

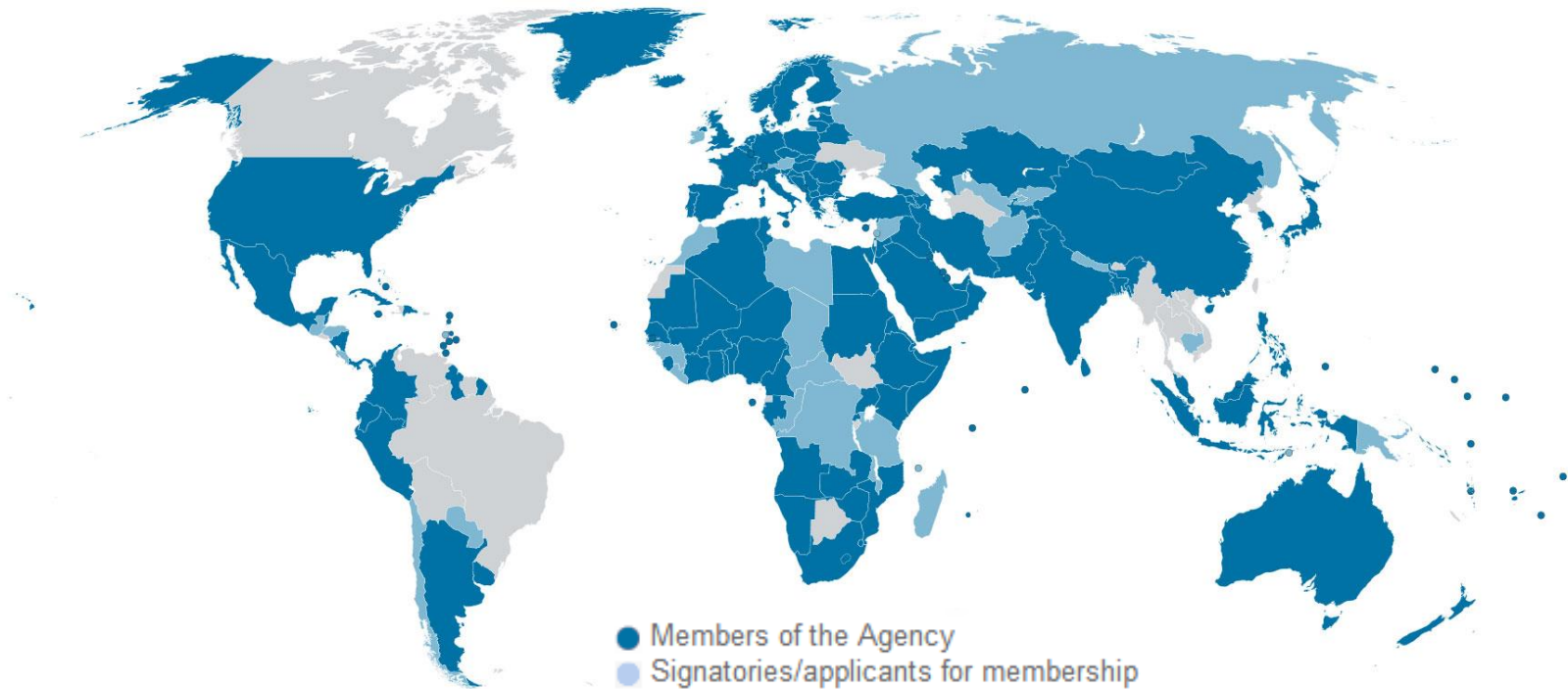
Renewable Energy Policies highlights in the Gulf Cooperation Council and the Middle East and North Africa region

Supporting deployment of low-carbon technologies in the ETC and SEMED regions

June 15, 2015

Introduction to IRENA

- Intergovernmental renewable energy agency, headquarters in **Abu Dhabi**, United Arab Emirates. Innovation and Technology Centre in **Bonn**, **Germany**
- **Mandate:** Bioenergy, Geothermal, Hydro, Ocean, Solar, Wind as well as energy efficiency.
- **Membership:** 141 Members; 31 Signatories/States in accession



The Gulf Cooperation Council

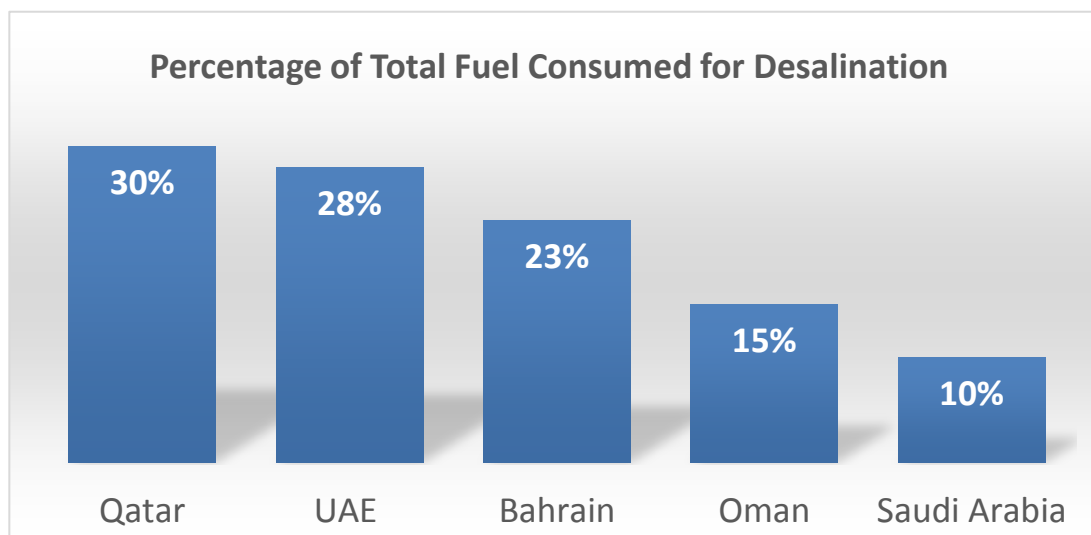
Rationale for diversification

- Rising demand for energy
- Resource constraints – Gas and Oil
- Forgone earnings from fossil fuels exports
- Pressure on government budgets
- Interlinkages between resources
- High per capita carbon footprints

Subsidy costs in GCC countries

9% – 28%
of government revenue

	<i>tCO₂ per Capita</i>
<i>GCC</i>	19
<i>United States</i>	17
<i>European Union</i>	7
<i>China</i>	5
<i>World</i>	4



RE plans in GCC

Targets:

2020: 5% of generation

2030: 10% of generation

2030: 3.5GW PV, 1.1GW CSP, 3.1GW Wind

Plans

2022: 24GW

2032: 54GW. 41GW Solar (25GW CSP, 16GW PV), 9GW Wind, 3GW W2E, 1GW Geothermal

Targets:

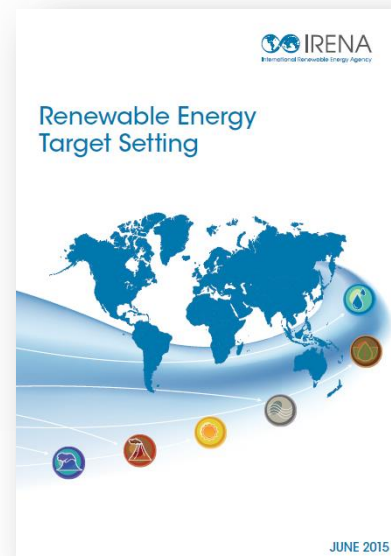
2020: (Abu Dhabi) 7% of capacity

2030: (Dubai) 15% of capacity

2020: 5%

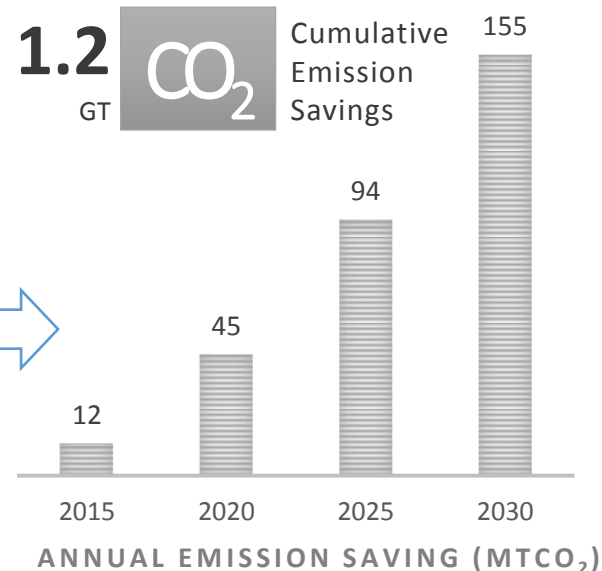
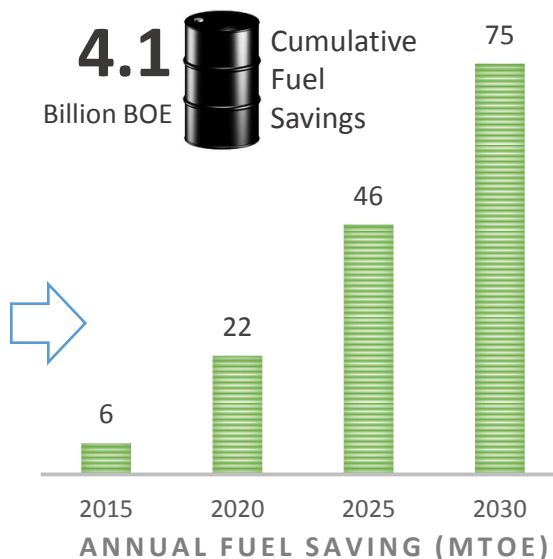
2020: 2% of generation by solar (640MW)

2020: 10%



Benefits of RE in GCC

	Target	Year
Bahrain	5%	2020
Kuwait	10%	2030
Oman	10%	2020
Qatar	2%	2020
KSA	54GW	2032
UAE		
Abu Dhabi	7%	2020
Dubai	15%	2030



121,000
Jobs Every Year
(on average)

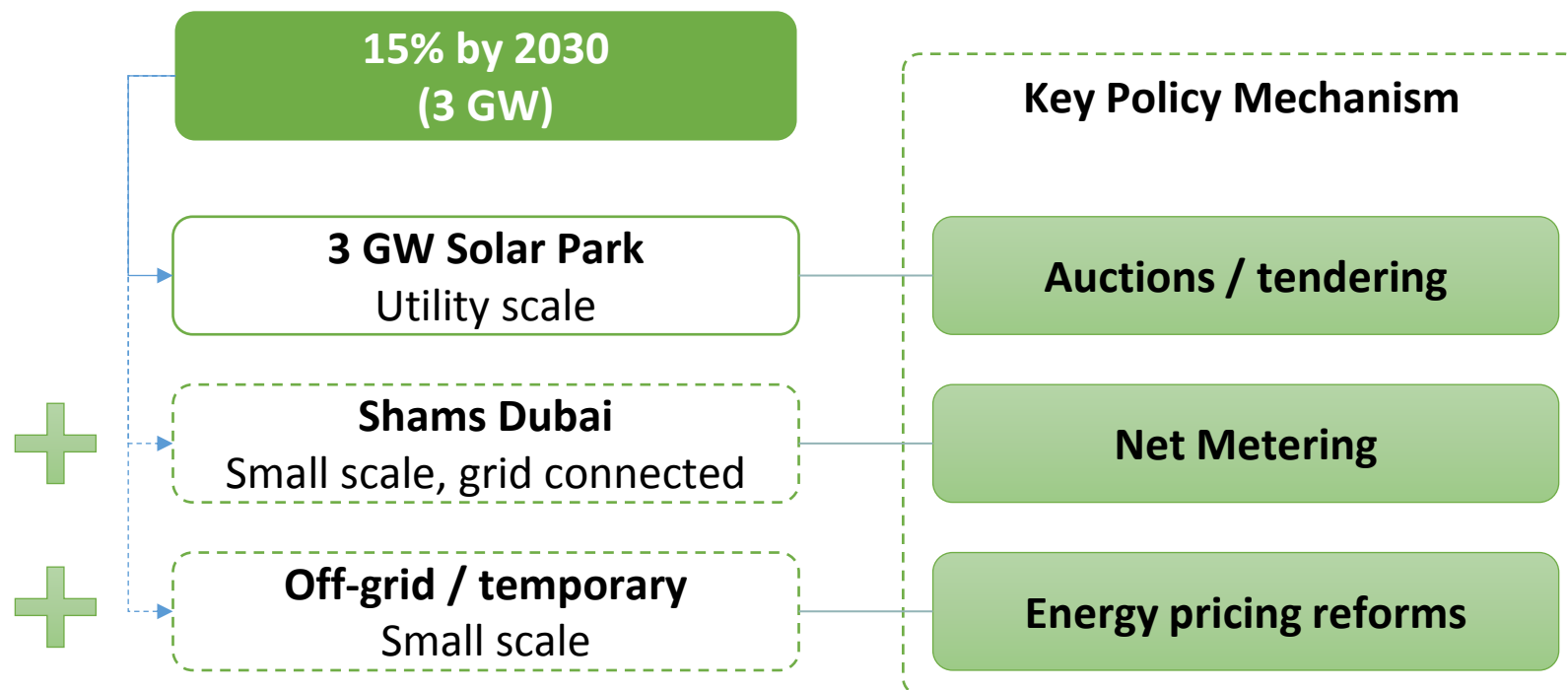
150 Billion  Discounted*
Fuel Savings

6.5 Billion  Monetized and
Discounted*
CO₂ Savings

* Notes: Discount rate = 5%; Price of oil = 75 USD/barral; Price of natural gas = 11 USD/MMBtu; Price of CO₂ = 10 USD/tCO₂

Renewable energy policies in Dubai

Policy making by market segment



Renewable energy policies in Dubai

Small scale: on- and off-grid

Policy support for grid connected applications:

Shams Dubai - net metering programme

- Generation can be banked for long periods
- Training for PV consultants / contractors
- Equipment ratification

Given the current tariff structures, solar PV with net-metering can be cost effective for commercial and industrial consumers (high tariff slab).

Status: Various applications for connection, projects are coming online, consultants from 18 companies have been trained and equipment of 25 companies ratified.

Auctions for utility scale deployment

Dubai Solar Park

Phase 2 achieved with the lowest awarded price

Numerous bids below 10 \$c/kWh.

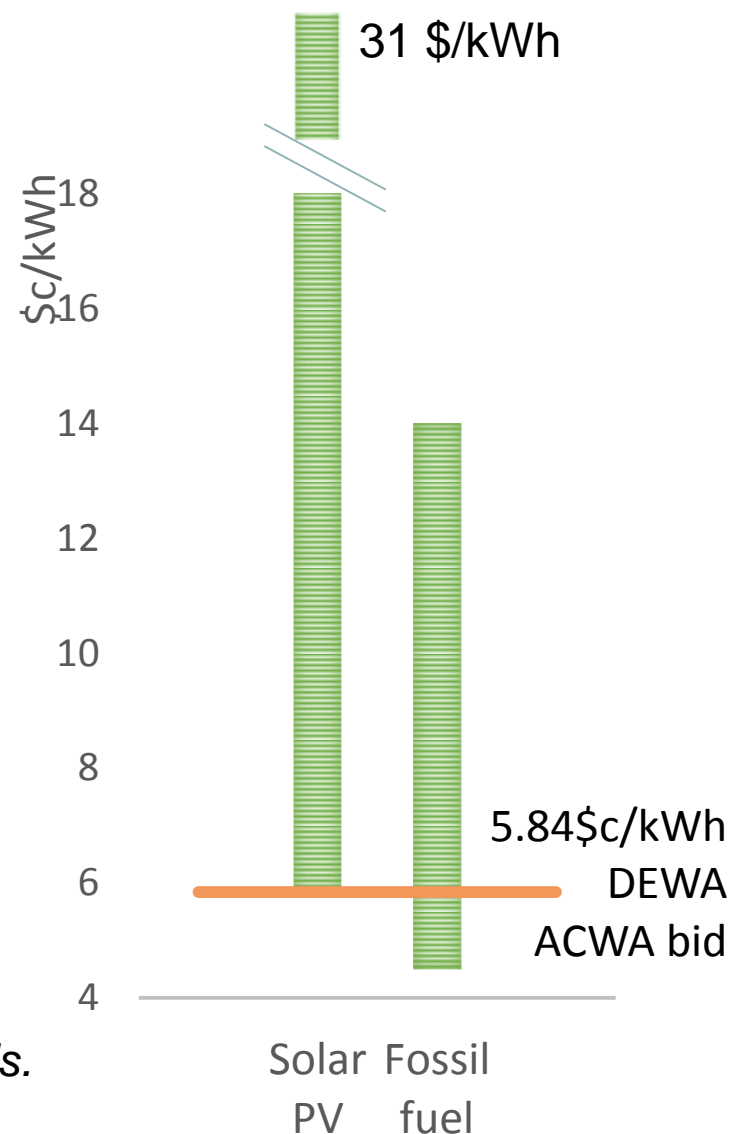
Important design elements:

Detailed pre-qualification process

DEWA is off taker and owner

Long-term vision

Flexibility of the auction



Morocco, Noor 1 – 160 MW CSP

Strong pre-qualification requirements including

- Experience in project development and operation.
- Proof of strong balance sheet

Only 4 out of 12 auctions made it to the bidding rounds.

Renewable energy auctions

Key insights

Increase competition through:

- Diversity of competing technologies
- Volume auctioned
- Level of participation of bidders
- Collusion prevention

While limiting participation to bidders that can meet objectives

Other development goals such as job creation and industry development can also be important considerations.

Policy makers need to account for trade-offs between different design elements.



Thank you!