



LCEC

LEBANESE CENTER FOR ENERGY CONSERVATION
المركز اللبناني لحفظ الطاقة

efficient resources, sustainable achievements

Lebanese Financial Mechanisms

NEEREA and LEA

By Rani Al Achkar,

Senior Programmes Engineer
Secretary of the Board

**Lebanese Center for Energy
Conservation (LCEC)**

**Future Energy in Environmental
Development Cooperation: the
Italian Contribution**

September 3, 2017

Italian Pavillon - Expo 2017 Astana
Astana – Kazakhstan

Presentation Outline

- **I. The Lebanese Center for Energy Conservation (LCEC)**
- **II. Political Framework**
- **III. National Energy Efficiency Action Plan for Lebanon 2016-2020**
- **IV. National Renewable Energy Action Plan for Lebanon 2016-2020**
- **V. National Energy Efficiency and Renewable Energy Action (NEEREA Financing Mechanism)**
- **VI. Lebanese Environmental Action (LEA financing Mechanism)**

I. The Lebanese Center for Energy Conservation (LCEC)

Created in 2002

Previously
Financed by
GEF-MEW
Managed by
UNDP

Now
Independant
Technical
National Center
Affiliated to the
MEW

Reduction of
GreenHouse Gas
(GHG) Emissions
+ ENERGY EFFICIENCY
+ RENEWABLE ENERGY

II. Political Framework

Renewable Energy Activities
Demand Side
+++

Management/Energy
Efficiency Activities

**Policy Paper for the
Electricity Sector**

(June 2010)

2009

**12%
commitment**

(Copenhagen Summit)

2010

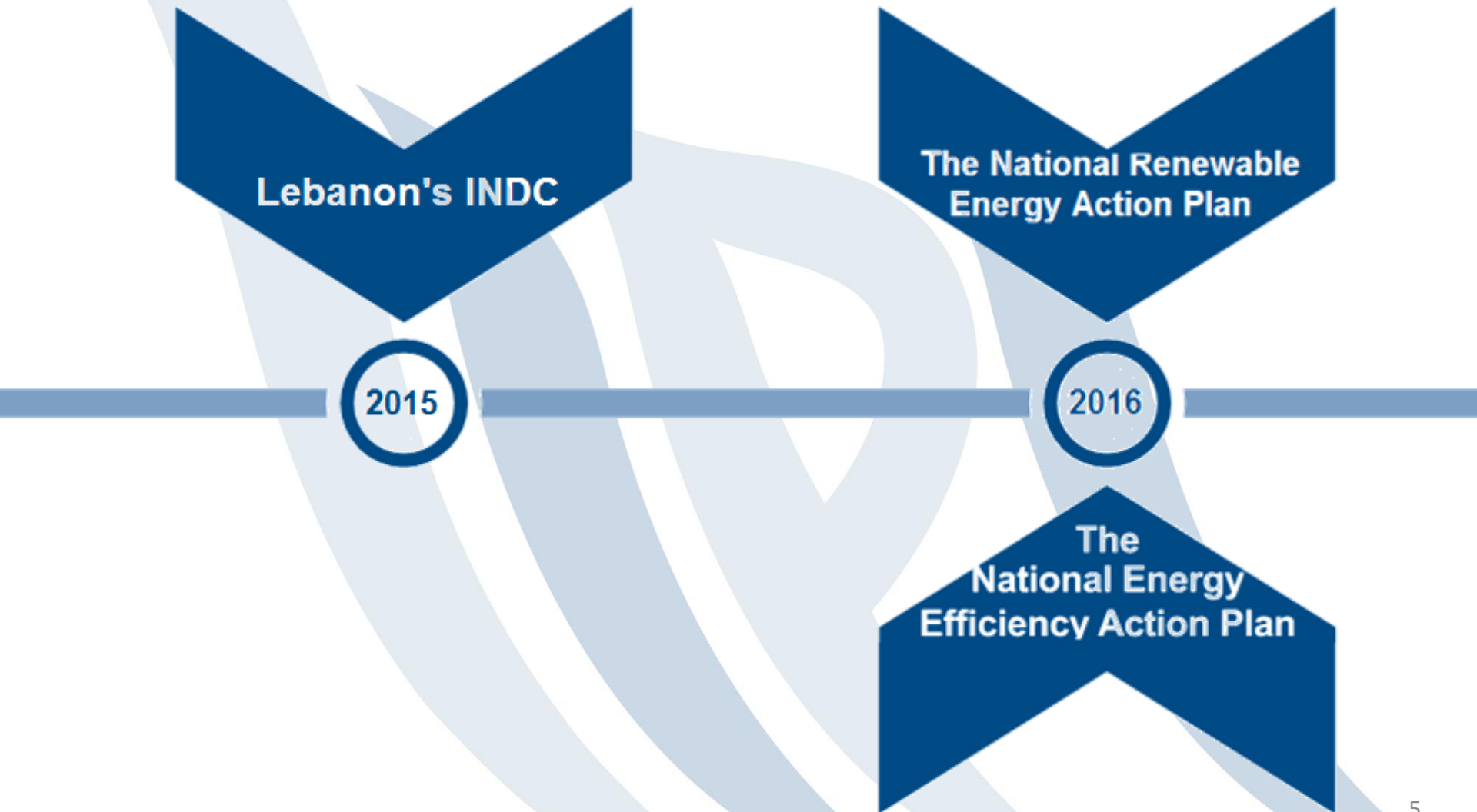
2011

**The
National Energy
Efficiency Action Plan**

(November 2011)

EE lighting	Solar Water Heaters	Financing
Energy Conservation Law	Wind Farms	Capacity Building
Decentralized RE	Solar Farms	ESCOs
Public Street Lighting	Hydropower	EE Equipment
	Other Tech.	
	Building Code	

II. Political Framework



III. National Energy Efficiency Action Plan for Lebanon 2016-2020

- **Developed after the review of NEEAP 2011-2015**
- **Published in March 2016**
- **Five year plan**
- **26 sectoral measures**
- **Bottom-up approach**
- **1,221.5 - 1,316.5 MUSD**
- **Total savings 2016-2020: 1,514 GWh (*for an expected energy demand of 31,344 GWh in 2020 (BAU)*)**
- **Decreased demand growth rate from 7% to 5.81%**

III. National Energy Efficiency Action Plan for Lebanon 2016-2020

SUMMARY OF SAVINGS AND IMPLEMENTATION COST BY SECTOR IN NEEAP 2016-2020

Measure	Savings (kWh)	Funds needed (MUSD)
Power Sector	686,136,822	473.5
End-use	828,105,060	748-843
Horizontal end-use measures	49,200,000	587.875
End-use measures in the building sector	148,922,440	37.2
End-use measures in industry and agriculture	610,251,000	120.6-215.6
Energy efficiency in the public sector	19,731,620	2.2

III. National Energy Efficiency Action Plan for Lebanon 2016-2020

EXAMPLE: SUMMARY OF THE PUBLIC SECTOR MEASURES

Measure	Savings (kWh)	Funds needed (MUSD)	Source of Funds
Pu 01 Creation of financing mechanism for the public sector	N/A	0.1	An estimation of budget needed for creating the financing mechanism. Budget not available
Pu 02 Green procurement for new and existing public buildings	4,260,000	0.1	Budget needed to develop the green procurement guideline. Budget not available
		1.3	Budget to replace equipment in 25 public buildings. Budget not available
Pu 03 SEAPs for municipalities	N/A	0.2	Rough estimation. Budget not available
Pu 04 Management of public street lighting	15,471,620	0	Budget needed to develop the guide by in-kind contribution
		0	Budget to replace 9,000 lamps to be covered by MEW
		0.5	Budget needed to implement smart management systems in 10 municipalities ³ Budget not available

IV. National Renewable Energy Action Plan for Lebanon 2016-2020

- 12% in 2020 following Copenhagen Declaration of the GoL in 2009**
- Target based on total primary energy consumption for both heat and electricity**
- Based on the AREF and NREAP templates by LAS for 2010-2030 period**
- 2010 as a baseline for all calculations**

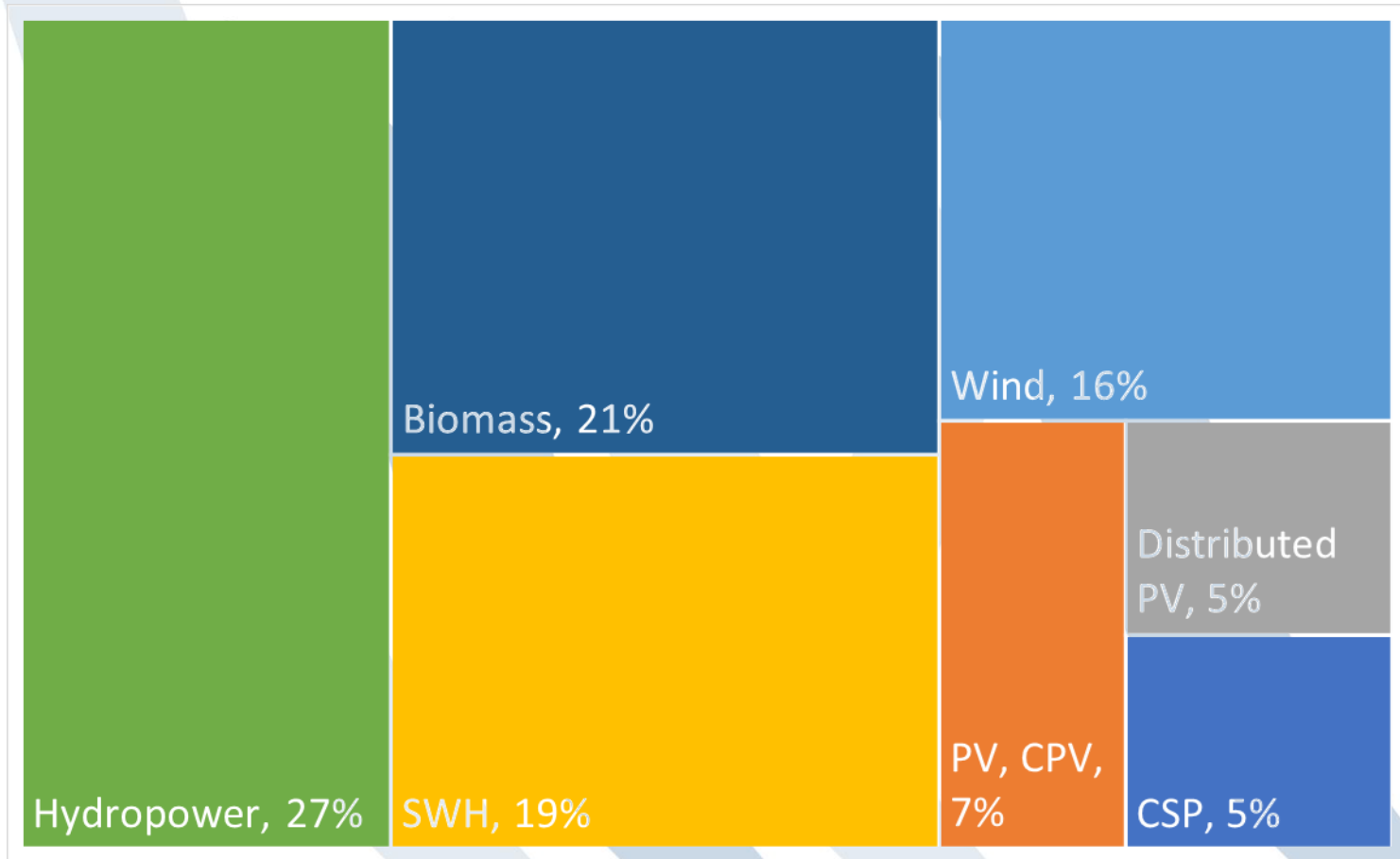
IV. National Renewable Energy Action Plan for Lebanon 2016-2020

➤ RE production as per the NREAP

	2010	2015	2020	2030
Total National renewable energy production (in ktoe)	194	247	767	1505
Total national heating and electricity demand (in ktoe)	3,438	4,822	6,389	11,239
Share of renewable energy production of the total energy production (%)	5.64%	5.12%	12.01%	13.39%

IV. National Renewable Energy Action Plan for Lebanon 2016-2020

➤ 2020 distribution of RE shares as per the NREAP



IV. National Renewable Energy Action Plan for Lebanon 2016-2020

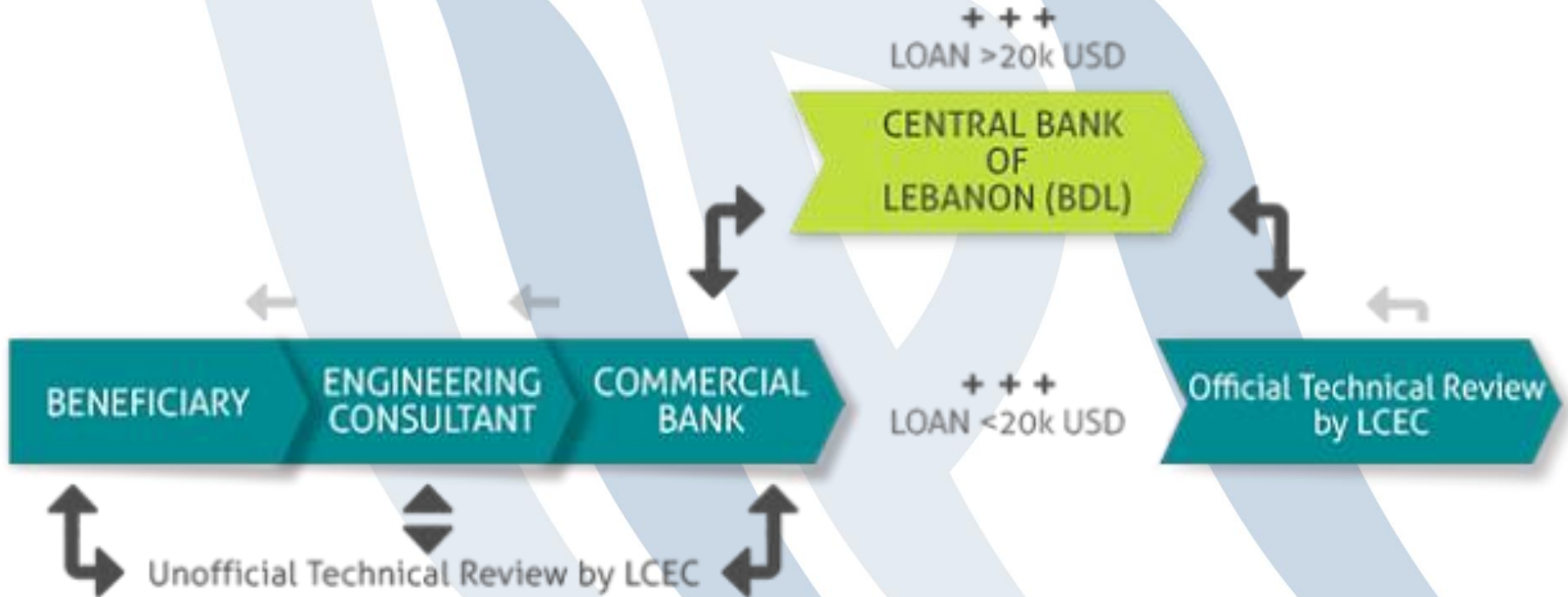
- Around 1,990 Million USD investments for the equivalent yearly generation of 3,608 GWh excluding the cost of bioenergy**

V. National Energy Efficiency and Renewable Energy Action (NEEREA Financing Mechanism)

- National financing mechanism by the Central Bank of Lebanon (Banque du Liban-BDL)**
- Dedicated to the financing of green energy projects by the private sector in Lebanon**
- Launched on 25 November 2010**
- based on the BDL Circulars 236, 313, 318, 346, and 399**
- A dedicated unit at LCEC is offering BDL the related Technical Support Consultancy Services**

V. National Energy Efficiency and Renewable Energy Action (NEEREA Financing Mechanism)

➤ NEEREA process diagram

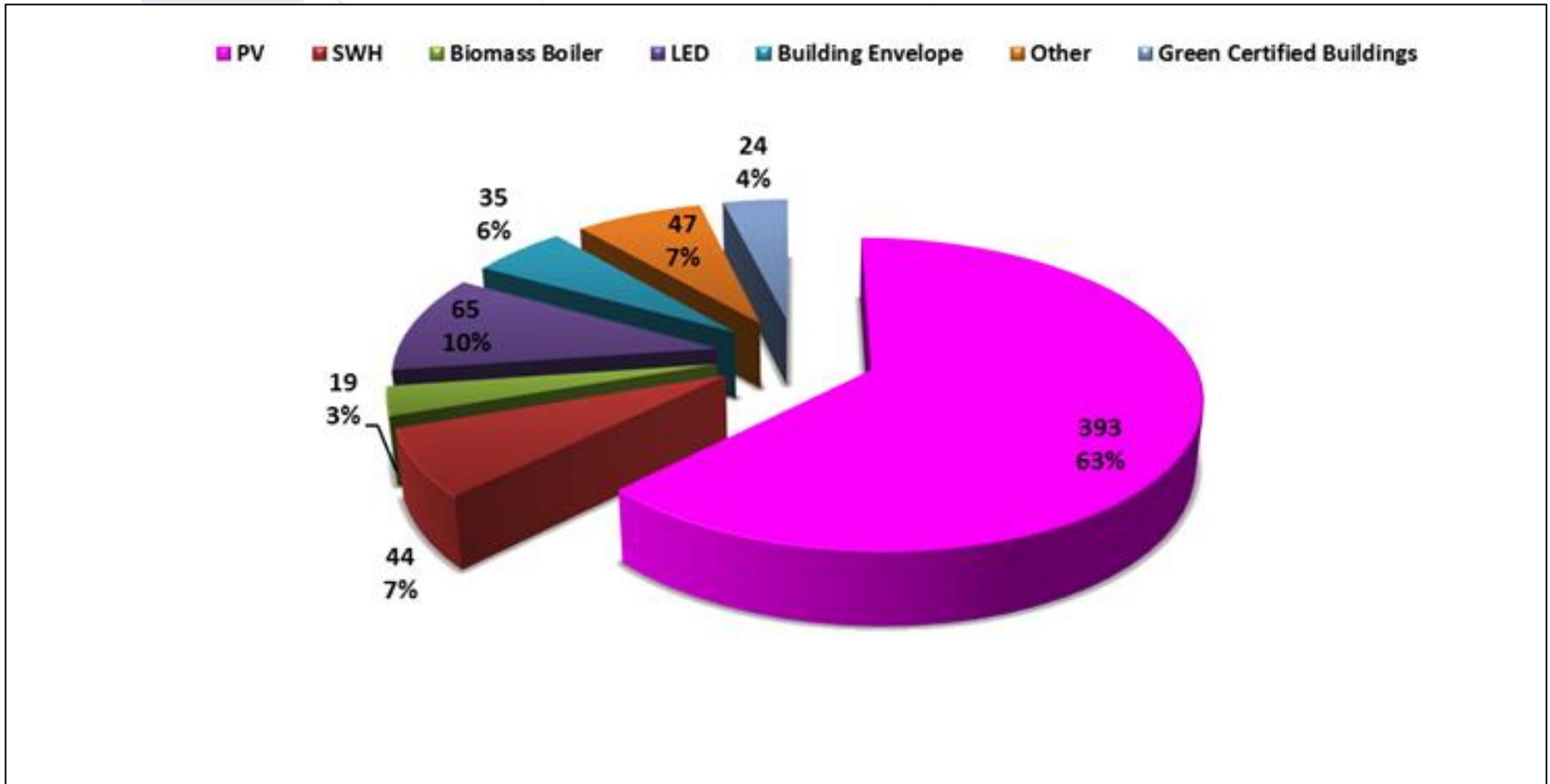


V. National Energy Efficiency and Renewable Energy Action (NEEREA Financing Mechanism)

- **656 projects are approved under the NEEREA financing mechanism with a total amount of more than 391 Million USD, project value exceeding 700 Million USD**
- **42 projects are currently in the pipeline with a total amount of more than 12 Million USD**

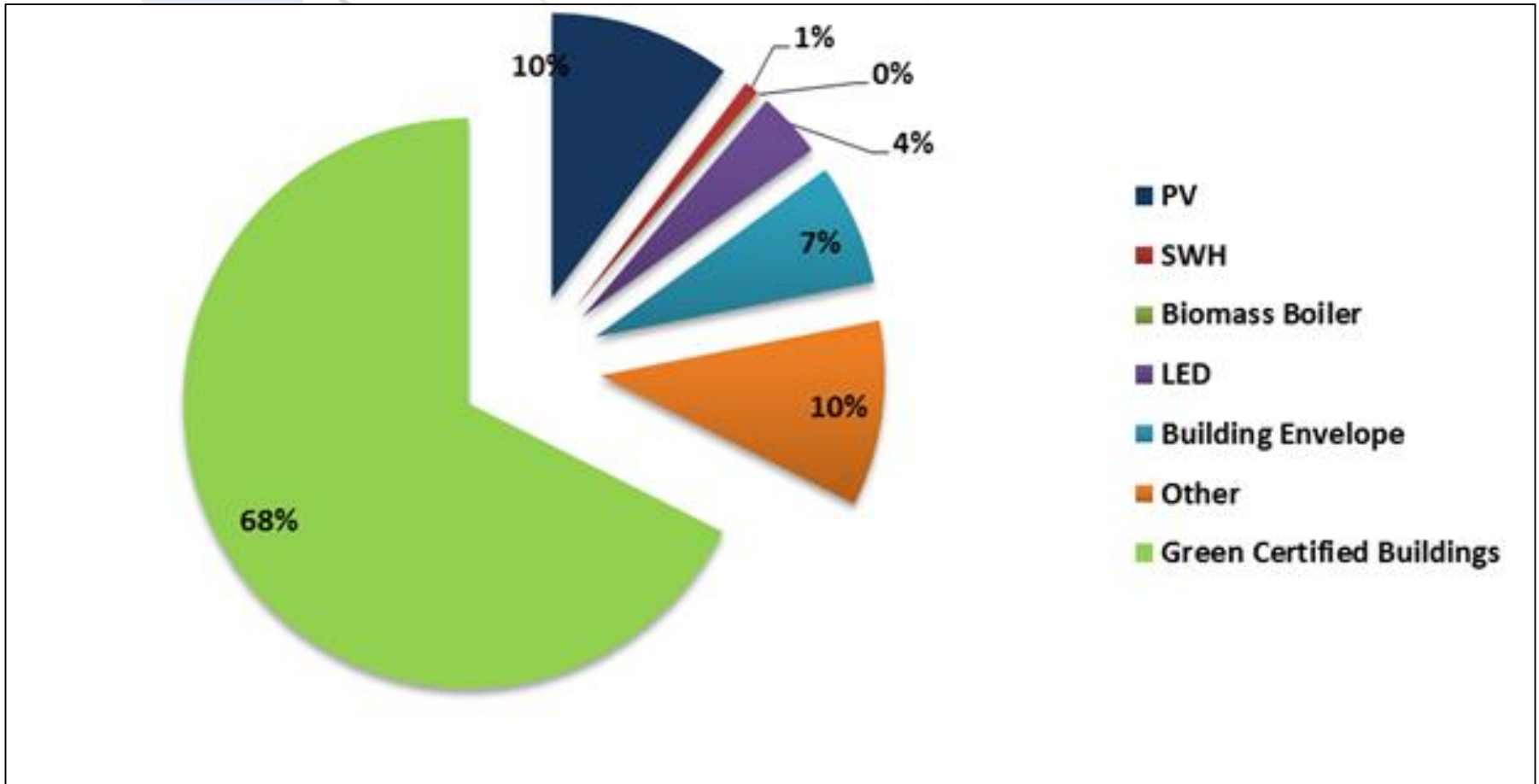
V. National Energy Efficiency and Renewable Energy Action (NEEREA Financing Mechanism)

➤ No. of implemented NEEREA projects by technology



V. National Energy Efficiency and Renewable Energy Action (NEEREA Financing Mechanism)

➤ Loaned amount of NEEREA projects by technology



VI. Lebanese Environmental Action (LEA Financing Mechanism)

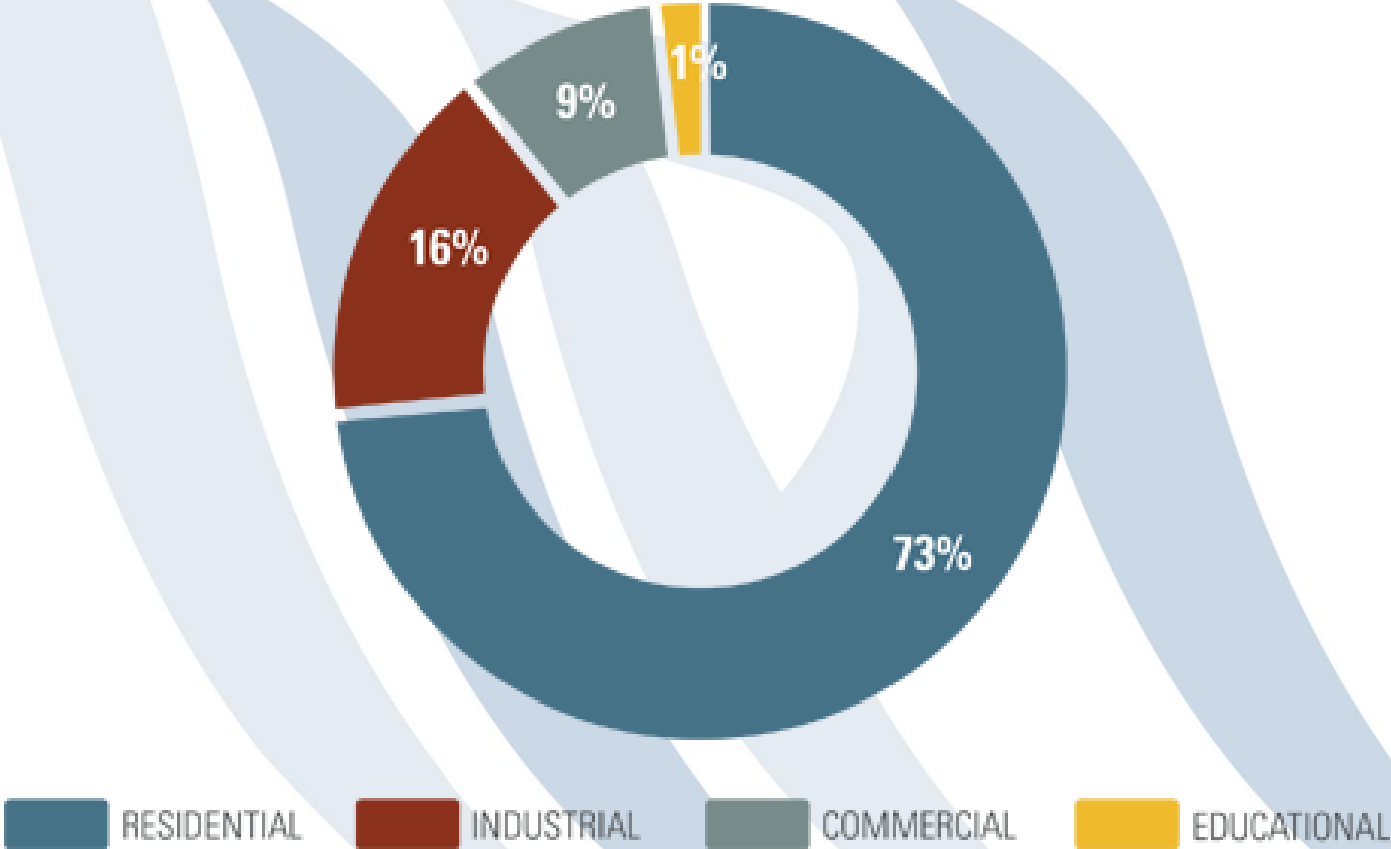
- The Lebanese Environmental Action: for Water, Air, Air Quality and the Environment**
- National financing mechanism by the Central Bank of Lebanon (Banque du Liban-BDL)**
- Dedicated to the financing of environmental conservation measure by the private sector in Lebanon**
- Aimed at improving water, air quality, resource conservation, and environment**
- Launched in end of 2015**

VI. Lebanese Environmental Action (LEA Financing Mechanism)

- Same procedure as NEEREA**
- A dedicated unit at LCEC is offering BDL the related Technical Support Consultancy Services**
- 95 projects are approved under the LEA financing mechanism with a total amount of more than 61.5 Million USD**
- 8 projects are currently in the pipeline with a total amount of more than 13 Million USD**

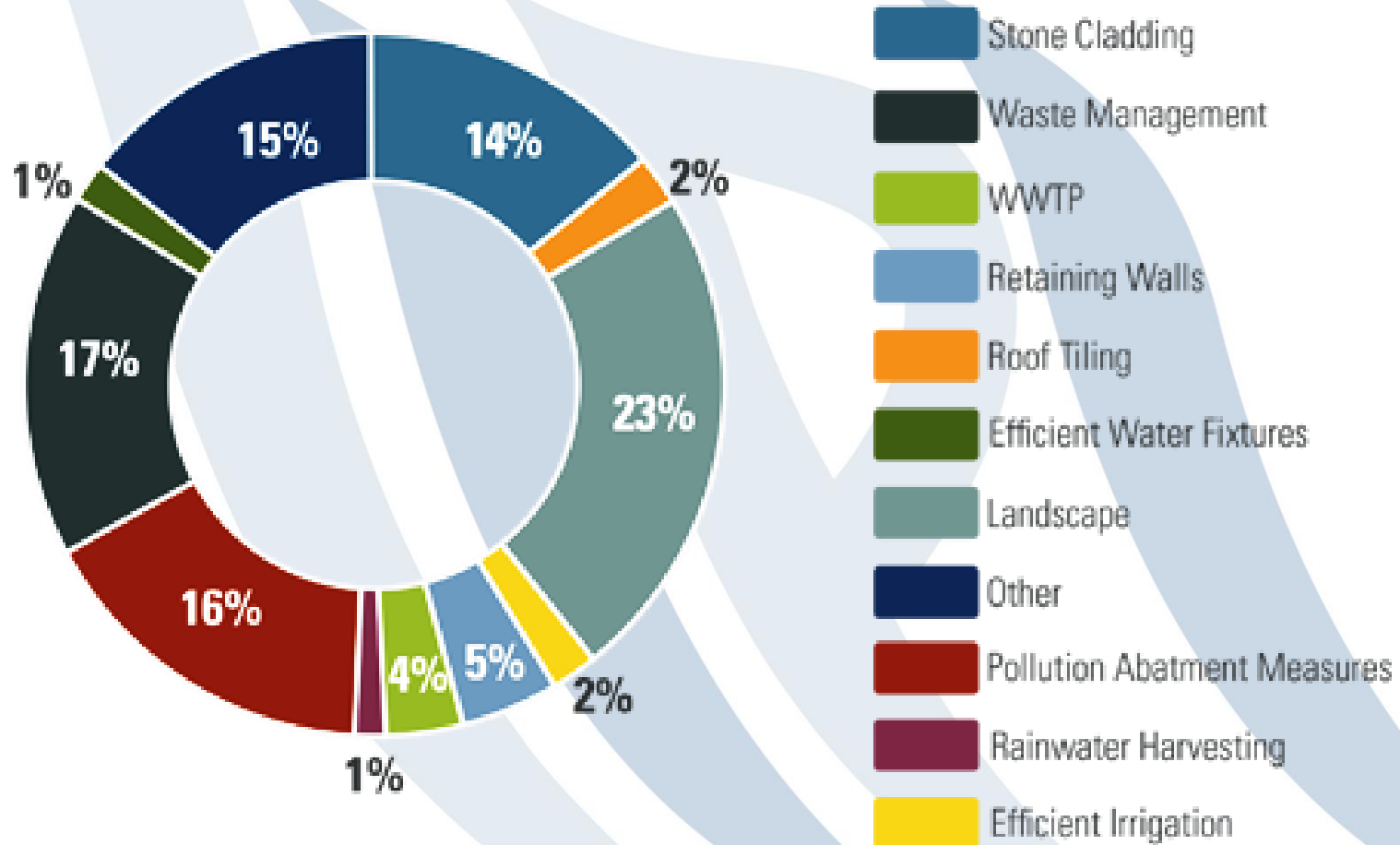
VI. Lebanese Environmental Action (LEA Financing Mechanism)

LEA Project Distribution by Sector



VI. Lebanese Environmental Action (LEA Financing Mechanism)

LEA Granted Loan by Measure



VII. The Italian Contribution

- Signature of a technical agreement on sustainable development cooperation between the Italian Ministry of Environment Land and Sea (IMELS) and LCEC on 7 July 2016**
- Approval of a project on heat-pump technologies in December 2016**
- Signature of a 5 Million Euro accord between the IMELS and BDL**

VII. The Italian Contribution

- **The heat-pump project:**
- **Builds on the NEEREA financing mechanism and offers an additional grant to promote the technology**
- **Specifically for Italian products**
- **It offers additional grants (up to 30 % of total cost) for a total value of 431,609 Euro for up to 60 pilot installations**

VII. The Italian Contribution

- **The heat-pump project:**
- **It would facilitate a wider adoption of the technology**
- **That would lead to cumulated energy savings of over 580 GWh and CO₂ emission savings of 450 million tons in the time frame 2017-2030**
- **Furthermore, at current electricity subsidies, the Lebanese government would save approximately 41 million US\$ in the time frame 2017-2030**

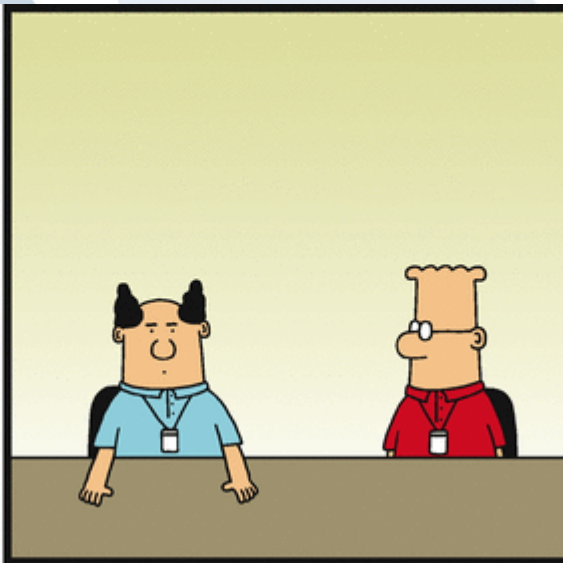
VII. The Italian Contribution

- **The BDL Accord:**
- **Builds on the NEEREA financing mechanism and offers an additional grant to promote Italian technologies and services**
- **10 % grant reserved upon loan approval and disbursed after implementation of the EE or RE project**
- **Offered to project where more than 60% of the loan value is from Italian products of services**

VIII. Final Thought



Dilbert.com DilbertCartoonist@gmail.com



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Thank You!

By Rani Al Achkar,
Senior Programmes Engineer
Secretary of the Board

Lebanese Center for Energy Conservation

LCEC Engineering Office - 240 Badaro Street
5th Floor, Nassif Karam Building
Park Beirut 2058 7703 – Lebanon
Email: rani.alachkar@lcecp.org.lb
Tel/fax: +961 (0)1 389 189
+961 (0)1 389 589