



**GREEN
GULF**

GCC Association
for Renewable Energy
& Sustainability

GCC Renewable Energy Market Update From and the Industry Perspective

Dr. Amin Al Yaquob
Extenda Event, Spain | 27 Nov, 2019

About Us



- Green Gulf Association is an NGO, based in Bahrain and involved in the promoting renewable energy and sustainability in the GCC region.
- Expansion of Saudi Arabia Solar Industries Association (SASIA)
- Founded by some of the largest GCC companies
- Aims to share policy and RE development experiences
- Over 300 members from all renewable energy sectors



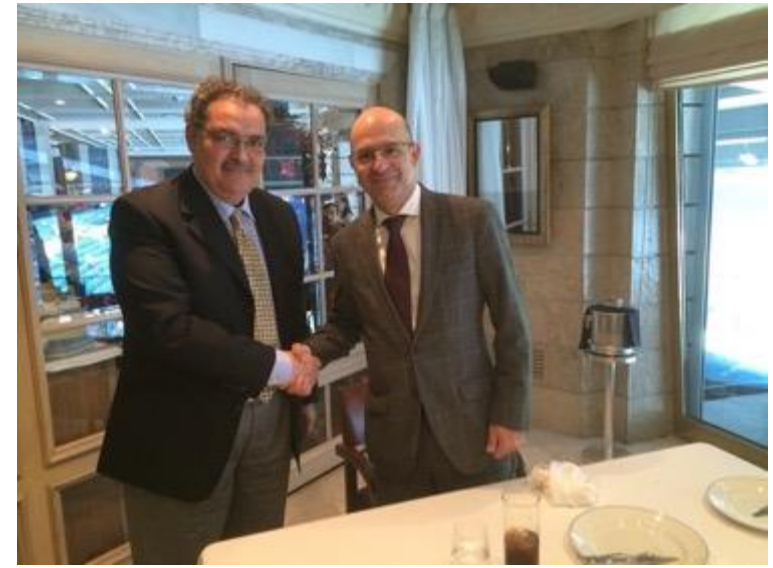
1st Trade Mission to Saudi Arabia, 10-14 November, 2013

A group of high-level international solar PV executives gathered in Riyadh & Dhahran Saudi Aramco. for intensive meetings, networking and presentations on the emerging Saudi solar market.



2nd Annual Saudi Solar PV Trade Mission, 14-18 September, 2014

The trade mission included visits to Advanced Electronics Company Limited (AEC), King Abdulaziz City for Science and Technology (KACST), and Saudi Electric Company (SEC).



Saudi Solar Trade Mission to Spain, November 2014

The Spanish Photovoltaic Union UNEF & SASIA hosted a Trade Mission to identify potential investment and partnering opportunities between Saudi and Spanish companies.

About the GCC

- Homogeneous Political and Economic Region of 6 states
- Ranks the 5th global economic group in terms of trade volume, the 12th among largest economies, with GDP of \$1.62 trillion
- Similar laws and regulations (allow free inter-trading, commercial activities, commute)
- Some organizations:



**GCC Electrical
Testing Laboratory**
المفتبر الفليجي لفحص المعدات الكهربائية

GCC Interconnection



- Completed in 2011
- Resulted in \$20B/yr savings
- Future plans to extend the network beyond GCC

Renewable Energy Development in the GCC Region



- RE development was motivated by the decline in oil prices during (2015-2016)
- RE became an integral part of the GCC vision 2030, and transformation plans (economic diversification, industry support)
- Birth of new global companies (Acwa Power, ALJ Photowatio, Masdar), and record low tariffs in PV and CSP.
- Strong support and incentives for investments
- Local content regulations (Saudi Arabia/ Oman)

GCC Visions & Renewable Energy Targets



Country	Target	Year	Details
Saudi Arabia	10%	2023	9.5 GW of mix (PV, CSP, Wind, W2E)
Bahrain	5%	2020	Starting with 225MW
Kuwait	15%	2030	PV: 4.6 GW CSP: 5.7 GW Wind: 0.7 GW
Oman	10%	2025	(7 years plan 2018-2024)
UAE	By states	2020-203	Abu Dhabi 7% Dubai 25%
Qatar	20%	2030	PV: 1.8 GW

Electricity Reforms

- Electricity and fuels were subsidized, impeding the feasibility of RE
- Various recommendations were for cutting fuels subsidies, to make RE competitive, and allow higher export margins for oil products
- All GCC states have went through electricity price and market reforms
 - Approx: \$1.3 cents to \$8 cents / KWH
- Solar PV without storage, reached grid parity level
- Plans for PPP and privaitaions

GCC 2018 Projects



Project	Country	Capacity (MW)	Status	Client
Bahrain PV	Bahrain	100	Announced	EWA
KNPC	Kuwait	1,000	Bid Stage	KNPC
IBRI	Oman	500	Big stage	OPWA
PDO	Oman	100	Announced	PDO
Sweihan II	UAE	1,200	Announced	ADEWA
DEWA Phase V	UAE	300	Announced	DEWA
Qatar PV	Qatar	200	Announced	Kahrama
Total		(3.4 GW)		

*Except Saudi Arabia.

Oman



- Plans 4 GW of RE by 2030 of 10%.
- Miraah 1 GW CSP was inaugurated by the Ministry of Oil and Gas, PDO, and GlassPoint Solar, at the Amal oilfield.
- The project delivers steam to the Amal oilfield, which is used for thermal enhanced oil recovery (EOR).
- Construction began in 2015 and the entire project is supposed to consist of 36 blocks,
- Four blocks of 100 MW completed this year.

United Arab Emirates (Dubai/DEWA)



- In March 2017, DEWA announced the completion of the 200 MW Phase II Sheikh Al Maktoum Solar Park. (expected to reach 5 GW by 2030)
- DEWA negotiated a US\$3.9 billion contract to a consortium comprised of Shanghai Electric and Saudi Arabia's ACWA Power to develop and run a 700 MW CSP (7.3 US\$ cents/kWh)
- Etihad Energy Services Company (Etihad ESCO) awarded 60 MW of floating solar PV systems on the utility's water reservoirs
- DEWA also plans to launch a tender for Phase V of the Mohammad bin Rashid Al Maktoum Solar Park. Total capacity is expected to be 300 MW.

United Arab Emirates (Abu Dhabi/ ADEWA)



- Sweihan PV project of 1.17GW Project was awarded to Jinko/Marubneni (of 2.94 US\$/kWh, 25 yrs PPA), be connected to the grid by early 2019.
- ADEWA issued an RFP for Sweihan II project with a min. capacity of 350 MW, with possibility for expansion to 1.2 GW

Kuwait



- Kuwait aims 2 GW of RE capacity by 2030
- Kuwait issued tender for the US\$1.2 billion Dibdibah solar facility, which will have an estimated capacity of 1 GW.
- Project covers 12.3 square mile solar plant located in Kuwait's northwest region is expected to be completed by 2020.

Bahrain



- Bahrain plans to bring 255 MW of PV by 2025 and 700 MW of PV by 2030.
- Tendered a 100 MW solar-power plant in the first quarter of 2018, using the IPP model.
- 15MW manufacturing and production facility was inaugurated at the start of 2017 (60,000 panels / yrs)

Qatar



- Qatar is looking to meet 20% via solar energy by 2030.
- Qatar Solar Technologies (QSTec) set up polysilicon production plant in Ras Laffan Industrial City, 80 km north of Doha.
- Commenced operations in March 2017, is producing 8,000 tons/yr.
- A 200 MW solar power plant will be developed in Qatar by Siraj Power.
- Completion of the facility is expected in 2020, and capacity expansion to 500 MW is expected in the future.

Energy Storage



- DEWA signed an MoA with the GCCIA and the Belgian Dredging, Environmental & Marine Engineering Group (DEME).
- MoU to study 400 MW pumped hydro-storage station with a capacity of 2,500 MWh of storage.
- Previously, DEWA's launched 250 MW pumped storage in Hatta, water will be stored in the Hatta Dam and in an upper reservoir that will be built into the mountain.
 - Solar energy produced during the day will be used to pump water from the lower reservoir to the upper reservoir.