BDL Green Incentives
Green Incentives Structure

Beneficiary → Engineering Consultant → Commercial Bank → Central Bank of Lebanon (BDL) → Technical Report by LCEC

Unofficial Technical Assistance by LCEC
Cost of Green Investments ≤1%
BDL Green Incentives

Up to 14 Years Maturity
Including up to 4 Years Grace Period
National Energy Efficiency and Renewable Energy Action

- Energy Efficiency measures.
- Renewable Energy base, i.e. Solar, Geothermal, Hydro and Wind.
Mechanism

Grant for EE and RE
Italian Ministry for Environment, Land and Sea
(December 2016)

€5,000,000

Maximum €2,000,000 NEEREA loan
60% of the Loan to be used in Italian Technology
Mechanism

€80m. EE Loan

Productive Sectors

12 to 14 Yrs. maturity

≈ 1% interest rate
Certified Green Buildings

- The amount of the Energy loan extended would be based on the following:

<table>
<thead>
<tr>
<th>Nature of Project</th>
<th>Rating</th>
<th>Energy Loan Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Project</td>
<td>Not rated</td>
<td>EE &amp; RE Cost</td>
</tr>
<tr>
<td></td>
<td>Certified</td>
<td>15% of Total Project Value</td>
</tr>
<tr>
<td></td>
<td>Silver</td>
<td>25% of Total Project Value</td>
</tr>
<tr>
<td></td>
<td>Gold</td>
<td>35% of Total Project Value</td>
</tr>
<tr>
<td></td>
<td>Platinum</td>
<td>45% of Total Project Value</td>
</tr>
<tr>
<td>Existing Project</td>
<td>Rated or Not Rated</td>
<td>EE &amp; RE Cost</td>
</tr>
</tbody>
</table>

The certification system developed by LEED is adopted, or equivalent classifications from other internationally recognized systems.
Certified Green Buildings

- New measures to be applied according to Energy/Atmosphere and Water Efficiency:

<table>
<thead>
<tr>
<th>Nature of Project</th>
<th>Rating</th>
<th>Energy Loan Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEED for New Construction</td>
<td>Not rated</td>
<td>EE &amp; RE Cost</td>
</tr>
<tr>
<td>LEED for Core and Shell</td>
<td>Certified</td>
<td>15% of Total Project Value</td>
</tr>
<tr>
<td>LEED for Schools</td>
<td>Silver</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silver Plus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gold</td>
<td></td>
</tr>
<tr>
<td>LEED for Hospitality</td>
<td>Silver Plus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gold</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gold Plus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Platinum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Platinum Plus</td>
<td></td>
</tr>
<tr>
<td>Existing Project</td>
<td>Rated or Not Rated</td>
<td>EE &amp; RE Cost</td>
</tr>
</tbody>
</table>

*Other certification systems would be introduced as an addition to the acceptable certifications by BDL.*
Results
Results

Number of Projects by Technology

- PV: 393 (63%)
- SWH: 65 (10%)
- Biomass Boiler: 19 (3%)
- LED: 44 (7%)
- Building Envelope: 24 (4%)
- Other: 47 (7%)
- Green Certified Buildings: 35 (6%)
Projects

- More than **480** loans approved with a total of **322 million USD**
- Around **51** projects in the pipeline with a total of **70 million USD**
- **338** PV projects of a total installed capacity of **13.5 MWP**
• NEEREA helped create more than 10,000 direct and indirect jobs in the sustainable energy sector in Lebanon

• The number of companies working in the field of solar water heaters rose from 25 in 2010 to more than 170 companies today.

• The number of companies working in the energy audits business rose from 4 in 2010 to more than 30 companies now.

• The number of companies working in solar photovoltaic sector increased from 5 in 2010 to more than 70 companies today.
NREAP: 12% by 2020 (1.7 Billion USD)
# RE Technologies

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MW</td>
<td>GWh</td>
<td>ktoe</td>
</tr>
<tr>
<td>Wind</td>
<td>200</td>
<td>595.7</td>
<td>128.7</td>
</tr>
<tr>
<td>PV, CPV</td>
<td>150</td>
<td>240.0</td>
<td>51.8</td>
</tr>
<tr>
<td>Distributed PV</td>
<td>100</td>
<td>160.0</td>
<td>34.6</td>
</tr>
<tr>
<td>CSP</td>
<td>50</td>
<td>170.6</td>
<td>36.8</td>
</tr>
<tr>
<td>SWH</td>
<td>1,053,988 m²</td>
<td>685.5</td>
<td>148.1</td>
</tr>
<tr>
<td>Total Hydro</td>
<td>331.5</td>
<td>961.9</td>
<td>207.8</td>
</tr>
<tr>
<td>Geothermal</td>
<td>1.3</td>
<td>6.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Bioenergy</td>
<td>--</td>
<td>771.5</td>
<td>166.6</td>
</tr>
<tr>
<td>Total RE</td>
<td></td>
<td>3,591.2</td>
<td>775.7</td>
</tr>
<tr>
<td>Total Primary Energy Demand</td>
<td></td>
<td>29,578.7</td>
<td>6,389.0</td>
</tr>
<tr>
<td>Target</td>
<td></td>
<td></td>
<td>12.1</td>
</tr>
</tbody>
</table>
The Lebanese Environmental Action (LEA)
For Water, Air, and the Environment
What is LEA?

LEA is a national financing mechanism by the Central Bank of Lebanon with the technical assistance of LCEC.

LEA allows private sector entities to apply for subsidized loans for any type of environmental conservation measure related:

- Water
- Air Quality
- Resource Conservation
- Environment
What are the Environmental projects covered by LEA?

- Organic Farming
- Ecotourism
- Landscape
- Green Roofs
- Green Walls
What are the Environmental projects covered by LEA?

- Stones cladding
- Roof Tiling
- Recycling and Solid Waste Treatment
Eligible Measures for Water Conservation

- Rainwater Harvesting
- Efficient Irrigation
- WWTP
Sustainable Landscaping

Sustainable Agriculture Practices

Sustainable Water Fixture
LEA: Requirements by Measure

**Landscaping**
- Native Plants
- Low water requirements/ Drought Resistant Plants

**Efficient Irrigation**
- Drip standard, drip pressure compensating, fixed spray, micro spray, rotor
- Achieve 30% water savings from BAU

**WWTP**
- Effluent water quality suitable for other purposes reuse
LEA: Requirements by Measure

- **Rainwater Harvesting**
  - Harvested water quality suitable for further uses

- **Sustainable Agriculture**
  - Example: Soilless Irrigation (Hydroponics/Aquaponics)

- **Efficient Water Fixture**
  - Reduce Indoor Water Consumption by 30% compared to BAU
BDL Green Incentives: LEA

LEPAP

$15m. WB Loan or BDL Direct

Industrial Sector

≈ 0% interest rate
7 to 10 Years Maturity
LEA Results, March 2017

- More than 75 projects among, among which 80% are approved and 15% are under review.

- Total granted Loan amount of USD45 Million USD.

- 43% of projects are water related projects costing USD12 Million.

- Economic Sectors:
  - Residential
  - Commercial
  - Industrial
LEA Results, March 2017

Project Distribution per Measure

- Efficient Irrigation: 14%
- WWTP: 7%
- Rainwater Harvesting: 6%
- Efficient Water Fixtures: 1%
- Sustainable Landscaping: 15%
- Other: 2%
- Pollution Abatement Measures: 10%
- Retaining Walls: 8%
- Roof Tiling: 17%
- Landscape: 17%
- Stone Cladding: 3%
- Efficient Irrigation: 2%
- Rainwater Harvesting: 6%
- Efficient Water Fixtures: 17%
LEA Results, March 2017

Granted Loan by Measure

- Efficient Water Fixtures: 1%
- Efficient Irrigation: 1%
- WWTP: 2%
- Rainwater Harvesting: 17%
- Stone Cladding: 15%
- Roof Tiling: 2%
- Retaining Walls: 14%
- Pollution Abatement Measures: 16%
- Other: 5%
- Waste Management: 23%
## BDL Green Incentives

<table>
<thead>
<tr>
<th>Financing Scheme</th>
<th>Cost on Beneficiary</th>
<th>Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIB/AFD Energy</td>
<td>0% - 0.75%</td>
<td>150%</td>
</tr>
<tr>
<td>Energy Loans</td>
<td>3.75% - (50% * 1Yr. Tbs)</td>
<td>150%</td>
</tr>
<tr>
<td>Kafalat Energy</td>
<td>3.5%</td>
<td>100%</td>
</tr>
<tr>
<td>Solar Panels Loans</td>
<td>0.75%</td>
<td>150%</td>
</tr>
<tr>
<td>Solar Energy – Rural Areas</td>
<td>0.75%</td>
<td>150%</td>
</tr>
<tr>
<td>Pollution Abatement - Industry</td>
<td>2 Yr. Tbs – 1% LIBOR 3mths. + 4.5%</td>
<td>60%</td>
</tr>
<tr>
<td>World Bank – Pollution Abatement</td>
<td>WB rate + BDL Comm + 3.5% Bank Spread - (100% * 1Yr. Tbs)</td>
<td>100%</td>
</tr>
<tr>
<td>Non Subsidized – Environmental Loans</td>
<td>3.75% - (50% * 1Yr. Tbs)</td>
<td>100%</td>
</tr>
<tr>
<td>Environmental Subsidized Loans</td>
<td>2 Yr. Tbs – 0.75%</td>
<td>60%</td>
</tr>
</tbody>
</table>
Thank You

Mazen A. Halawi
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Banque Du Liban

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