“Developing RE investments in the absence/lack of adequate policy and regulatory environments: Lessons learnt from previous experiences”

A presentation by:

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Desert Technologies

In occasion of:

Regional Workshop on: “Developing a Regional Renewable Energy Investment Pipeline”

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Organized by:
Synergies, Integration and Hybrid technologies are at the core of our strategy

Integrated Renewable Energy and Clean Water Business

Development  Manufacturing & Assembly  Engineering, Procurement & Construction  Operation & Maintenance

Each division feeds into the others, ensuring a commitment to excellence at every stage
DT’s work with the IFC in PV, the gold standard for emerging markets project finance, has given us a rigorous approach.

<table>
<thead>
<tr>
<th>Project</th>
<th>Size</th>
<th>Role</th>
<th>Country</th>
<th>Financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falcon</td>
<td>21 MWac</td>
<td>Developer, EPC Investor</td>
<td>Jordan</td>
<td>[IFC Logo]</td>
</tr>
<tr>
<td>Shamsuna</td>
<td>10 MWac</td>
<td>EPC</td>
<td>Jordan</td>
<td>[IFC Logo]</td>
</tr>
<tr>
<td>ARC</td>
<td>50 MWac</td>
<td>Developer, EPC Investor</td>
<td>Egypt</td>
<td>[IFC Logo]</td>
</tr>
<tr>
<td>Winnergy</td>
<td>20 MWac</td>
<td>Developer, EPC Investor</td>
<td>Egypt</td>
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There are no shortcuts: the absence of policy or adequate regulation does not change the developer’s role

If anything, it is harder since the responsibility lies with the developer to ensure that the correct standards are being met.
The Power Purchase Agreement the most important element of any bankable renewable energy deal

- Take and Pay (deemed delivery in case of curtailment)
- Certainty of tariff
- Foreign exchange protection
- Convertibility and exportability of capital
- Change in Law/ Change in Tax Protection
- Force Majeure Provisions
- Assignment to Lenders
- Termination and Termination Payments
- Off-taker Liquidity Guarantee / Sovereign Guarantee
- International Arbitration / Dispute Resolution
### Policy instruments for promotion of RE

<table>
<thead>
<tr>
<th>Name of Instrument</th>
<th>Primary responsibility</th>
<th>Objective of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal interventions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect Taxes, Exemption from VAT/ Sales Tax &amp; Electricity Duty, Exemption from Import/ Excise, Sovereign Guarantee, etc.</td>
<td>Ministry of Finance (MOF), Ministry of Energy (MOE)</td>
<td>Lower the gap between RE based power and conventional power</td>
</tr>
<tr>
<td>Direct Tax exemptions/ Tax Holidays</td>
<td>MOF</td>
<td>Provide direct tax exemptions which incentivize RE based power generation</td>
</tr>
<tr>
<td>Carbon Trading</td>
<td>Ministry/Authority of Environment</td>
<td>Provide a financial incentive for carbon mitigation, thereby encouraging clean power generation</td>
</tr>
<tr>
<td>State RE Policies (including issues such as development of transmission networks to connect RE projects, and wheeling &amp; banking, Third Party Sale)</td>
<td>MOE</td>
<td>Provide a policy framework for encouraging RE investment in the state</td>
</tr>
</tbody>
</table>

### Regulatory framework for promotion of RE

<table>
<thead>
<tr>
<th>Type of regulation</th>
<th>Primary responsibility</th>
<th>Objective of the regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff related</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed in Tariffs (FIT)/ Preferential Tariffs</td>
<td>MOE, Electricity Regulator (ER), Transmission (T)</td>
<td>Provide an assured price for RE projects feeding into the grid</td>
</tr>
<tr>
<td>Terms and conditions for determination of tariff</td>
<td>MOE, ER, T</td>
<td>Provide an assured price for RE projects feeding into the grid</td>
</tr>
<tr>
<td>Renewable Purchase Obligations/ Renewable Portfolio Standards</td>
<td>ER</td>
<td>Provide a target of RE share in power generation and distribution to encourage RE generation</td>
</tr>
<tr>
<td>Regulations addressing systemic issues such as open access, development of transmission networks to connect RE projects, and wheeling &amp; banking, Third Party Sale</td>
<td>MOE, ER, T</td>
<td>Facilitate development of RE plants, and allow RE generators flexibility in generation and sale of power</td>
</tr>
</tbody>
</table>
A key challenge is getting all stakeholders to collaborate and cooperate without a framework

**Lenders**
- Require a Bankable Project technically and contractually
- Performance standards must be met
- Social Impact in case of DFIs

**Local community**
- Landowners need reasonable price expectations
- Must see benefit of the project
- Project must be a “good neighbor”
- Should provide employment, but with realistic expectations

**Off-taker**
- Must have grid capacity
- Interconnection conditions need to be clear
- Must agree to key elements of a bankable PPA (see next slide)

**Ministry of Finance**
- Often needs to provide liquidity and/or support to Off-taker
- May need to sign a Sovereign Guarantee

**Environment Agency**
- Must sign off on land use and environment impact
- Archeological Impact
- Flora/Fauna
- Decommissioning plan at the end of the project life

…and of course, we all have to satisfy our shareholders!
The mix of high difficulty with great opportunity in Africa is creating a boom in innovation.

In nations where the business model is not imposed upon you, the developer must be creative in finding the best solution to suit the market.

Disruptive Technologies Leapfrogging “Old” Electric Grid

Remote Monitoring

Data Management

Efficient Devices

Delivery Platform
Distributed Energy Service Companies (DESCOs) and Smart Mini-Grids

Target Population
1.2 billion low-to-middle income off-grid customers and over 1 billion consumers with unreliable or insufficient grid-access in growing Emerging Markets
Senegal: example project overview

Multi utility-scale PV projects in Senegal with 25 years PPA signed with the Minister of Energy at a price of EUR 0.20 per kwh

- **Phase 1** January 2018
  - 9 MWp
  - 65 villages
  - 70,000 people
  - USD 34m investment

- **Phase 2** March 2018
  - 16 MWp
  - 116 villages
  - 125,000 people
  - USD 60m investment

- **Phase 3** June 2018
  - 15 MWp
  - 105 villages
  - 115,000 people
  - USD 56m investment

40 MWp
286 Villages
310,000 People
USD 150m Investment