

SOCIO-ECONOMIC BENEFITS OF NOOR OUARZAZATE SOLAR COMPLEX



masen
endless power for progress

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5 February 2019

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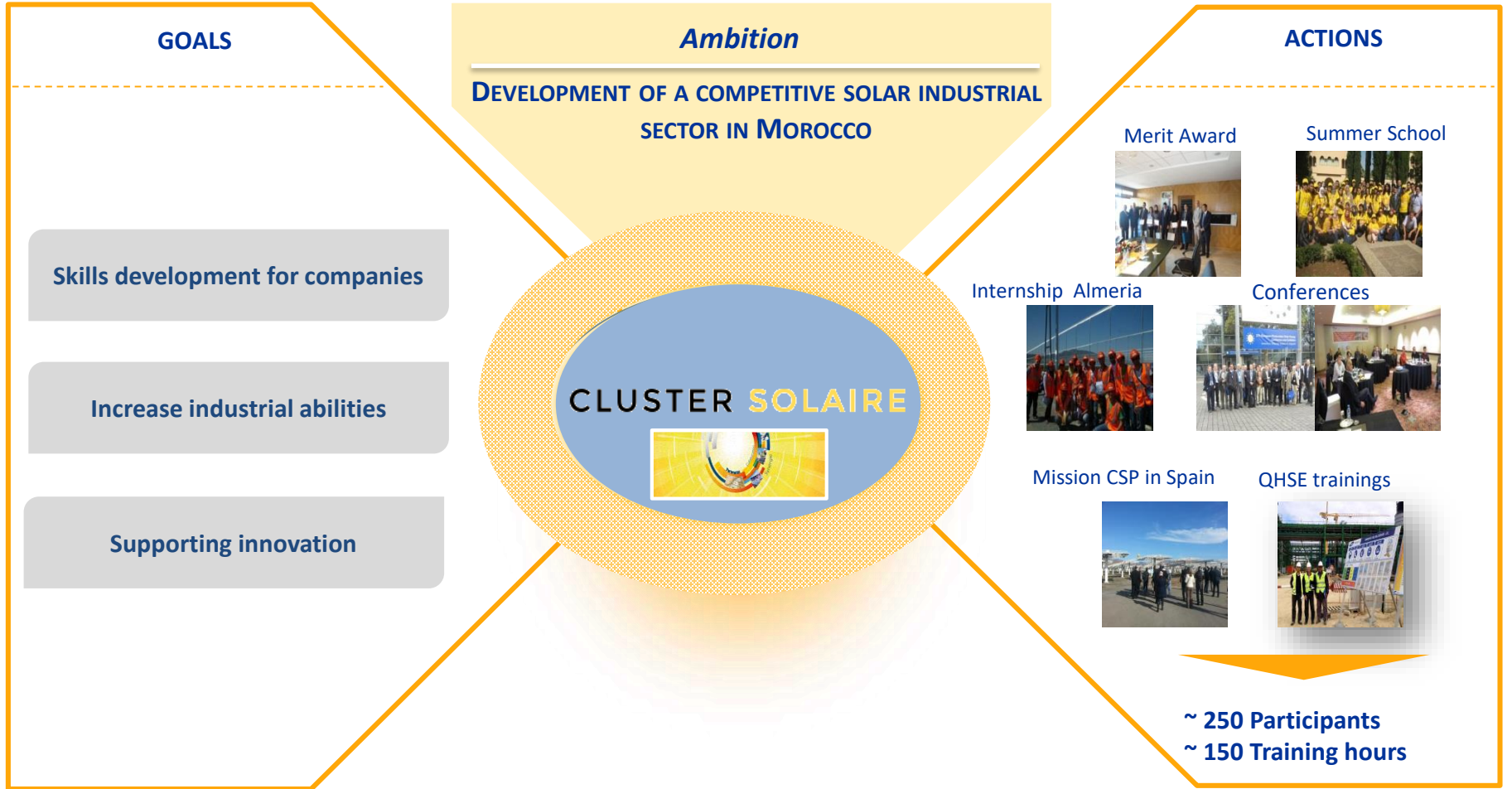
MASEN: AN INTEGRATED APPROACH OF PROJECT DEVELOPMENT



An integrated vision applied to our projects

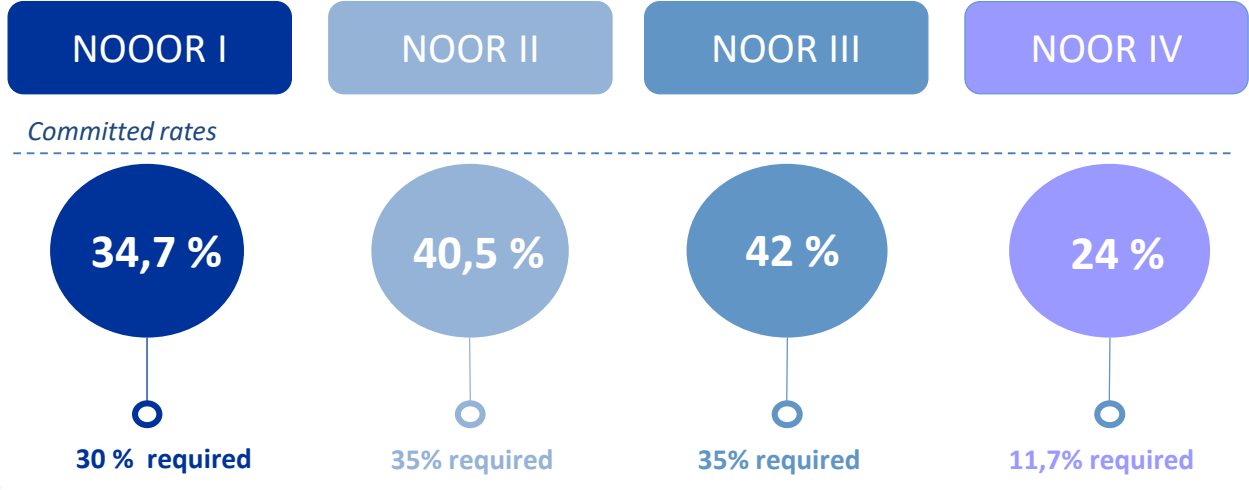
NOOR OUARZAZATE: INDUSTRIAL INTEGRATION

SOLAR CLUSTER IN 2014 TO SUPPORT AN ECOSYSTEM DEDICATED TO SOLAR ENERGY AND ENCOURAGE THE INDUSTRIAL INTEGRATION

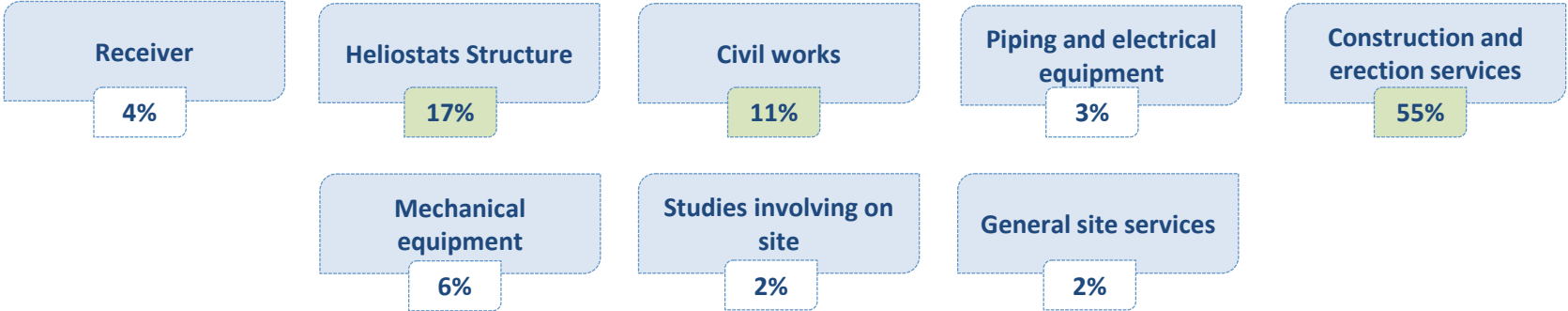


NOOR OUARZAZATE: INDUSTRIAL INTEGRATION

A SIGNIFICANT INDUSTRIAL INTEGRATION ON VARIOUS POWER PLANTS FOR NOOR OUARZAZATE



ALLOWING MOROCCAN COMPANIES TO DEVELOP THEIR SKILLS RELATED TO TECHNOLOGY AND CONSTRUCTION SERVICES IN AN INTERNATIONAL STANDARDS PROJECTS



% Noor III



NOOR OUARZAZATE: INDUSTRIAL INTEGRATION

SUCCESSFUL INDUSTRIAL INTEGRATION FOR MOROCCAN COMPANIES



MADE

GRUPO
INVERTARESA

- Creation of a joint venture between the Moroccan group DeltaHolding and the Spanish group Invertaresa. The factories are located in Kenitra and Skhirate
- MADE manufactured part of the steel structure for solar collectors in NOORo I and NOORo II, and the steel structure for the heliostats in NOORo III



دلاتر ليفي المغرب
DELATRE LEVIVIER MAROC

- DLM erected the two molten salt tanks of the thermal energy storage system of NOORo I
- DLM was also involved (as part of a consortium) directly with Masen for the construction of the water intake facility project.

PROMINOX

your competitive advantage!

- Prominox erected the four molten salt tanks of the thermal energy storage system of NOORo II
- Prominox erected the two molten salt tanks of the thermal energy storage system of NOORo III
- They also entered into partnership with Sener for the manufacturing of Noor Ouarzazate III solar receiver and other associated vessels. This partnership has led to the acquisition of a very specialized expertise on the welding of the solar tower receiver



NOOR OUARZAZATE: EMPLOYMENT

NOOR OUARZAZATE I

Total number of employees on site	Total number of Moroccan employees	Local employees
1 906	1 471	659

77%

MOROCCAN EMPLOYEES

On which

45%

LOCAL EMPLOYEES *

NOOR OUARZAZATE II

Total number of employees on site	Total number of Moroccan employees	Local employees
4 063	2 723	927

67%

MOROCCAN EMPLOYEES

On which

23%

LOCAL EMPLOYEES *

NOOR OUARZAZATE III

Total number of employees on site	Total number of Moroccan employees	Local employees
2 524	1 695	797

67%

MOROCCAN EMPLOYEES

On which

32%

LOCAL EMPLOYEES *

NOOR OUARZAZATE IV

Total number of employees on site	Total number of Moroccan employees	Local employees
656	541	386

82%

MOROCCAN EMPLOYEES

On which

59%

LOCAL EMPLOYEES *

NOOR OUARZAZATE: EMPLOYMENT

EMPLOYMENT PROFILES CREATED DURING THE CONSTRUCTION

Transverse	Gear driver	Timberman	Crane operator	Electrician	Quality controller
	Builder	Form worker	Coppersmith	Help topographer	Responsible HSE
	Painter	Pipefitter	Specialized worker	Laboratory technician	Work manager
	Scrap dealer	Moulder	Storekeeper	Mechanic	Site manager
	Plumber	Welder	Mechanic	Fitter (mirrors, structure)	Supervisor engineer
	Catering	Security agent	Logistics	Administration	

46%

LOW OR UNQUALIFIED EMPLOYMENT *

54%

QUALIFIED EMPLOYMENT**

EMPLOYMENT PROFILES CREATED DURING THE OPERATION PHASE

Cleaning agents	Operators	Technicians	Administrators	Engineers
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21%

LOW OR UNQUALIFIED EMPLOYMENT *

79%

QUALIFIED EMPLOYMENT **

* Without a bachelor's degree or bachelor level
 ** bachelor's degree + 2 and bachelor's degree + 5

NOOR OUARZAZATE: EMPLOYMENT

MASEN, OPFPT* AND SENER SIGNED A TRAINING PARTNERSHIP FOR 100 PERSONS FOR SOLAR THERMAL ENERGY

96 STUDENTS

(86 from Ouarzazate, 5 from Ghassate, 5 Others)

5 TRAINERS

7% GIRLS

These trainings allowed to develop careers for ...

- Electrical Technicians
- Instrumentation and Control Technicians
- Mechanical Technicians
- Control Room Operators
- Solar Field Operators
- Mirror Cleaning Operators

... and resulted in a recruitment for ...

- 50 Candidates from Ouarzazate and Ghessate for NOORo II and NOORo III O&M activities

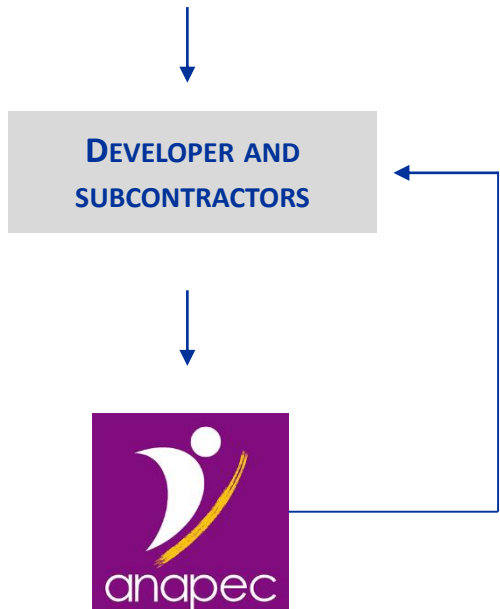


* Office of Professional Training and Work Promotion



NOOR OUARZAZATE: EMPLOYMENT

A FACILITATOR ROLE ALLOWING ANAPEC* TO BETTER MANAGE LOCAL RECRUITMENT WITH DEVELOPERS



- Orientation of the contracting companies and their subcontractors to ANAPEC to submit their job offer

- Submit their job offers at ANAPEC level

- Identify job applications and suggest potential candidates to contracting firms
- Provides job seekers with a training cell

Parallel actions are carried out to provide technical training sessions to enable young people in the region to qualify for the sector

NOOR OUARZAZATE: LOCAL DEVELOPMENT

A LOCAL DEVELOPMENT STRATEGY HAS MADE TO OPEN UP VILLAGES AND IMPROVE THE SOCIAL FRAMEWORK FOR POPULATIONS

STRATEGIC AXES

Development and animation of territories



AGRICULTURE
ENTREPRENEURSHIP
EMPLOYMENT

Improvement of the social framework of the population



HEALTH
EDUCATION

Opening up of the territories



BASIC INFRASTRUCTURE

MAIN OBJECTIVES



Contribute to the local development of areas where the energy projects are implemented

Reduce poverty, access to infrastructure and sustainable and shared economic growth

Conduct proactive actions for local needs populations

NOOR OUARZAZATE: LOCAL DEVELOPMENT

POTABLE WATER CONNECTION / ROADS CONNECTION



- Reconstruction of a water pipeline at Tasselmant village
 - Potable water conveyance in Ghassate villages
 - Equipment of a well with solar pumping system in Tasselmant village
-
- Contribute to the improvement of living conditions through potable water conveyance
 - Improve the local agriculture by means of irrigation and consequently have a strong positive impact on incomes
-
- 26 villages
 - 5800 persons
 - 834 households



- Construction of 18.5 km of roads (14 km heading to Tasselmante and 4.5 km from Tasselmante to Aguedim)
-
- Improve access to of equipment and basic auxiliary services for the population

NOOR OUARZAZATE: LOCAL DEVELOPMENT

ELECTRIFICATION



- Installation of 18 solar street lights in Ghasstate schools
 - Distribution of 26 HVAC devices to different public services in Ghasstate (primary and secondary schools, health center...)
 - Installation of PV panels at the rooftop of a nursery for abandoned children in Ouarzazate
-
- Reinforce the security of the students and schools
 - Improve daily living conditions for local population
 - Improve the reception conditions of local population
 - Reduce the operational costs of these institutions
-
- 8 schools and 1 orphanage
 - 5098 persons including students and kids

NOOR OUARZAZATE: LOCAL DEVELOPMENT

INCOME GENERATING ACTIVITIES



- Improvement of agriculture performances:
 - Distribution of fertilizers and trainings during annual crop operations
 - Rehabilitation of palms
 - Sheep breeding operations
 - Qualified training sessions in collaboration with the ministry of crafts in traditional sewing, embroidery, art ironwork
 - Support for a business creation by young locals from Ghassate to implement a biological protection against erosion around the Noor Ouarzazate complex
 - Support to Ghassate female community network for providing catering services during the annual medical caravan
-
- Foster the income generating activities with focus on the integration of women and young persons
 - Mobilize the local skills
 - Ensure additional income to local families
 - Knowledge transfer to entrepreneurs
-
- 3749 farmers / 41 craft persons / 16 women / 6 young men
 - 487 families



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