



## Expert Workshop on “Solar Pumping: An Emerging Market and a Major Driver for Sustainable Energy and Jobs”

Experiences from Lebanon: the role of integrated approach through national RE action plans and financial mechanisms.

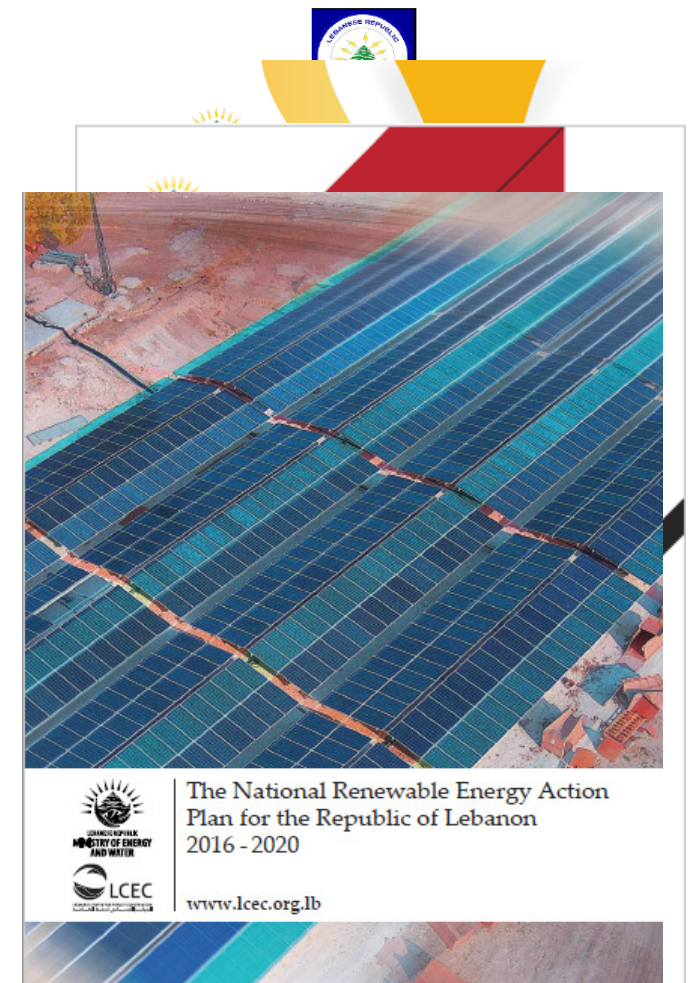
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May 23, 2017- Hotel Intercontinental Semiramis,  
Cairo

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# Policies targeting Energy Efficiency (EE) and Renewable Energy (RE)

- Policy Paper for the Electric Sector 2010
- First National Energy Efficiency Action Plan (NEEAP 2011-2015)
- Second National Energy Efficiency Action Plan (NEEAP 2016-2020)
- National Renewable Action Plan (NREAP 2016-2020)

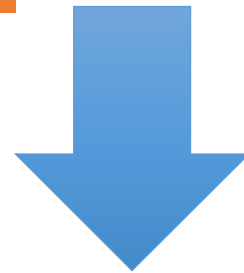


# 2020 Target for DRE

Solar photovoltaic distributed generation	Realistic		
	MW	MWh	ktoe
Industrial sector	30	49,500	10.7
Commercial sector	40	66,000	14.3
Agriculture sector	10	16,500	3.6
Residential sector	10	16,500	3.6
Others (public, municipalities)	5	8,250	1.8
Public street lighting	5	8,250	1.8
<b>TOTAL</b>	<b>100</b>	<b>165,000</b>	<b>35.6</b>

# NEEREA

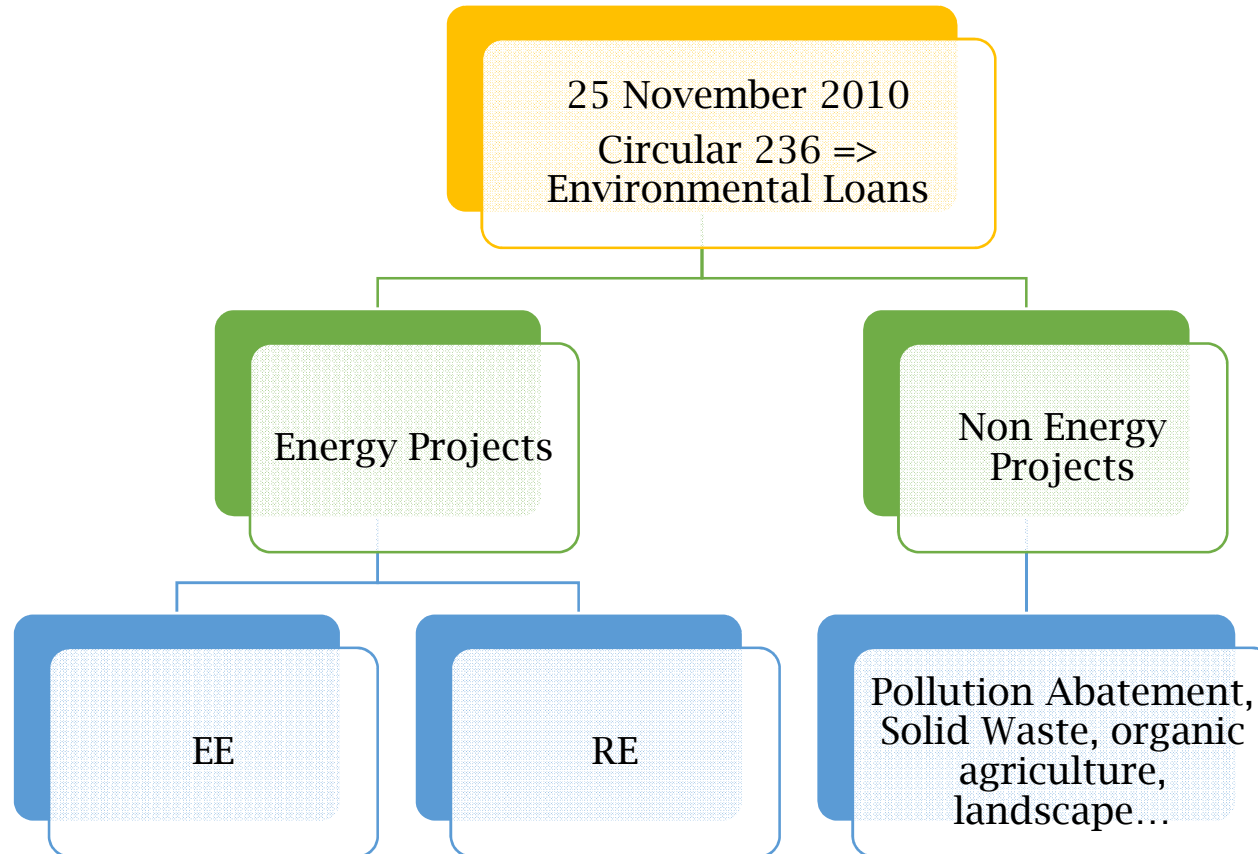
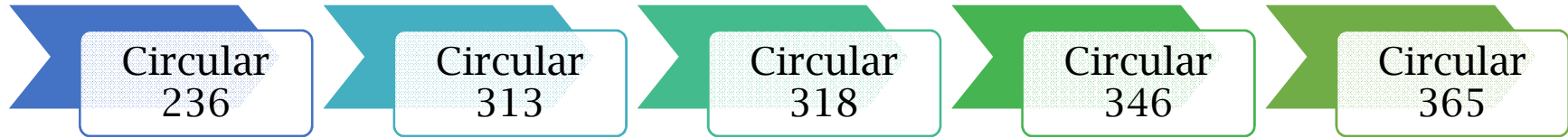
- Initiative 11 of NEEAP (2011-2015): Financing Mechanisms and Incentives
- “This initiative aims to provide proper financing mechanism in order to promote the use of energy efficiency and renewable energy. This is mainly linked to the collaborative work with the Ministry of Finance and the Central Bank of Lebanon.”



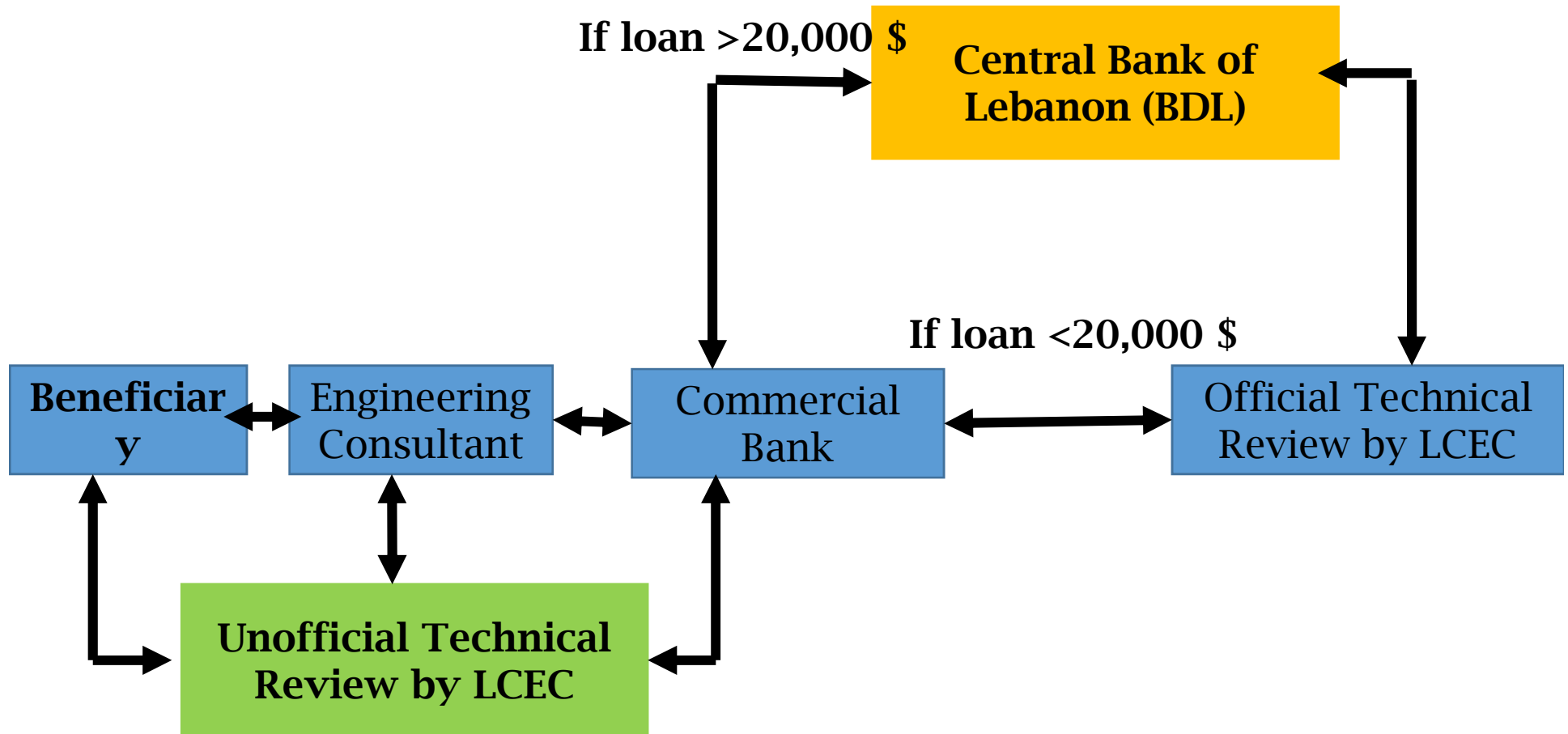
## National Energy Efficiency and Renewable Energy Action

Up to 14 Yrs., 4 Yrs. Grace, Interest Rate  
(NEEREA)  
1.075%

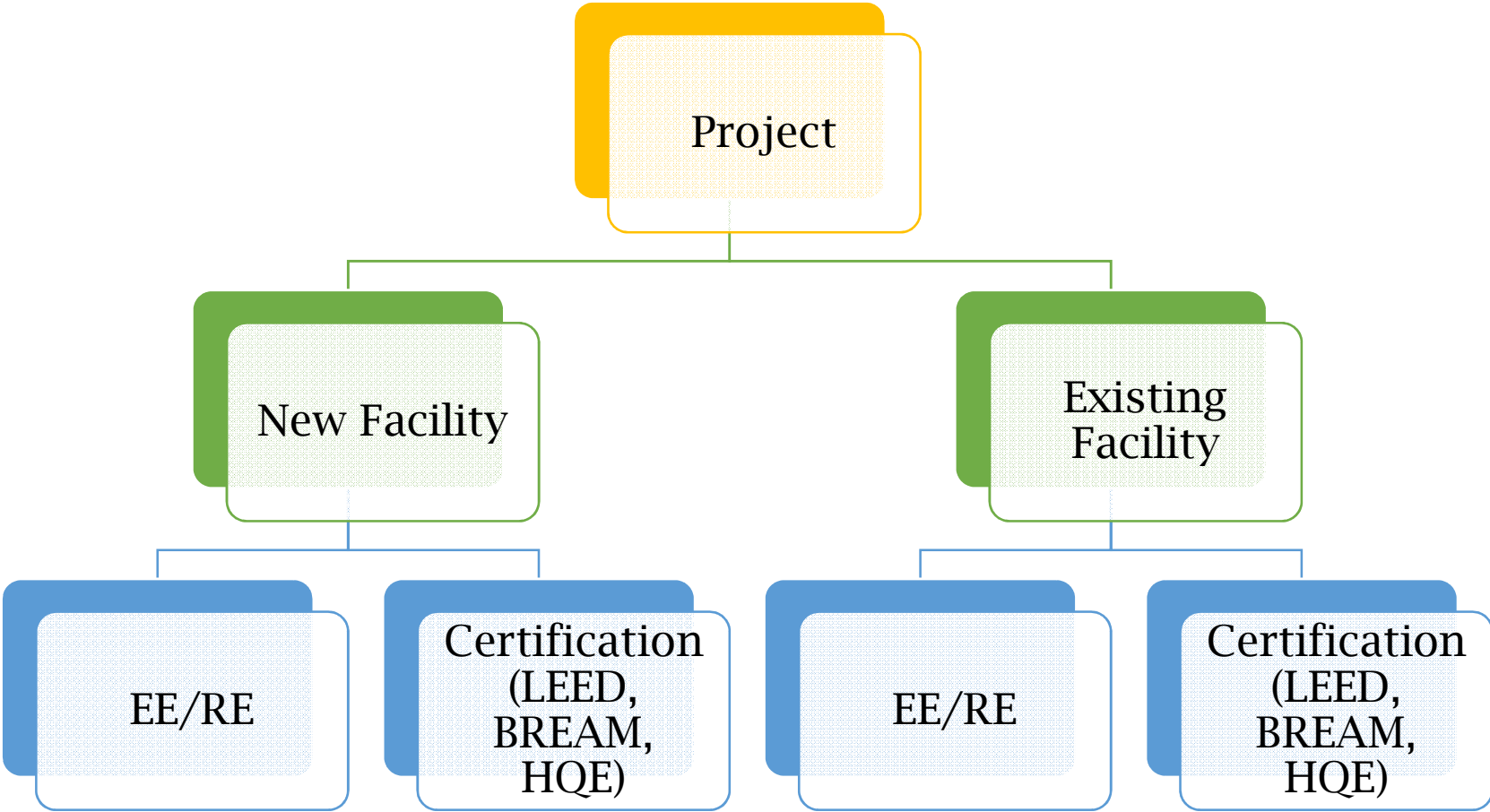
# Central Bank Circulars



# How NEEREA Functions?



# Types of Loans



## Eligible RE Projects

- Solar PV On-Grid
- Solar PV Off-Grid
- Solar PV Hybrid
- Solar PV street lighting
- Solar Pumping
- SWH if system cost > 5,000 \$
- Others...



# Solar Pumping Projects

- Mainly in Bekaa Governorate
- Agriculture Activities (Irrigation)
- Between 2014 and 2016=> 22 projects
- 13 <Capacity (kWp)< 960



# Example of Solar Pumping Projects through NEEREA

Deyr El Ahmar=> Bekaa Governorate

Capacity=>960 kWp

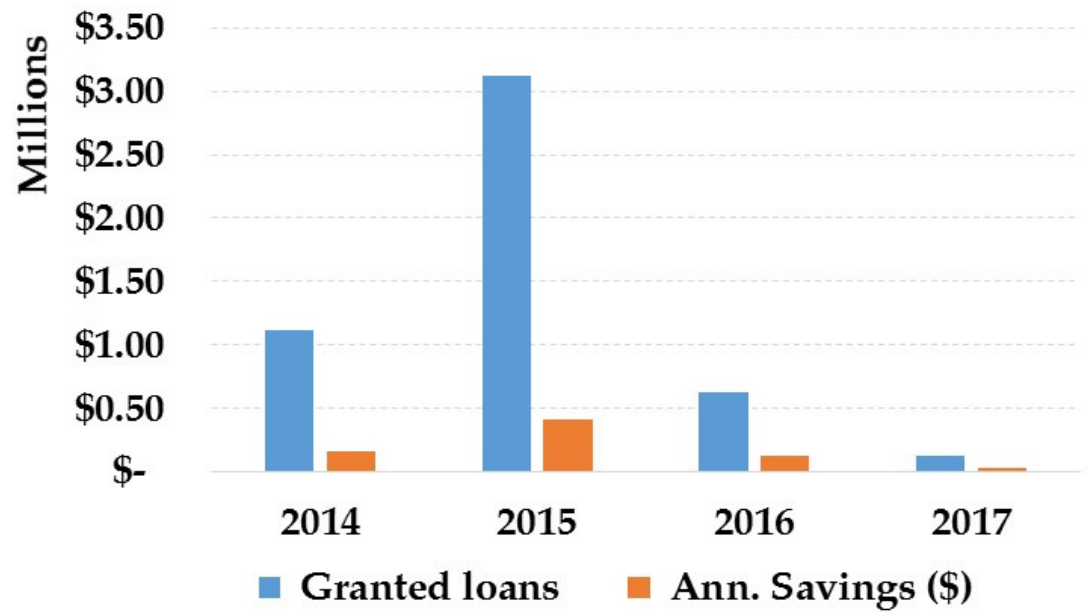
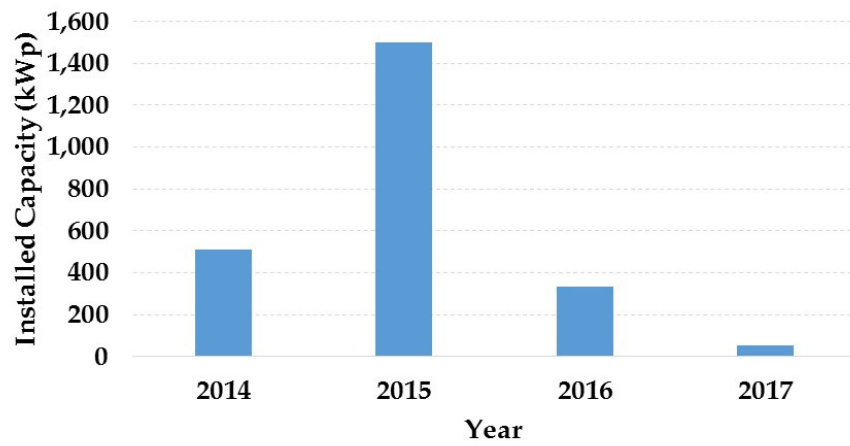
Granted Loan=> \$ 2,088,152

Annual Savings => 1,092,286 kWh

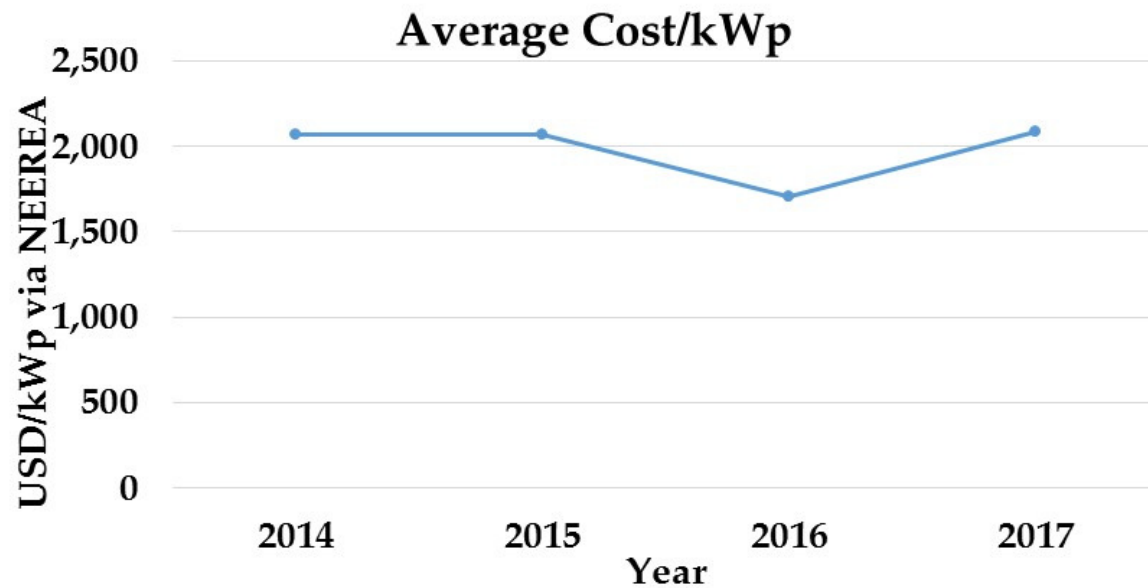
Annual Savings => \$ 273,071



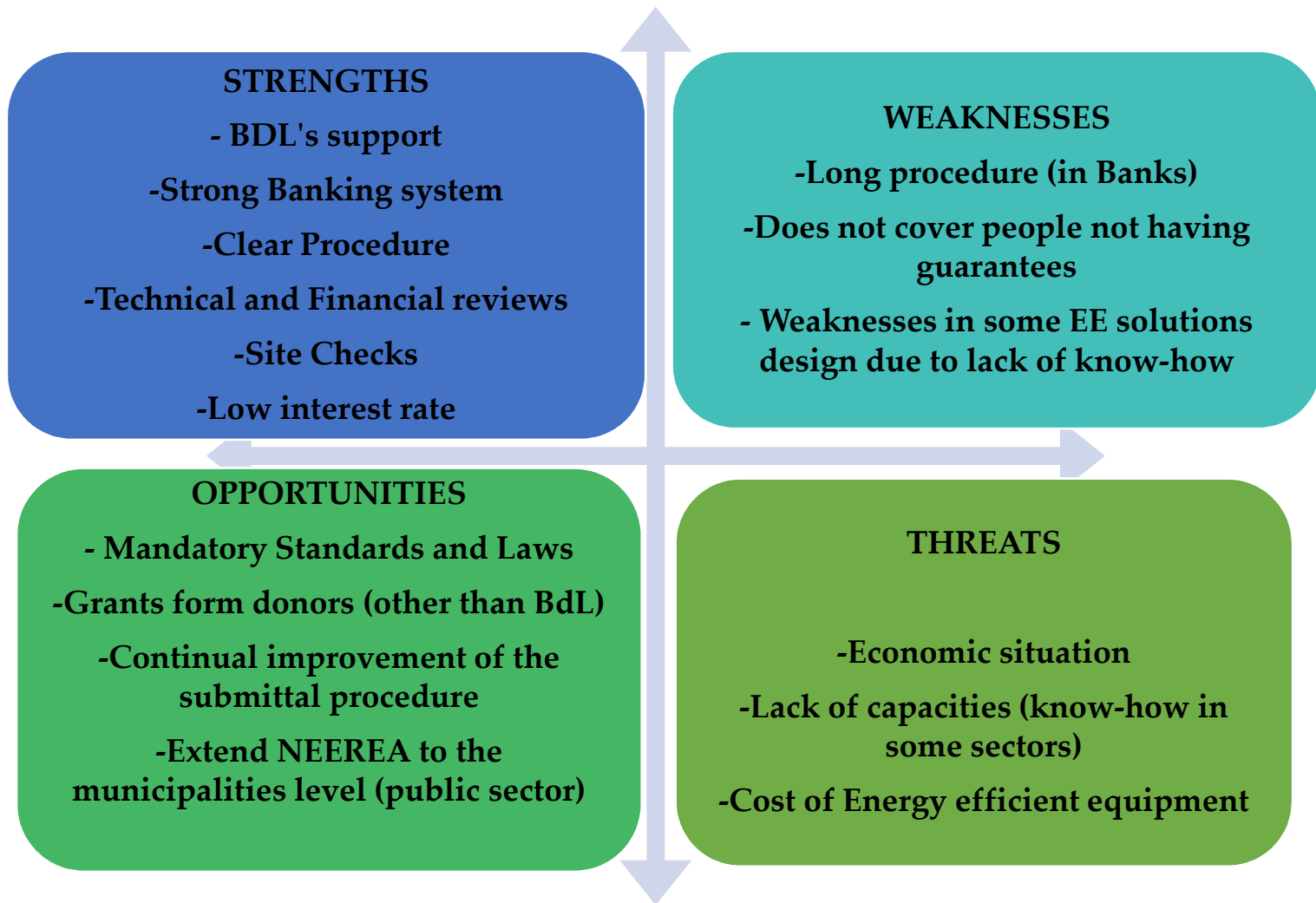
# Solar Pumping Statistics in Lebanon-NEEREA



# Average System Cost



# SWOT Analysis



# Promotion

- Several Workshops for Farmers
- Projects Related to Efficient Irrigation systems
- Contest by Ministry of Agriculture: The Best Green Farms in Lebanon in which they applied the renewable energy in Agriculture to consider these farms as pilot farms for visiting and using as technical demonstration plots for other farmers

## Next ?

- The Council for Development and Reconstruction (CDR) has published an invitation for bids for the “design, supply, and installation of Baalbeck solar PV pumping systems” (March 2017)=> World Bank Grant for 11 Solar PV stations of Total capacity ~1.28 MWp
- NEEREA projects

# Thank You

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