



National Energy Efficiency and Renewable Energy Action Plan (NEEREA)- Lebanon

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IKI Project Accelerating zero emission
building ambitions in the MENA region

Beirut, Lebanon

Background

- In 2009, at the 15th session of the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) meeting in Copenhagen, Denmark, the Lebanese Government made a pledge to boost Renewable Energy (RE) production capacity to 12% by 2020
- Ministry of Energy and Water published a comprehensive energy policy (2010 Policy Paper for the Electricity Sector) that was approved by the Council of Ministers (COM) on June 21st, 2010, followed by the Lebanon's first NEEAP 2011-2015, in which Initiative 11 stated the following:
 - “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 (NEEREA)

Eligible financed measures under NEEREA

- **Energy Efficiency:**

- Building Envelope Improvement: Double Wall, Thermal Insulation (Roof, Walls, Ground), Double Glazing
- Efficient HVAC systems (Efficient chillers, VRF technologies etc.)
- LED lighting systems, Motions sensors
- BMS systems

- **Renewable Energy:**

- Solar PV systems
- Solar Water Heating Systems

BDL Energy Incentives – Cost of the NEEREA loan



مصرف لبنان
BANQUE DU LIBAN

- According to BDL circular 492 issued in May 2018, the following interest rates are to be applied for all Energy Efficiency and Renewable Energy loans:

Libor rate – 0.52 % \approx 2.25 %

- Maximum loan amount is 20,000,000 \$
- All NEEREA loans are in USD currency

Types of loan

New Projects

- Up to 14 years maturity
- Up to 4 years grace period

Re-Modeling Existing Projects

- Up to 10 years maturity
- Up to 2 years grace period

Certified Green Buildings

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

Nature of Project	Rating	EnergyLoanAmount
New Project	Not rated	Energy Cost
	Certified	15% of Total Project Value
	Silver	25% of Total Project Value
	Gold	35% of Total Project Value
	Platinum	45% of Total Project Value
Existing Project	Rated or Not Rated	Energy Cost

- *The certification system developed by LEED (Leadership in Energy and Environmental Design) is adopted, or equivalent classifications from other internationally recognized systems*

Foreign Incentives

EU Grant for SMEs
(November, 2012)



€12,200,000



Fully allocated with more than 100 beneficiaries

Italian Grant
(November, 2017)

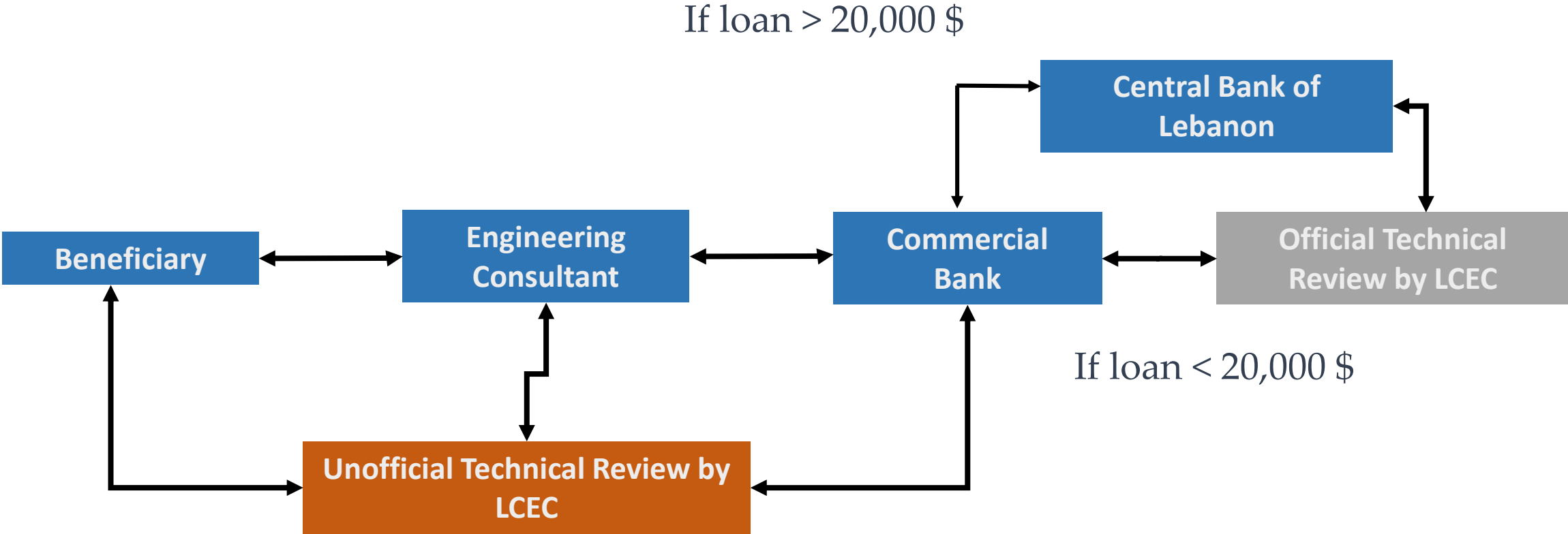


€5,000,000



Grant for 10 % of the loan for projects based on
60 % of Italian products

Procedure



NEEREA project in the residential sector

Table 67: Combined solutions details

Type	BAU Option		EE Solution		Energy Saving	
	Energy (kWh/yr)	Cost (\$/yr)	Energy (kWh/yr)	Cost (\$/yr)	Energy (kWh/yr)	Cost (\$/yr)
Solar Water Heating System	49,874	\$7,186	11,254	\$1,621	38,621	\$5,564
Energy Efficient Lighting	54,384	\$7,836	29,441	\$4,242	24,943	\$3,594
Motion Detectors	29,441	\$4,242	20,056	\$2,890	9,384	\$1,352
Building Envelope Enhancement	216,668	\$31,217	135,361	\$19,503	81,307	\$11,715



NEEREA project in the commercial sector



Bottom View of the building envelope



Bottom View of building envelope

Air-cooled variable speed drive screw chiller

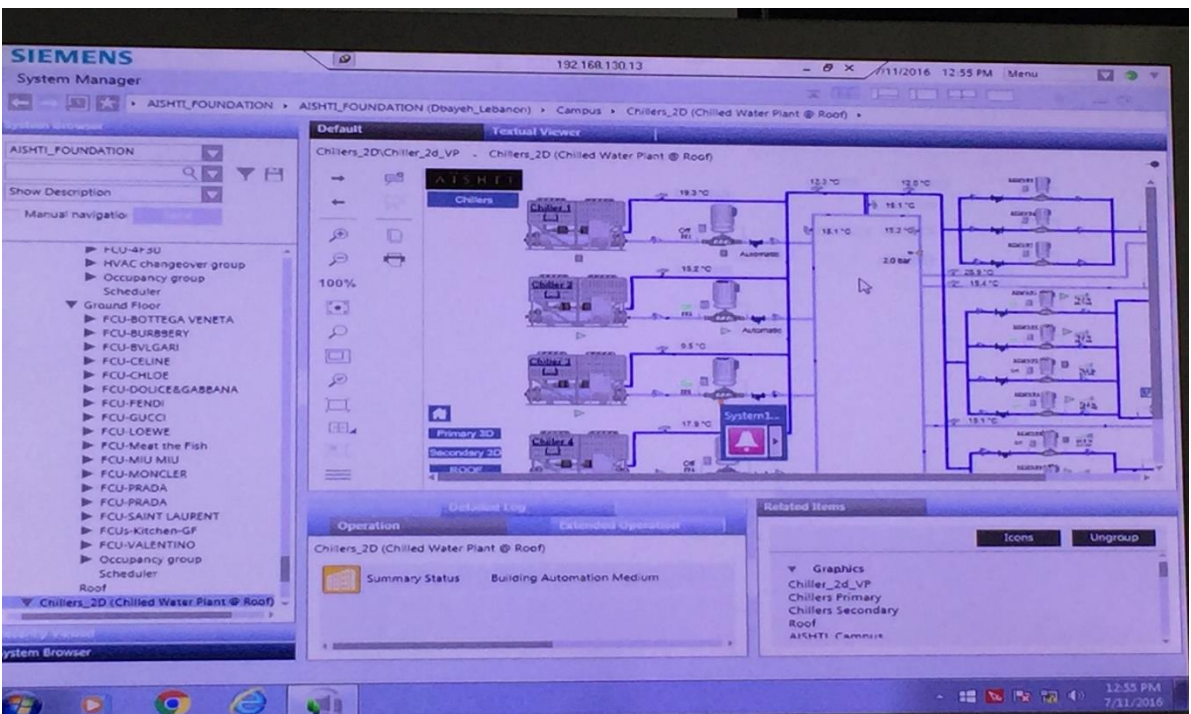
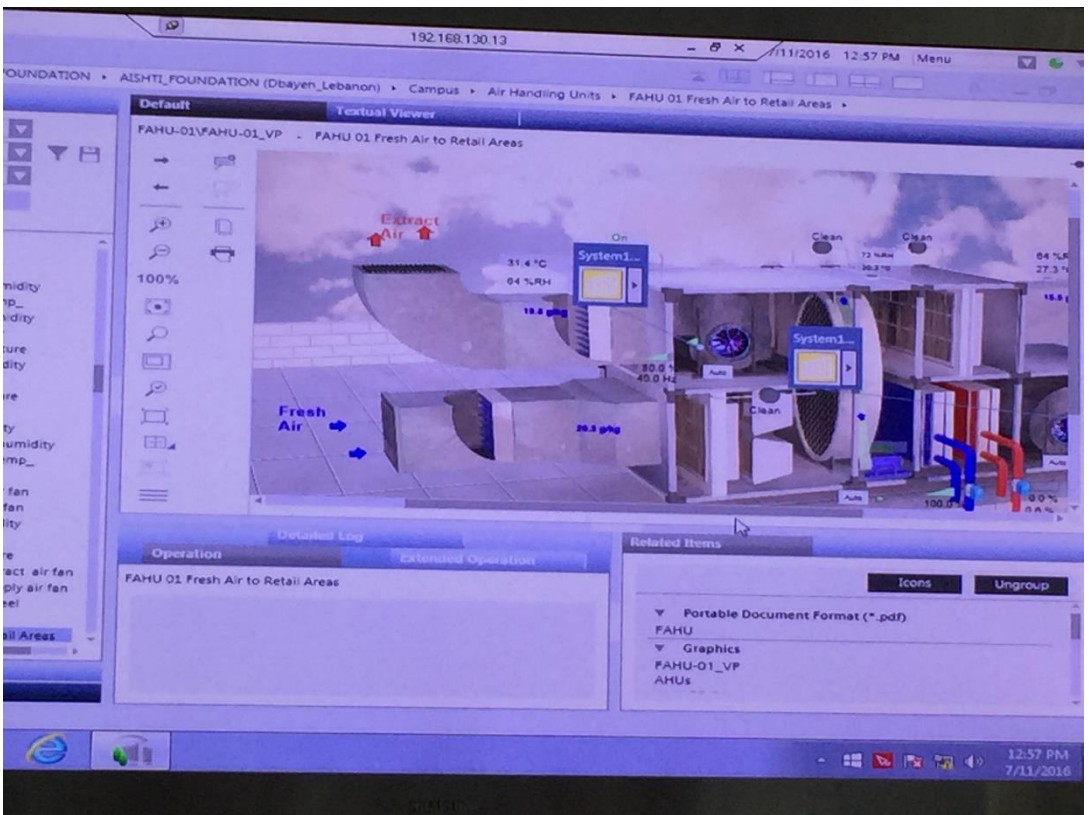


Efficient cooling system installed on the rooftop



Efficient cooling system installed on the rooftop

BMS Control Interface



NEEREA project in the commercial sector

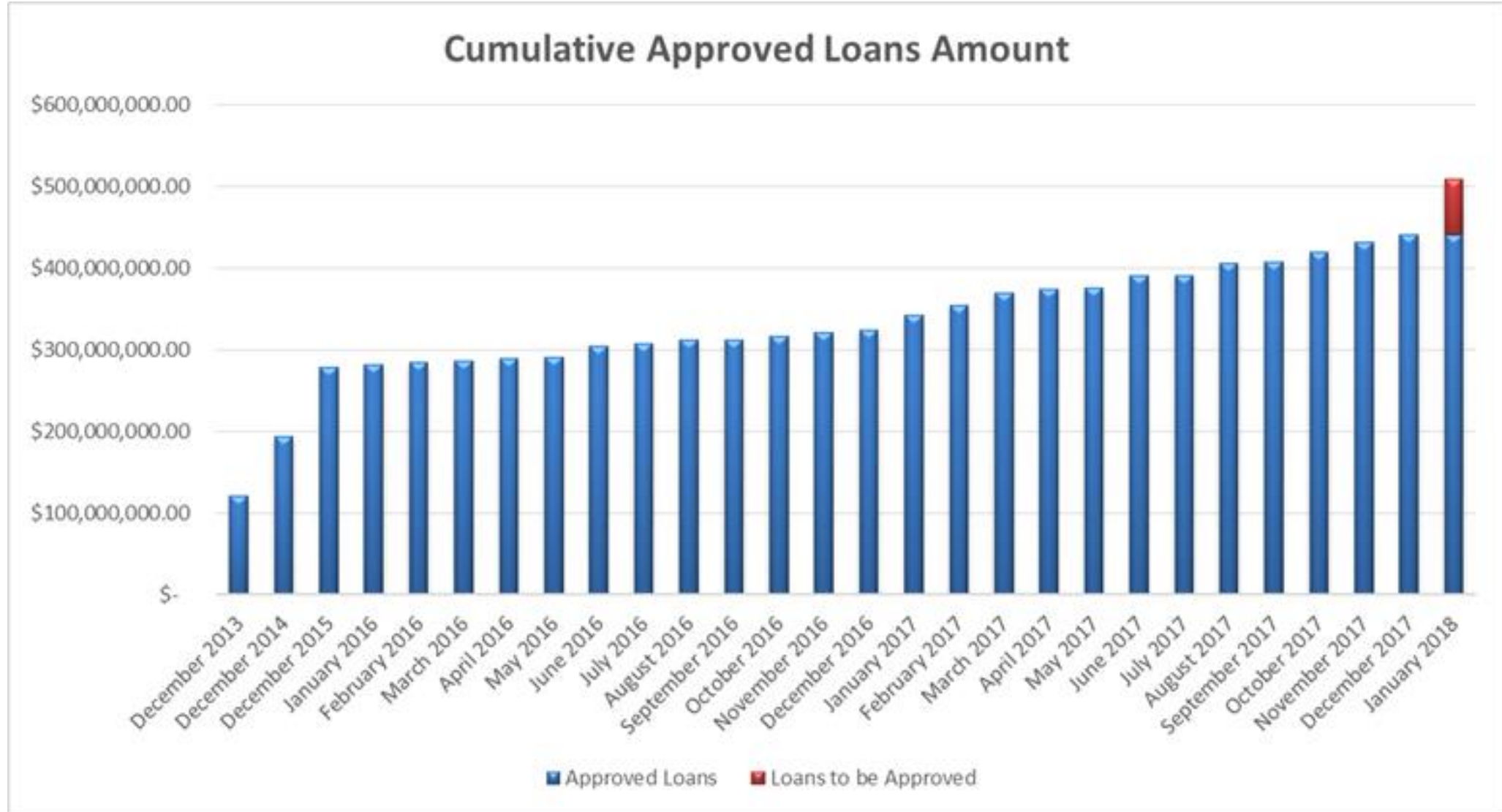
Implemented measures:	Savings per year (\$)
Building Envelope (Double Skin, Double Glazing)	168,568
Solar Water Heating system	2,368
Energy Efficient Chillers	124,865
Co-Generation and Heat Recovery system	197,902
VSD for Escalators	58,791
Building Management System (BMS)	132,850

NEEREA – Statistics (till January 2018)

- More than **755** approved loans with a total value of **440 million USD**
- **85** Energy Efficiency projects with a total value of **56 million USD**
- Green building loans took the biggest part with a total budget of **248 million USD**

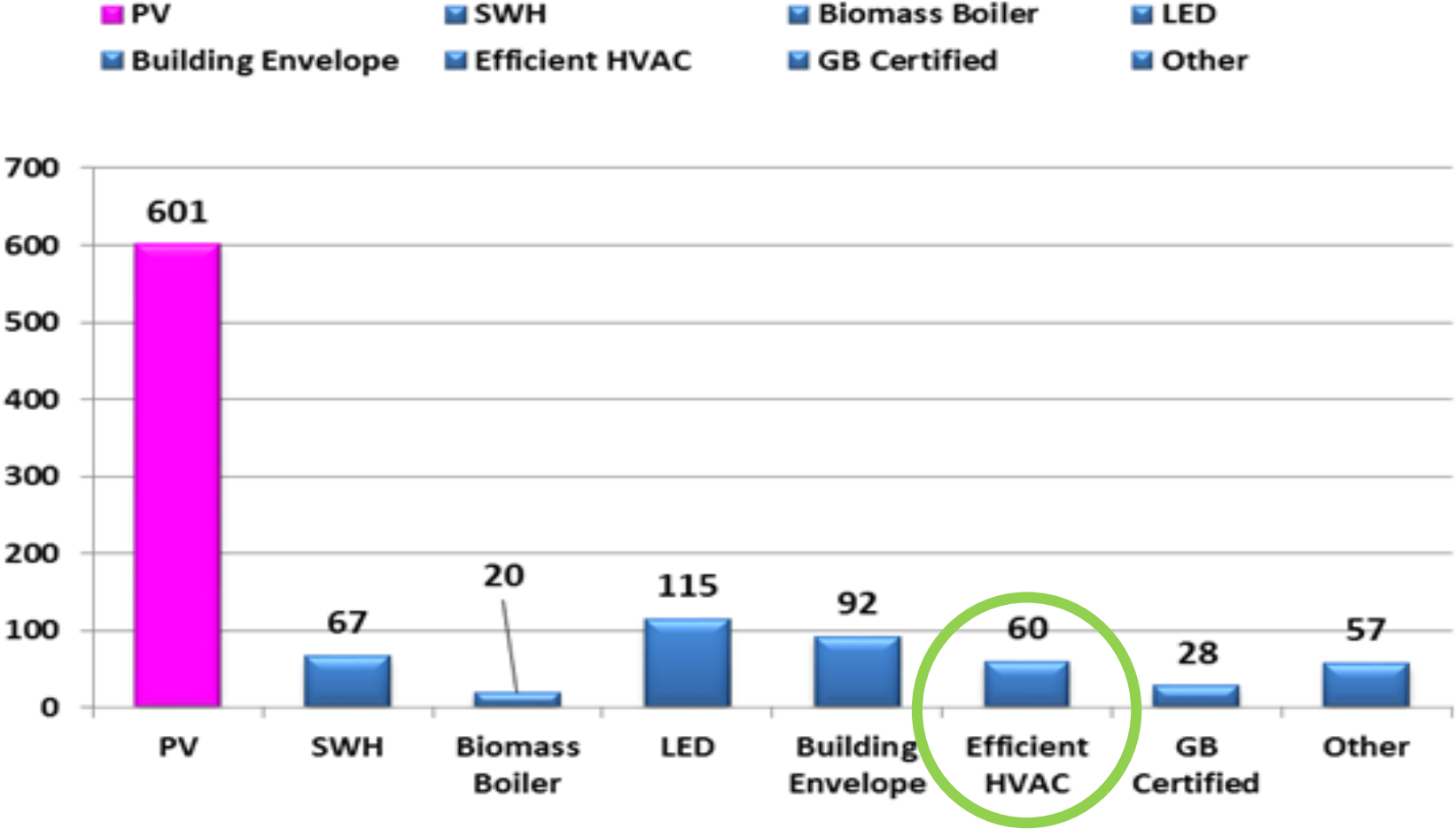


NEEREA - Statistics

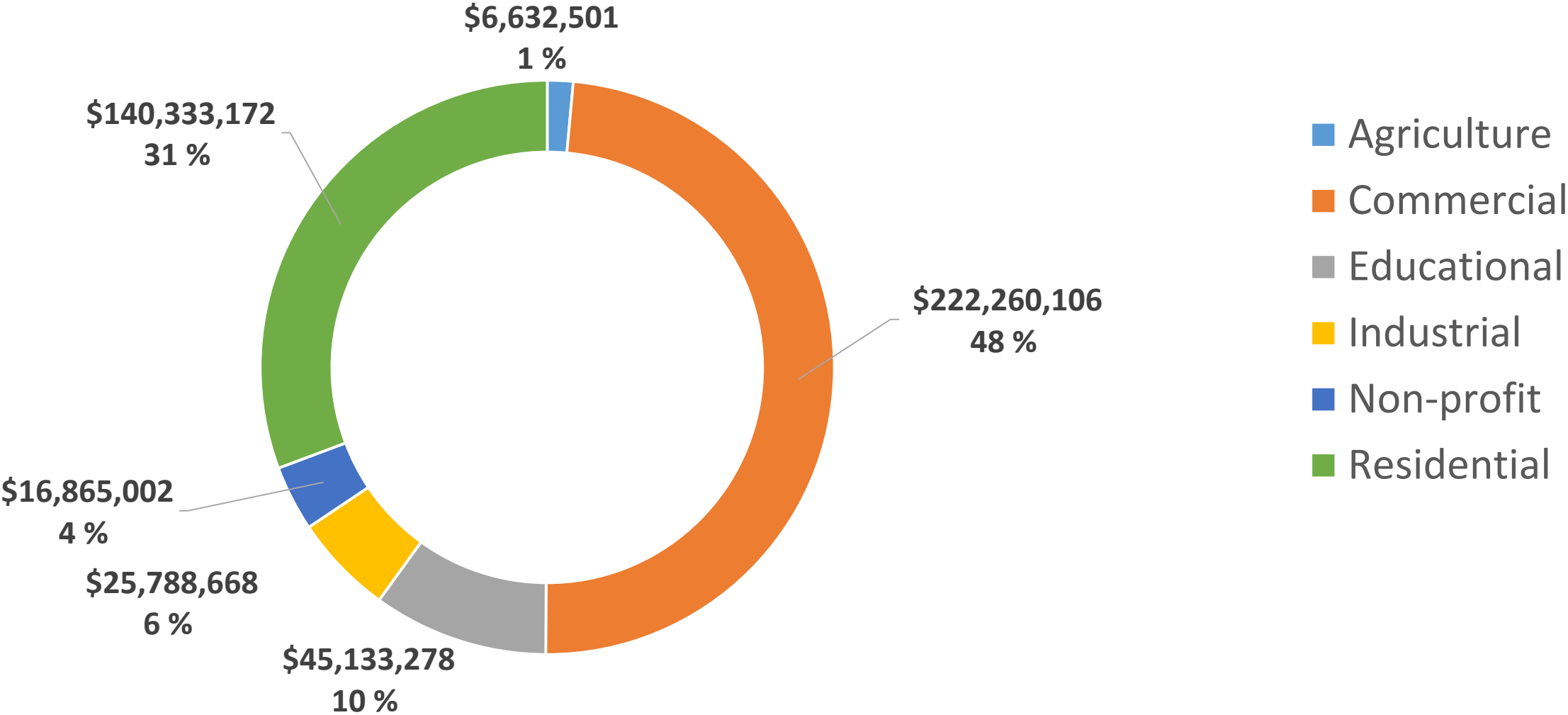


NEEREA loans per technologies

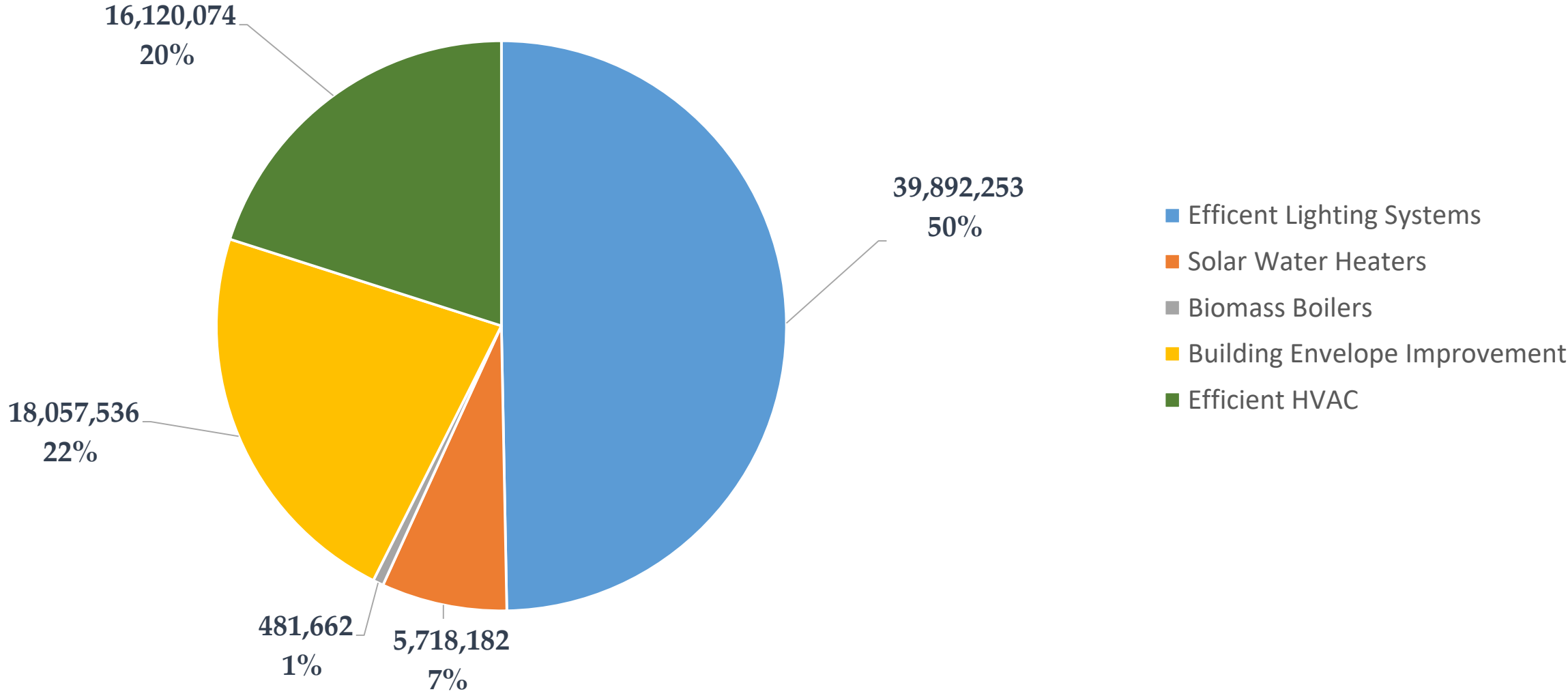
Number of Projects by Technology



Distribution of projects and loan amounts per sector



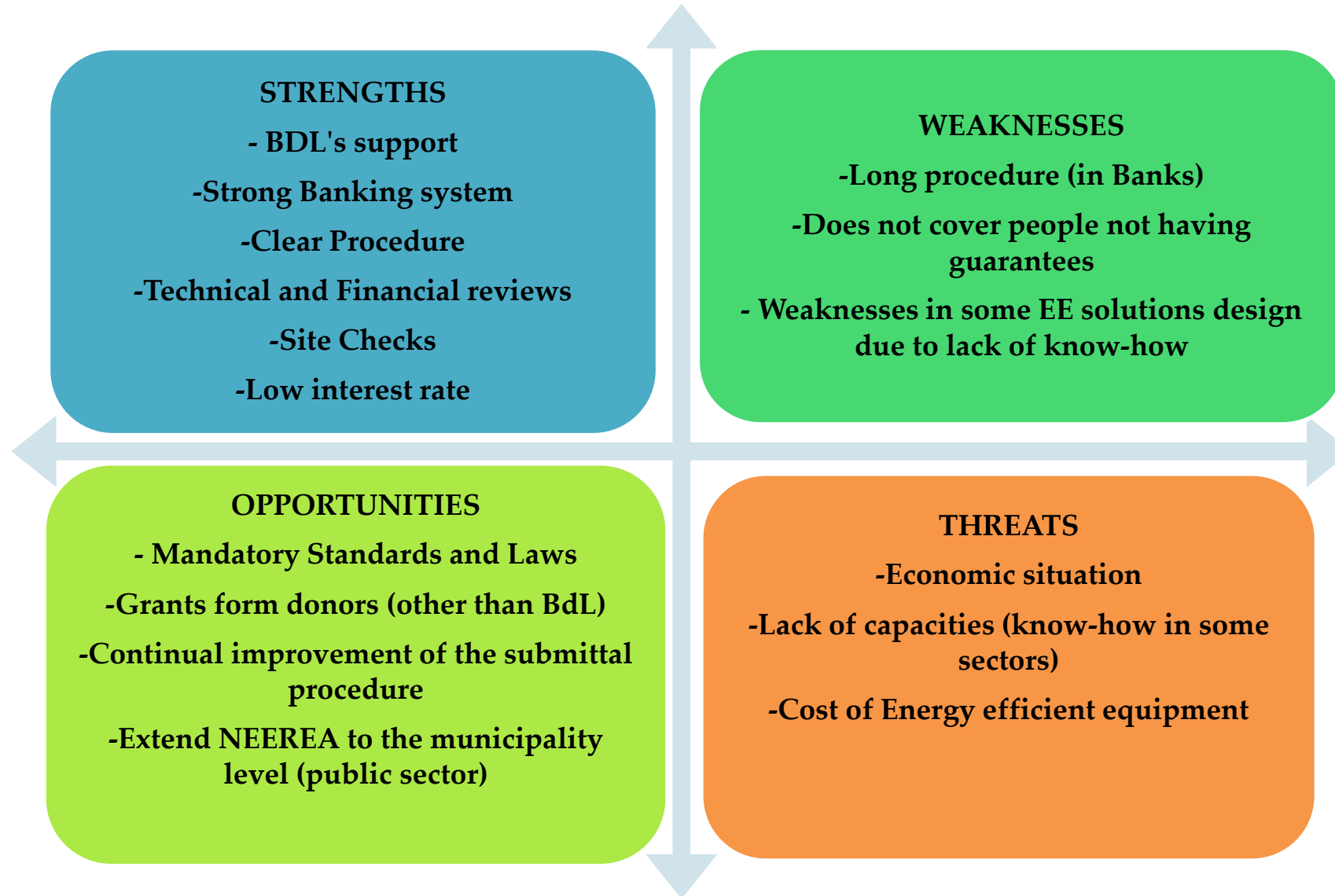
Energy Savings (kWh) till January 2018



Boosting Energy Efficiency

- Linking energy efficiency (EE) to renewable energy (RE)
- Mandatory energy audit for PV projects with an installed capacity greater or equal to 60 kWp – for existing facilities only
- Energy audits to be conducted by ESCO (from the list of qualified ESCO's: individual consultants, ESCO, and Green Buildings ESCO's)
- Creating more than 100 direct energy audits per year

Lessons learned from the NEEREA Mechanism



Thank You

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