Solar Photovoltaics for Africa
The CTCN inception

Using the power of the sun to drive Africa’s renewable energy

Martin Spath
CTCN Regional Forum for NDE’s
Safari Park Hotel venue Nairobi, Kenya
Sept. 27 to 29th
Ours is a special age...

*From solar to solar*
Game-changing price reduction of solar energy

Welcome to the Lightning ride

www.bloomberg.com/news (29 October 2014)
Lowest cost solar electricity 2015: 0.05 US$/kWh
ECN, member of the Technical resource pool of the Consortium
IRENA Africa 2016 Energy landscape

Figure 1 | Africa’s energy landscape: Present*

*Note: statistics refer to 2013, except for access to electricity which refers to 2012.
IRENA Africa 2030

2.1 REMAP 2030 FOR AFRICA

Figure 5: Modern renewable energy use in 2013 (above) and 2030 (below)

2013
11.8 EJ/yr
Modern renewable energy
Firewood
50% (used in efficient cookstoves)
Charcoal
4% (used in efficient cookstoves)

2030
9 EJ/yr
Modern renewable energy
Firewood
43% (used in efficient cookstoves)
Charcoal
5% (used in efficient cookstoves)
Transport
2%
Agenda inception Algeria (CTCN task)

- The Algerian case for solar PV
- The key elements of the Response plan
- Outlook and conclusions
The Algerian case for solar PV

- Algeria has vast solar potential
- And has also the ambition to realize the implementation in-house

Source: Shariket Kahraba wa Taket Moutadjadida
The overall plan implies implementation of over 5,000 MW solar PV until 2025.

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<tbody>
<tr>
<td>PV</td>
<td>343</td>
<td>300</td>
<td>400</td>
<td>400</td>
<td>400</td>
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<td>800</td>
<td>800</td>
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<td>Wind</td>
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<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>400</td>
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<td>Total</td>
<td>343</td>
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<td>1200</td>
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Total: 5843 MW (69%) for PV and 2600 MW (31%) for Wind.
Key elements of the Response plan

- **Strong focus on the implementation process**

- **With as key ingredients:**
  - Local production of solar cells & modules (Condor)
  - Basis design, with grid connection, Balance of system Components
  - Set-up of a Plan for engineering, procurement and construction (EPC)
  - A project organisation with a local taskforce (Condor, CDER)
  - Organisation as a example project in Algeria, suitable for replication
  - Assistance by ECN for key steps in the EPC execution

- **Detailed project plan to be drafted**

- **With listing of required training**

- **And a side program on desert proof PV systems**
Scope

- Strongly linked to implementation of 1 MWp PV solar system
- Located in new town (Boughzoul) with strong ‘Smart City ‘ambitions
- Including the EPC process (Engineering-Procurement-Construction)
- To build up local expertise in this field
- ECN delivers overall implementation plan and required assistance
- Deliver a model for replication
- In view of the ambitious national program regarding PV technology
### Elements of the Response plan

**time 12 weeks**

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<th>Activity</th>
<th>Week</th>
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<td>1</td>
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<tr>
<td><strong>Activity 1</strong> – inception mission and report</td>
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<td>1.1 – project assessment</td>
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<td>1.2 – gap analysis</td>
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<td>1.3 – R&amp;D strategy</td>
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<td>1.4 – project team</td>
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<td>1.5 – institutions and policy</td>
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<td>1.6 – concept sketch</td>
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<td><strong>Activity 2</strong> – scoping and design</td>
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<td>2.1 – basis of design</td>
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<td>2.2 – full assistance plan</td>
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*In Tipaza (CDER), Sept. 5 & 6*

*At Condor, Okt. 3-5*
Project output

• Delivery of full assistance plan → all tasks & elements to realize 1 Mwp plant

• Establish basis for capacity building along EPC execution

• Provide basis design for the 1 MWp facility

• Analyze required conditions for grid connection

• Define long term support to CDER to execute replication projects
Conclusions

• Condor the private entity is financing the 1 MW plant

• Condor delivers PV panels from own production

• Condor can scale up the plants and sells solar electricity

• Starting a market in Algeria without waiting for the government

• CDER (Institute) provide the blue prints for the Solar plant to third parties in Algeria
Thank you for your attention

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