



The **SOLAR BREEDER** Initiative

Linking renewable energies to economic growth

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19 January 2015
Abu Dhabi

NOVEMBER THE 5th IN CASABLANCA, MOROCCO


Kenergia signed a Memorandum of Understanding with the **Société d'Investissement Energétiques (SIE)** to develop a new project called «Solar Breeder». The project aims to **develop and manage an industrial district in Morocco for the production of the whole products and services of the PV technology value chain.**

- The district will enclose the **top quality Italian SMEs** in the PV sector
- All its electricity needs will be supplied by its **own PV + storage plant**
- It will **train local engineers and managers** in coordination with Italian and Moroccan Universities
- Solar Breeder will develop **its own R&D activities**
- Highest **local content** when participating to bids and tenders
- **Benefits and spillover effects** for the Moroccan economy



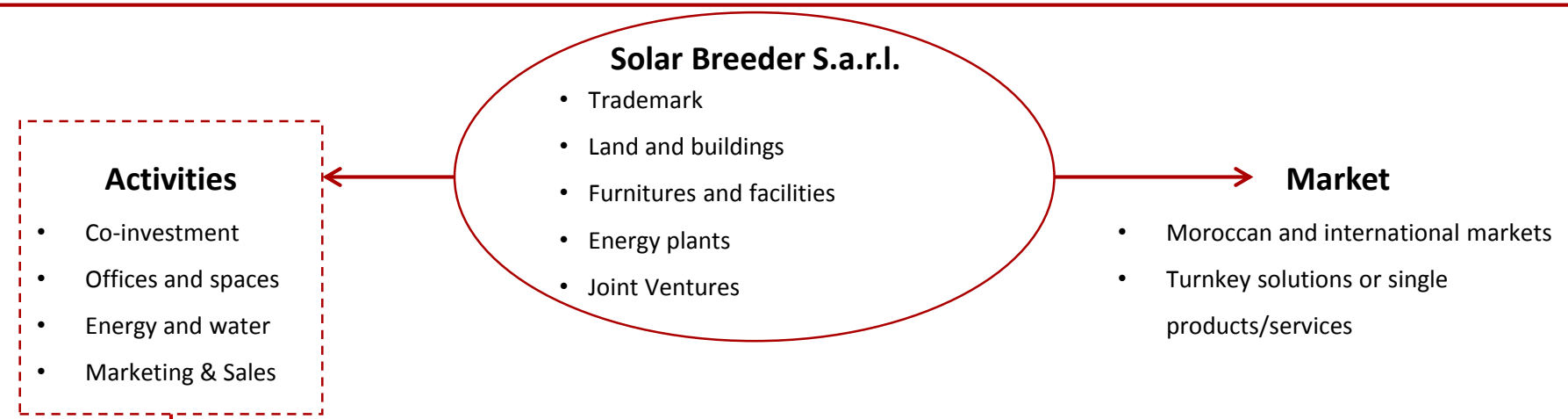
HOW SOLAR BREEDER WILL LOOK LIKE



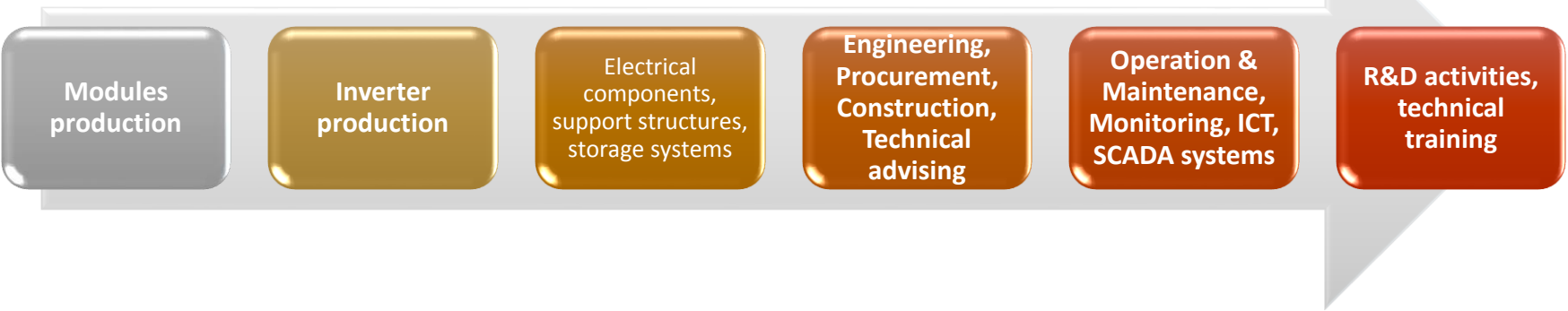
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شركة الإستثمارات الطاقية
SOCIÉTÉ D'INVESTISSEMENTS ÉNERGÉTIQUES

HOW THE SOLAR BREEDER WORKS



The Value Chain (local operative companies)



SOLAR BREEDER IN NUMBERS

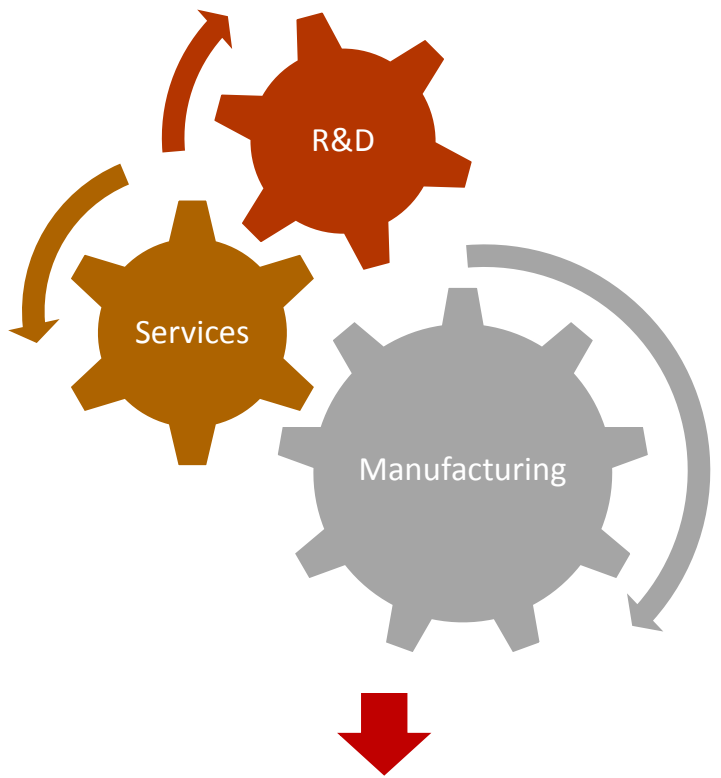
- 50 to 100 MW
 - Annual PV turnkey solutions capacity
- \$31 billion
 - First two years' expected investment
- 125 to 250
 - Local employees
- 7 MW
 - Nominal power of PV plant
- 1 MW-1MWh
 - Storage system

The investment









Total investment	\$31 billion
Of which real estate	\$6 billion
Energy plant	\$12 billion
Machineries	\$8 billion
Other	\$5 billion
Expected IRR	18%
NPV	\$14 billion

PRODUCTS AND SERVICES FOR MOROCCAN AND INTERNATIONAL MARKETS



STATE OF THE ART TURNKEY SOLUTIONS

-  Tender plants
-  HV/MV/LV connected private plants
-  PV plants with storage
-  Hybrid PV and solar plants
-  BIPV plants
-  PV pumping irrigation solutions

WHY THIS PROJECT?

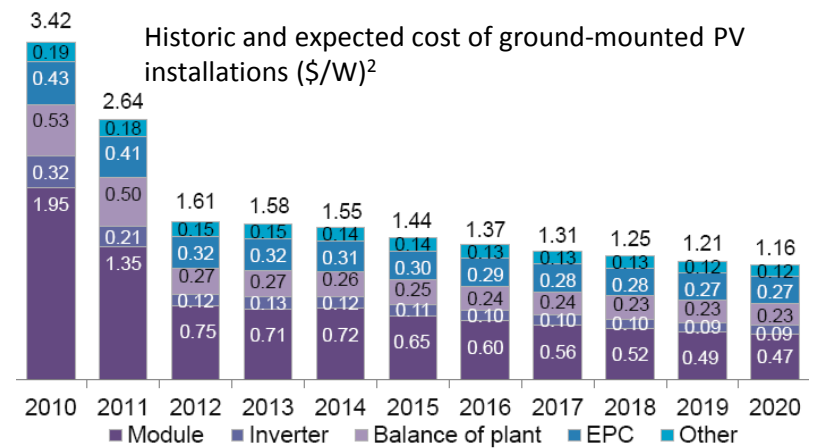
There are **many synergies** between countries where renewable energies (RE) are «mature» (e.g. European countries such as Italy) and countries approaching clean energies now only (e.g. some MEA countries such as Morocco).

Synergies	RE-developed countries	RE-developing countries
RE Industry	Mature	Fragmented
Policies for RE development	Many years of history	No history to learn from
Economic growth	Stable	Fast growing
Energy demand	Stable or declining	Fast growing
Natural resources	Limited new best-placements	Generally higher

RENEWABLE ENERGIES IN DEVELOPED COUNTRIES

Europe alone have paid around \$460 billion to develop renewable energies in the past years¹. This policies have created 2 main benefits (apart from those directly related to RES development):

1. The **cost of technologies** has reduced dramatically over the past years, leading to the opportunity to develop clean energies without any financial support from the Governments (grid parity);
2. The **development of an industrial sector** that has gained years of experience in production of components, installation, management and control of RES plants.



1 - Source: European Commission, 2014
 2 - Source: Bloomberg New Energy Finance, 2014

PV COMPONENTS TO BE MANUFACTURED IN MOROCCO



Standard module



Waterproof module



Coloured cell



Glass/Glass module



Clear backsheet



Hybrid solar panel



Three-Phase and Mono-Phase String Inverter LV grid connected



Three-Phase modular Inverter for LV/MV applications with external transformer



Station ready to be transported and installed on-site. Ready to go plug and play solution

PV SERVICES SUPPLIED BY SOLAR BREEDER COMPANIES



HV/MV/LV stations



Concentration Photovoltaics



Due diligences



SCADA Systems



Control Rooms



Remote plant monitoring



FROM MOROCCO TO A LARGER INTERNATIONAL INITIATIVE

Solar Breeder International is the holding company that will develop and coordinate all the «Solar Breeder» projects in **different countries**.

Each Solar Breeder project will be constituted by three main phases:

1. **Selection of partners and feasibility study**

Operative companies in each country will be selected according to their quality and their contribution to the local investments and employment creation.

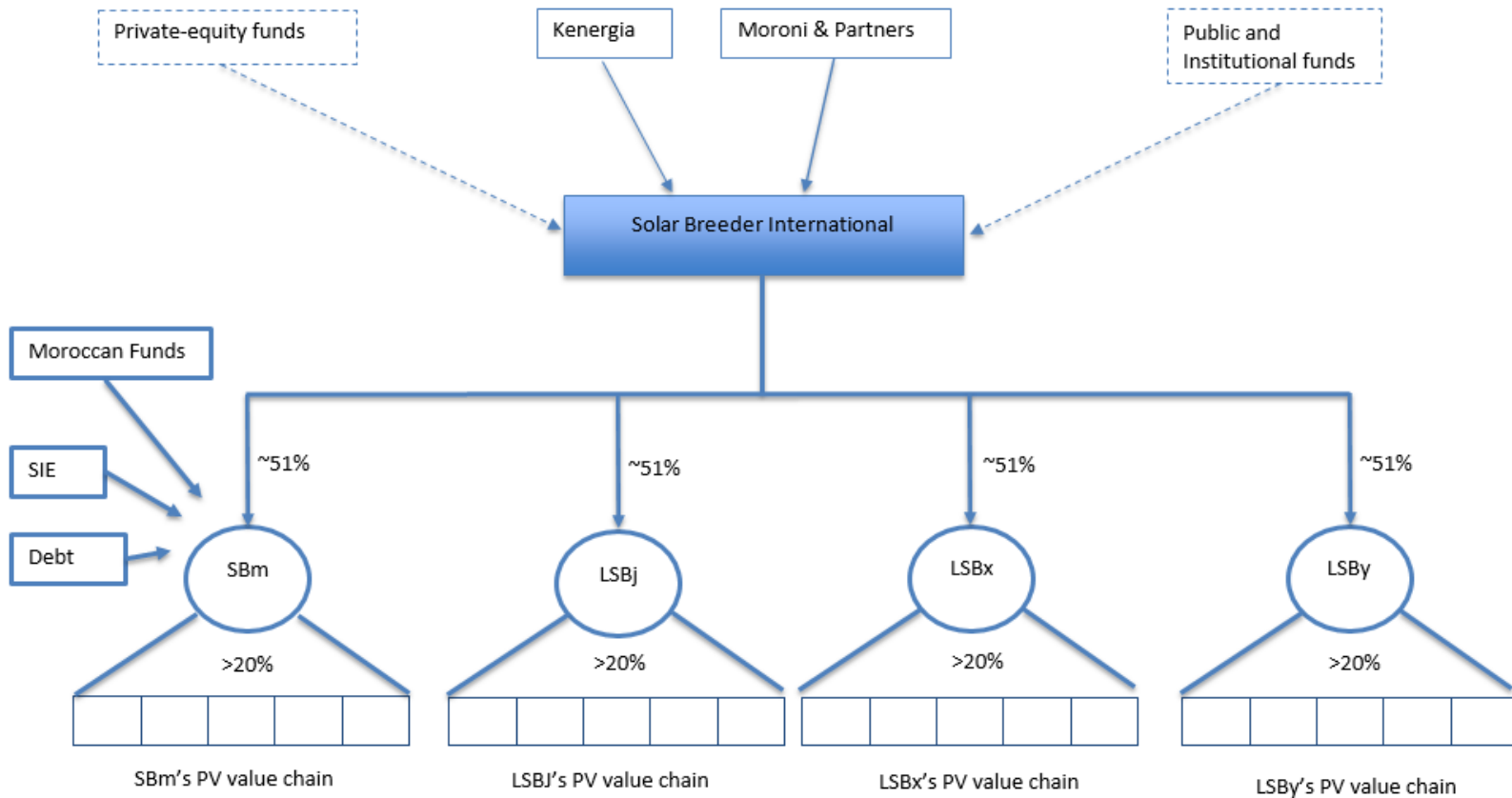
2. **Development of the local Solar Breeder**

Local company constitution, binding investment and financing agreements.

3. **Management of the Solar Breeder**

Development and management of the industrial district, providing the necessary services to operative companies.

STRUCTURE OF SOLAR BREEDER INTERNATIONAL



WAY FORWARD

First half
2015

- End of «phase 2» for the Moroccan Solar Breeder
- Fund-raising for the Solar Breeder International

Second half
2015

- Beginning of the construction of the Moroccan district and PV plant + storage

2016

- End of the development of the first Solar Breeder
- First products and services sold in Morocco
- Beginning of phase 1 for the next Solar Breeder

THANK YOU FOR YOUR ATTENTION

For more information

www.solarbreeder.com