



# ACWA Power Business-driven Value Development

May 31, 2016



## Who We Are?

- ✓ ACWA Power is a developer, investor, co-owner and operator of plants

**32** assets  
representing  
**22.8 GW** of  
power

investment  
value in  
excess of **USD**  
**32 billion**

**2.5 million**  
**m<sup>3</sup>/day** of  
desalinated  
water

providing  
**employment**  
to more than  
**2,850 people**

## ACWA Power Renewable Energy Projects

- **50 MW** Concentrated Solar Power (**CSP**) plant at **Bokpoort** in **South Africa** under construction.
- **100 MW** of **CSP** has just finalized its testing in January 2016 at **Redstone** in **South Africa**.
- **Noor I** project of **160 MW CSP** parabolic trough at Ouarzazate in Morocco was connected to the grid in February 2016.
- **Noor II, 200 MW** parabolic through **CSP** plant under construction.
- **Noor III, 150 MW** central tower **CSP** plants have just begun construction.
- **Khalladi Wind** project in Morocco of **120 MW** capacity has achieved Financial Close on November 27, 2015.
- **Karadzhalovo 60 MW PV** project in operation since in 2012 **Bulgaria**.
- **Shua'a 200 MW PV** project in UAE under construction.
- **Sunrise Solar Energy 50 MW PV** project in Jordan under advanced development.

## Global Figures on Renewable Energy:

- Last year Renewable capacity increased by **152 GW** (8.3%)
- Total RE capacity in **2015** was **1,985 GW**
- **\$ 286 billion** invested in RE projects in **2015**
- **2015** is a **record** year in RE
- Wind grew **62 GW (17%)** with decline in onshore turbine price of 45% since 2010
- Solar increased **47 GW (37%)** with **price drop up to 80%** for solar PV modules
- The fastest growth was in the **developing countries**

## Socio-Economic Value

- Socio-economic benefits are a **key drivers** for **renewable energy** deployment.
- Governments worldwide have enacted a variety of policy instruments and targets to mandate or promote the deployment of renewable energy.
- The importance of assessing the socio-economic impacts of renewable energy deployment is being increasingly recognized in international debates.
- Close coordination and engagement of stakeholders from different sectors is key for the success of both policy-making and policy implementation.
- Policies should be designed as part of a holistic framework that is consistent with and supports a well-defined national strategy.

## Socio-Economic example

TECHNOLOGY	(Jobs per newly installed MW)	O&M (Jobs per MW)	REGION	YEAR OF ESTIMATION
Wind, onshore	8.6	0.2	OECD countries (Average values)	Various (2006-2011)
	27.0	0.72	South Africa	2007
	6.0 <sup>a</sup>	0.50	South Africa	NA
	12.1	0.1	United States	2010
	8.8	0.4	Greece	2011
Wind, offshore	18.1	0.20	OECD countries (Average values)	2010
PV solar	17.9	0.30	OECD countries (Average value)	Various (2007-2011)
	69.1	0.73	South Africa	2007
	25.8	0.70	South Africa	NA
	20.0	0.2	United States	2011
CSP	18.0	1.33	South Africa	2007
	36.0	0.54	South Africa	NA
	7.0	0.6	Spain	2010
	19.0	0.9	Spain	2010

## Corporate Social Responsibility (CSR)

- A primary aim of the CSR is to ensure that the true value of each project far exceeds its direct investment and resource input.
- ACWA Power has a dedicated CSR Policy called “Our Commitments”
- We champion the **socio-economic development** of our host communities and nations by:
  - setting benchmarks and achieving world class performance standards that go beyond compliance;
  - proactively engaging with our stakeholders to deliver long term shared-value creation and prosperity opportunities;
  - building life-long partnerships to ensure the stewardship of our relationships and assets

## Egypt Renewable Energy Initiative

- Request for Prequalification (RFPQ) for 10x20 MW Kom Ombo PV project was issued on July 2013 which was changed recently to 1x200 MW.
- Kom Ombo Request for Proposal (RFP) was issued on March 2016.
- On 27<sup>th</sup> October 2014 Cabinet Decree was issued announcing the feed in tariff (FiT) Program in Egypt.
- FiT target is to install **2000 MW Solar** (PV) and **2000 MW Wind**.
- In **August 2015**, Request for Prequalification (RFPQ) was issued for a total of **550 MW of RE** “250MW Wind, 200MW PV and 100MW CSP” projects in West Nile.
- FiT solar projects will secure around **20,000 – 30,000 job opportunities** in areas with high level of unemployment.
- **Unemployment rate** is around **40%** in **Ben Ban, Aswan** due to limited government jobs and lack of investment in this area.



# ACWA Power in Egypt



## Introduction

- ✓ Focus on Egyptian Market since **2009** “Application for Pre-qualification of Dairut 2250 MW CC BOO”
- ✓ Qualified for 100 MW Wind and 50 MW PV under FiT in January 2015.
- ✓ Established our Office in Egypt in February 2015.
- ✓ Successful Bidder for Dairut 2250 MW CC BOO in March 2015.
- ✓ Signed two MoUs with the Egyptian Government during Sharm El Sheikh Egyptian Economic Development Conference in March 2015.

## Projects Under Development

- Dairut 2250 MW CC BOO, Behira Governorate:
  - ✓ Final phase of negotiations with EEHC/EETC.
  - ✓ Expected PPA signing by July 2016.
  - ✓ Planned Financial Closure by October 2016.
  - ✓ Planned COD in October 2019.
  
- 50 MW PV Project, Aswan:
  - ✓ Under Environmental and Social Studies.
  - ✓ Negotiations on-going with international lenders (IFC).
  - ✓ Planned Financial Closure by September 2016.
  - ✓ Planned COD in September 2017.
  
- 50 MW Wind Ras Gharib-1 Project, Red Sea Governorate:
  - ✓ Under Environmental and Social Studies.
  - ✓ Discussions on-going with lenders and governmental entities to identify the possible financial closure date.

## Projects Under Development

- 50 MW Wind Ras Gharib-2 Project, Red Sea Governorate:
  - ✓ Under Environmental and Social Studies.
  - ✓ Discussions on-going with lenders and governmental entities to identify the possible financial closure date.
  
- ACWA/Masdar MoU:
  - ✓ 2000 MW Renewable Energy (1500 MW PV and 500 MW Wind)
  - ✓ 2200 MW West Damietta Combined Cycle Power Plant
  - ✓ Environmental studies and surveys are on-going
  
- Safaga Coal Power Plant MoU:
  - ✓ 2000 MW Clean Coal Power Plant (Phase -1)
  - ✓ Environmental studies and surveys are on-going

## Corporate Social Responsibility (CSR in Egypt)

- The following initial training program will be launched in Summer 2016:
  - ✓ Training for Engineers from Ministry of Electricity on Solar (PV) systems design and installation.
  - ✓ Training for Engineers and Technicians from Aswan communities on Solar (PV) systems design and installation to support FiT program.

# ACWA Power in Morocco



### Morocco Renewable Energy Strategy

- Overall target of **2 GW** of **wind** power, **2 GW** of **solar** power and an increase to 2 GW of hydropower capacity by **2020**.
- The first wind farms are up-and-running at 600 MW, with over 1,000 MW in planning or construction.
- The first commercial concentrating solar power (CSP) Nooro I project was connected to the grid on February 2016.



NOORo I





<b>NOORo I CSP</b>	<b>Stand alone solar plant</b>
Offtaker	MASEN
Fuel	Solar Only
Power	160 MW (3 hours of Thermal Energy Storage)
Technology	Concentrated Solar Power – Parabolic Trough
Lenders	MASEN (on lending to SPC loans from IFIs)
EPC Contractor	ACCIONA, SENER, TSK
O&M	NOMAC
Contract Type & Term	PPA (25 years)



In 4<sup>th</sup> February 2016, NOOR I was connected to the grid in the presence of Moroccan King Mohammed VI and the French Environment Minister Ségolène Royal.





# NOORo II



## NOORo II Project Key Data:

- Project is under construction.
- Same technology as Noor I.
- 7.2 hours of thermal energy storage.

NOORo II CSP	Stand alone solar plant
Offtaker	MASEN
Fuel	Solar Only
Power	200 MW (7.2 hours of Thermal Energy Storage)
Technology	Concentrated Solar Power – Parabolic Trough
Lenders	MASEN (on lending to SPC loans from IFIs)
EPC Contractor	SENER & SEPCO III
O&M	NOMAC
COD	27 August 2017
Contract Type & Term	PPA (25 years)



# NOORo III

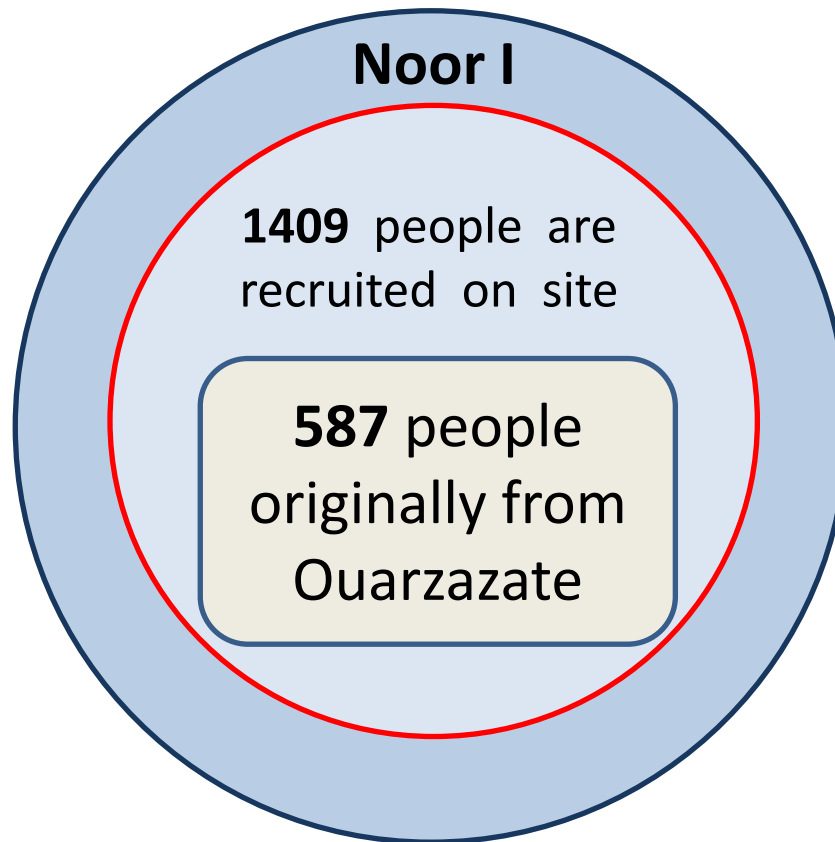


### NOORo III Project Key Data:

- Project is under construction.
- Central Tower Receiver Technology.
- 7 hours of thermal energy storage.

NOORo III CSP	Stand alone solar plant
Offtaker	MASEN
Fuel	Solar Only
Power	150 MW (7 hours of Thermal Energy Storage)
Technology	Concentrated Solar Power – Solar Tower
Lenders	MASEN (on lending to SPC loans from IFIs)
EPC Contractor	SENER & SEPCO III
O&M	NOMAC
Contract Type & Term	PPA (25 years)

## Socio-economic benefits in Morocco



## Socio-economic benefits in Morocco

### Noor II and III

#### Construction Phase

**2,000 to 2,500**  
direct jobs

**Thousands of**  
indirect jobs

**Labors** will essentially  
be recruited **locally**

#### Operation Phase

between **400** and  
**500** employees

**developing industrial activities** in the region  
through various services  
such as **maintenance,**  
**security, industrial**  
**cleaning**



## Socio-economic benefits in Morocco

### Noor II and III

- The technologies proposed under the project will help to develop cutting-edge national expertise.
- Since women participate in all types of economic and social activities, the creation of new jobs will also benefit the female population.
- **Socio-economic fallout** from this project:

**Training and transfer of solar  
energy technology**

## ACWA Power Corporate Social Responsibility (CSR) in Morocco

### Welding training in partnership with OFPPT - Pictures



Thank you

