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Jordan

Self-Generation Regime

- Off grid projects
- No generation licence required

Net Metering / Wheeling Regulations

- Revised net metering regulation issued in Aug 2016
- Revision of wheeling regulation -- pending decision on wheeling fees
- Generation licence required if capacity over 5 MW

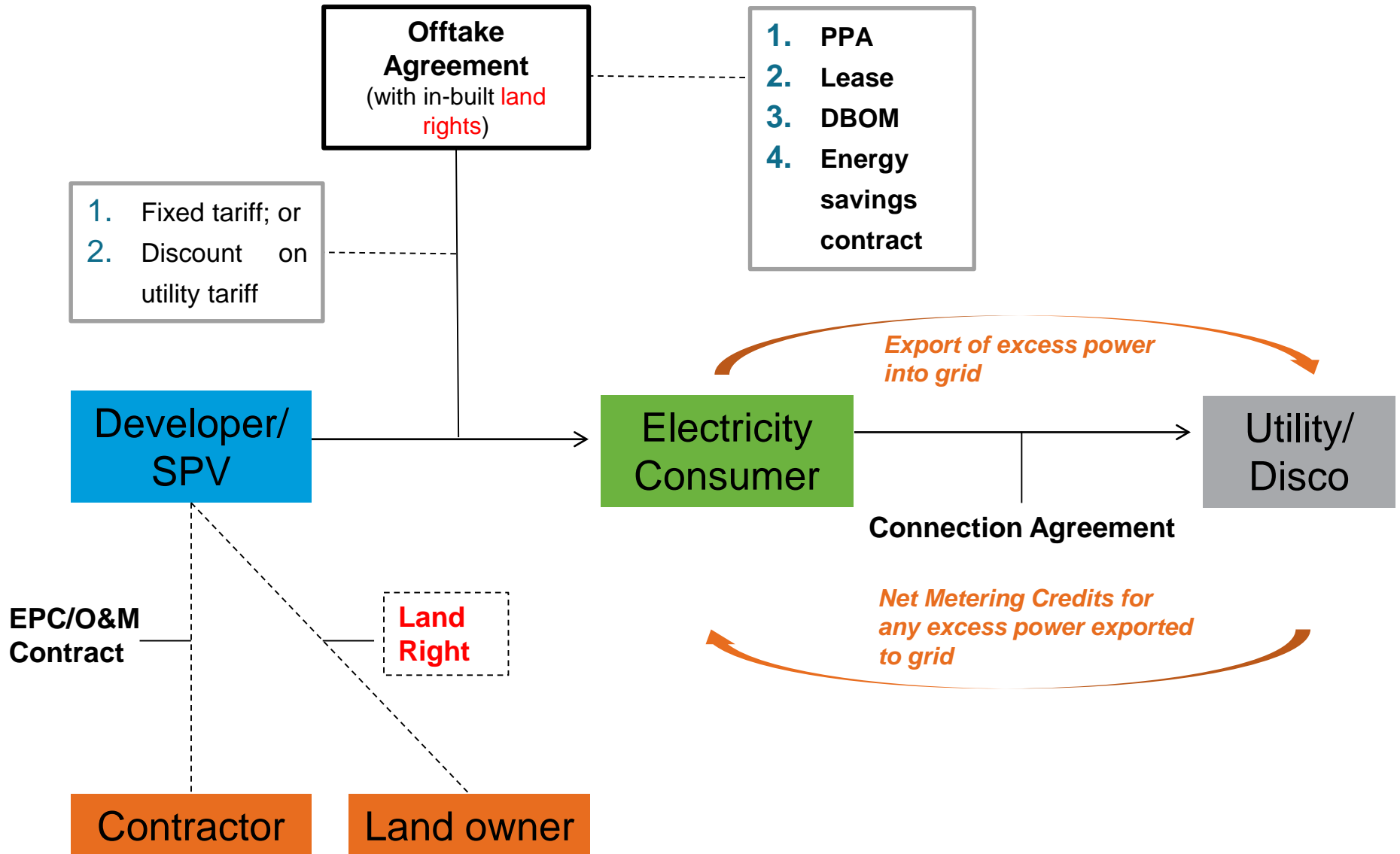
Dubai

Executive Council Resolution No. 46 of 2014 Concerning the Connection of Generators of Electricity from Solar Energy to the Power Distribution System in Dubai (“**ECR 46**”).



- Permission to:
 - build/operate solar power facilities (rooftop/ground-mounted) and connect to electricity distribution system
 - export excess power to electricity distribution system, for net metering credits
- Electricity generation and consumption must be on the same site. So, **no wheeling**
- DEWA accreditation scheme for contractors/ consultants
- DEWA sets Annual Connection Cap: max amount of solar generation capacity that may be connected to distribution system in one year (currently undefined)

Emerging Business Models



Lessons Learnt and Takeaways for Oman

- **Set a clear direction on type of DG solar market Oman wants**
 - Does Oman want an EPC only market? Or is it prepared to accept IPP-type companies operating in its DG solar market (and offering financing to potential power purchasers)?
 - Which market segments does Oman most want to develop?
 - residential / commercial / industrial
 - promotion of specific commercial / industrial sectors
 - Solar rooftop only – or also ground-mounted DG solar?
 - Do the current electricity tariff structures work for the purposes of achieving Oman's stated aims for solar rooftop / DG solar?

Lessons Learnt and Takeaways for Oman

Oman's "Permitted Tariffs" for Electricity Supply *

Permitted Tariff Category	Tariff Structure				
Industrial 1	All Regions except Dhofar			Dhofar Region	
	September to April: 12 Baiza per kWh			August to March: 12 Baiza per kWh	
	May to August: 24 Baiza per kWh			April to July: 24 Baiza per kWh	
Commercial	Flat rate @ 20 Baiza per kWh				
Ministry of Defence and the Sultan Special Forces	Flat rate @ 20 Baiza per kWh				
Residential	0-3000 kWh	3001-5000 kWh	5001-7000 kWh	7001-10000 kWh	above 10000 kWh
	10 Bz / kWh	15 Bz / kWh	20 Bz / kWh	25 Bz / kWh	30 Bz / kWh
Government	0-3000 kWh	3001-5000 kWh	5001-7000 kWh	7001-10000 kWh	above 10000 kWh
	10 Bz / kWh	15 Bz / kWh	20 Bz / kWh	25 Bz / kWh	30 Bz / kWh
Agriculture & Fisheries	0-7000 kWh			7001 kWh & above	
	10 Baiza per kWh			20 Baiza per kWh	
Tourism ²	0-3000 kWh	3001-5000 kWh	5001-7000 kWh	above 7001 kWh	
	10 Bz / kWh	15 Bz / kWh	20 Bz / kWh	20 Bz / kWh	

6.2 US\$ cents

5.2 US\$ cents

6.5 US\$ cents

7.8 US\$ cents

Demand Side Management

Consider more seasonal tariffs (e.g. commercial consumer)

Consider permitting / incentivising storage (e.g. in weak grid areas)

1 Customers require a MOCI letter of recommendation and must maintain a power factor of least 0.9

2 Subject to Ministry of Tourism regulations and approval

Lessons Learnt and Takeaways for Oman

● **Regulatory framework**

- Build on Oman's leading regulatory framework for electricity and water in the region, while drawing on lessons learnt in other regional DG solar markets -- e.g.:
 - no generation licence for DG solar projects – streamlined approvals process
 - clarity on how businesses should be structured and licenced
 - to address reluctance or inability of private offtakers to provide payment security, consider implementing an arrangement whereby the consumer will be cut off from the grid if it fails to pay the DG solar developer
- Issue clear laws and regulations – ideally with official translations in English
- Reduce scope for conflicts of interest. Try to get buy-in from local utilities / grid operators by providing opportunities for them to benefit from DG solar
- Avoid changing goal posts

● **Educate and Train**

- Provide training sessions for electricity consumers on typical contract terms
- Involve local lenders and educate on emerging business models & financing needs

● **Green bank or fund**

- Consider the establishment of a green bank or fund (which will understand Oman and DG solar) to provide attractive financing to market players

Lessons Learnt and Takeaways for Oman

- **Promote ease of doing DG solar business**

- Streamline time to obtain approvals, permits, and licences
- Consider establishing a solar unit (with English speaking capability) – and ideally try to structure things so that that the solar unit can coordinate and expedite administrative processes for developers with other government authorities
- Avoid processes that will significantly add to developer costs (e.g. inspection fees)
- Avoid, to the extent possible, requirements for translations, notarisations, and legalisations

- **Provide an innovation-friendly environment**

- In the next few years, expect to see a lot of innovation in the DG solar sector:
 - mobile phone payment technology
 - crowdfunding
 - Blockchain / crypto-currencies
- Give Oman and its citizens the means to participate in such innovations and reap their economic benefits

