



MoEW Energy Sector Strategy

LCRP 2017 - 2020

Energy National Coordination Meeting

Tuesday 21st of February 2017

Presented by Mrs. Suzy Hoayek

MoEW LCRP Coordinator

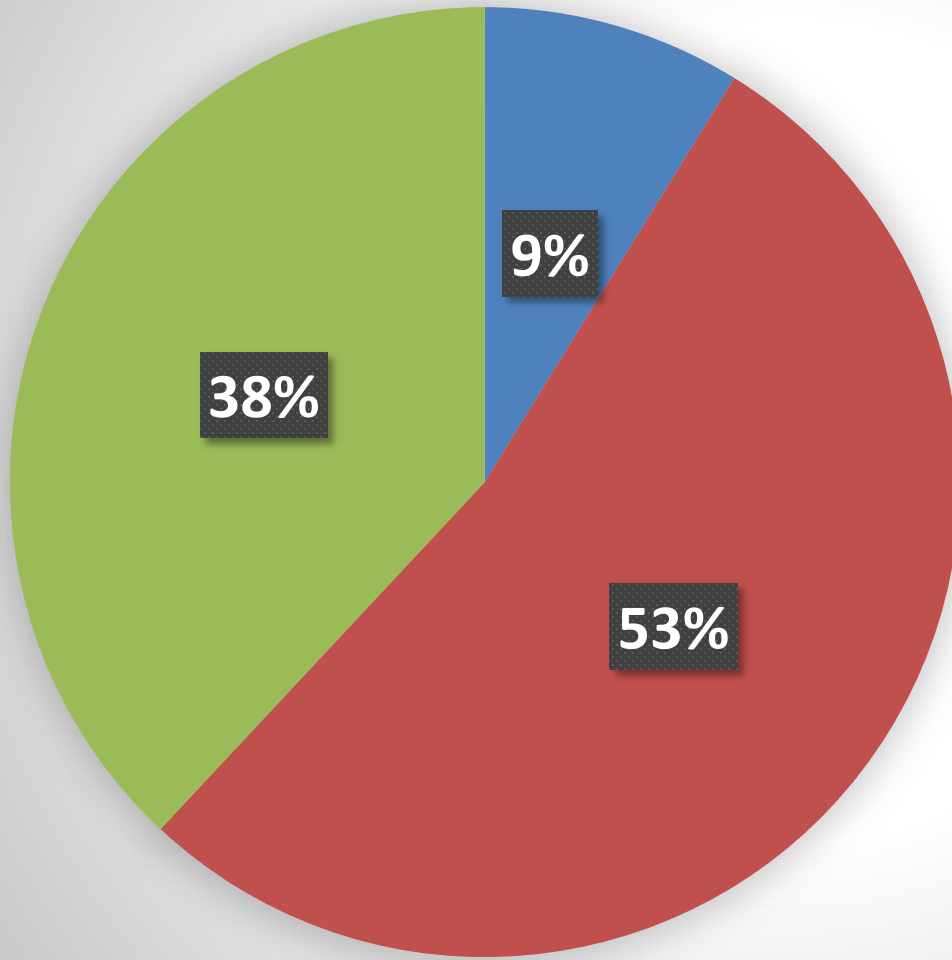
Outline

1. Situation Analysis before the Syrian Crisis
2. Situation Analysis during the Syrian Crisis
3. Energy Sector Strategy under LCRP 2017 – 2020 and Priority Interventions
4. Budget and Targets
5. Coordination Mechanism with MoEW

Situation Analysis (1)

- Before the Syrian crisis, MoEW, through its *Policy Paper for Electricity Sector in 2010*, succeeded in adding:
 - **63MW** through the upgrade and rehabilitation of Zahrani and Deir Ammar power plants, and
 - **380MW** through rented power barges.
- Soon in 2017, two new power plants in Zouk and Jiyeh will become operational, adding **272MW**
- With additional **715 MW**, installed generating capacity is still insufficient relative to peak demand.
- **Efficiency of the existing system** is below normal levels due to poor maintenance, deterioration of facilities, high losses and the need for reinforcement of the transmission network.

Additional Capacity since 2010 (MW)



- Deir Ammar and Zahrani upgraded power plants
- Rented power barges
- Zouk and Jiyeh new power plants

Situation Analysis (1)

- Lebanon witnesses extensive load-shedding, with **supply cuts up to 12 hours/day** outside of Beirut.
- Consumers rely on costly, environmentally unfriendly, small **diesel generators** to provide the balance of the electricity requirements.
- **Electricity tariffs** are far below cost recovery and does not cover the cost of fuel and the investment needs.
- Therefore, GoL **subsidizes of the cost of fuel** used in EdL's power plants (\$2.1 billion in 2016)

Situation Analysis (2)

- During the Syrian crisis, MoEW/UNDP study reveals the need to generate **486MW** to cover the demand of 1.5M displaced Syrian.
(*LCRP strategy was based on 450MW before final study results*)
- **Impacts** of the additional load created by the displaced Syrians:
 - a. Reduction in the **supply quality and quantity** to the baseline Lebanese population (voltage drop and increased supply cuts due to damaged transformers; 320 persons per transformer instead of 220)
 - b. Consumption of Syrians met through private **generators** or **non-metered connections** (45% of the displaced)
 - c. Non-metered connections imply **unpaid bills**
 - d. Collected bills do not allow further rehabilitation or extension of the grid.

Situation Analysis (2)

- e. **Electricity fees** paid by Syrians to EdL and private generators increases their frail economic situation.
- f. **Economic losses to businesses** which would be more productive if electricity supply was improved and if their expenses paid on private generators were reduced.
- g. Reliance of **schools, hospitals, WE's** and **municipalities** on expensive private generators.
- h. **\$111 million** losses incurred by the Lebanese consumers for relying on private generators instead of national supply
- i. Cost to EdL of providing additional 450MW estimated at **\$313 million** in 2016, causing a deficit of **\$222 million** a year difference between the fees collected from Syrians and cost of production.

Energy Sector Strategy

LCRP 2017 - 2020

- While MoEW continues to implement its **Policy Paper**, several initiatives can be undertaken to relieve the demand on the national electricity network. These initiatives proposed under the LCRP are **aligned with the ministry's plans** and are meant to be **sustainable**, have a lasting effect after the crisis and have low operation and maintenance cost.

- 1. Supply side management:** Increase production through Renewable Energy sources
- 2. Demand side management:** Promote the use of Energy Efficient products
- 3. Transmission network reinforcement:** Rehabilitation and/or Upgrading of Substations where they are overloaded
- 4. Distribution network reinforcement:** Rehabilitation and/or Renewal of Transformers where they are overloaded

Priority interventions

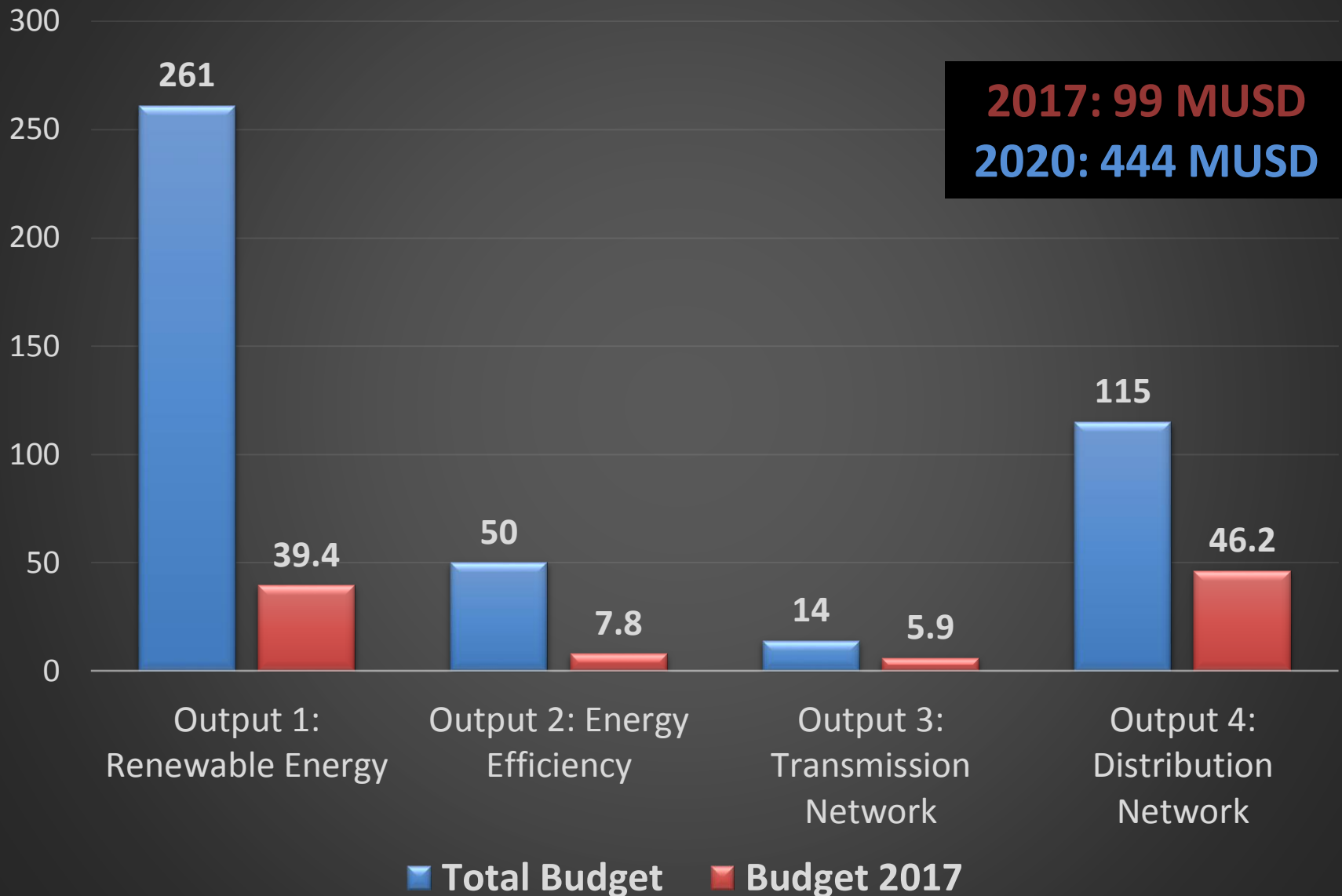
One Outcome: Provide improved access to safe, equitable and sustainable Electricity to all

- A. Output 1: Generating Power through Renewable Energy
 - a. Solar Water Heaters for Residential Facilities
 - b. Solar Off-Grid Lighting around IS and on public municipal streets
 - c. Solar Powered Pumping for Public Wells
 - d. Solar PV Farms for Electricity Generation
- B. Output 2: Encouraging Use of Energy Efficient Products
 - a. Indoor LED Lighting and Solar cookers in Households

Priority interventions

- b. Indoor LED Lighting, Lighting Control and Energy Audits in Public Institutions, like schools and hospitals
- C. Output 3: Reinforcing the Transmission Network
 - a. Upgrading or Constructing of 10 HV/MV **Substations** proposed in affected areas
- D. Output 4: Reinforcing the Distribution Network
 - a. Rehabilitation of 1500 existing and Renewal of 700 MV/LV **Transformers** with associated Poles and Cables proposed in affected areas

Energy Sector Budget



Targets and Partners

Target 2020

Target 2017

Displaced Syrians	1,500,000
Vulnerable Lebanese	1,500,000

597 Public Healthcare Institutions

90 Public Healthcare Institutions

160 Public Schools

24 Public Schools

4 Water Establishments

4 Water Establishments

1 Ministry (MoEW)

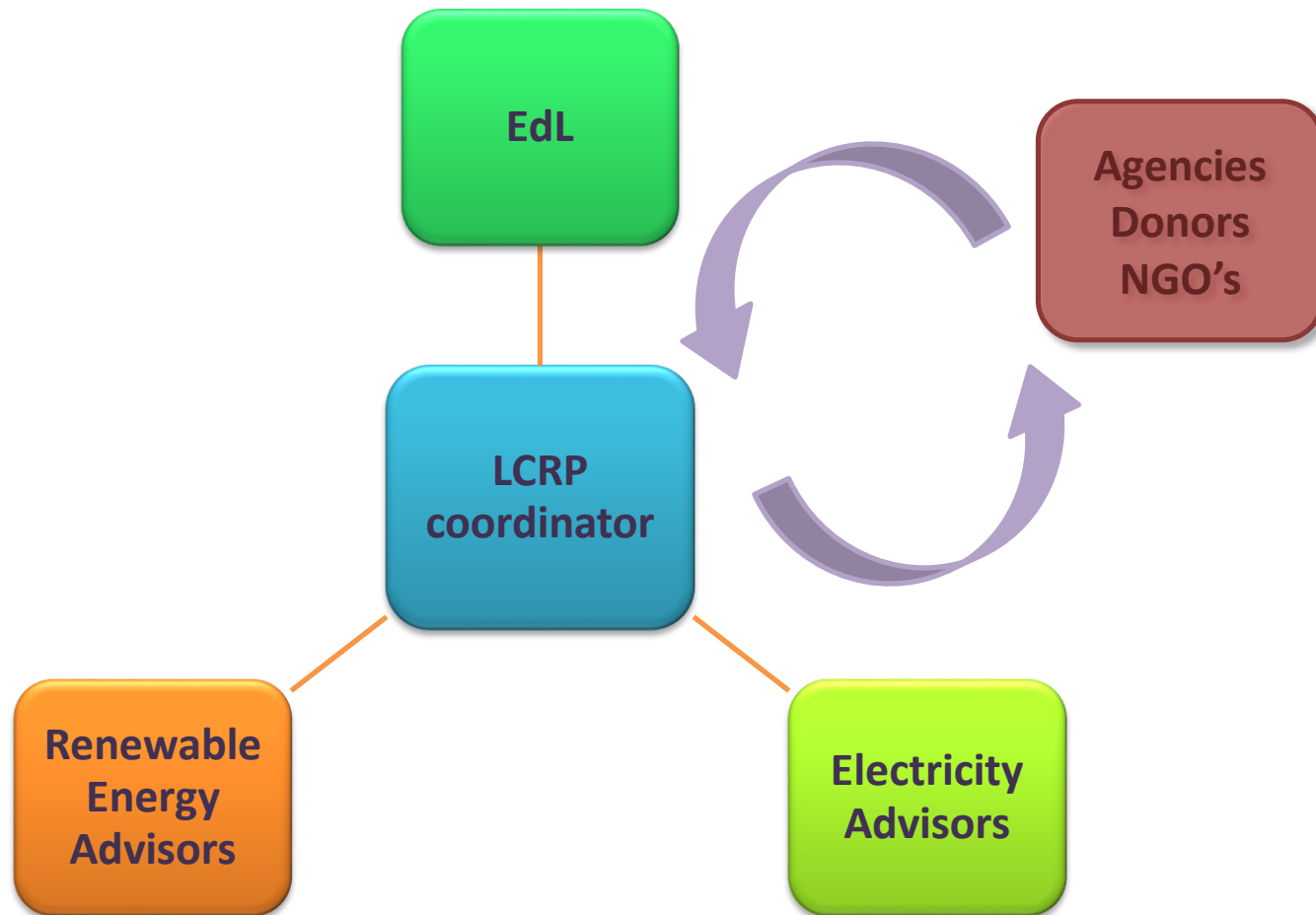
1 Ministry (MoEW)

Municipalities (TBD)

Municipalities (TBD)

14 Appealing Partners in 2017

Coordination Mechanism



Thank You