



LEBANESE CENTER FOR ENERGY CONSERVATION  
المركز اللبناني لحفظ الطاقة

*efficient resources, sustainable achievements*

# Heat Pumps Project in Lebanon and the Implementation of a Testing Facility

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# Presentation Outline

- **I. The need for air-to-water heat pumps in Lebanon**
  - **a. Lebanon Solar Water Heating Program – 2015 Market results**
  - **b. The solar ordinances**
  
- **II. Technical Agreement with the Italian Ministry of Environment land and Sea: Heat-Pump Project – Phase 1**
  - **a. Testing Facility**
  - **b. Financing Mechanism & Monitoring Program**

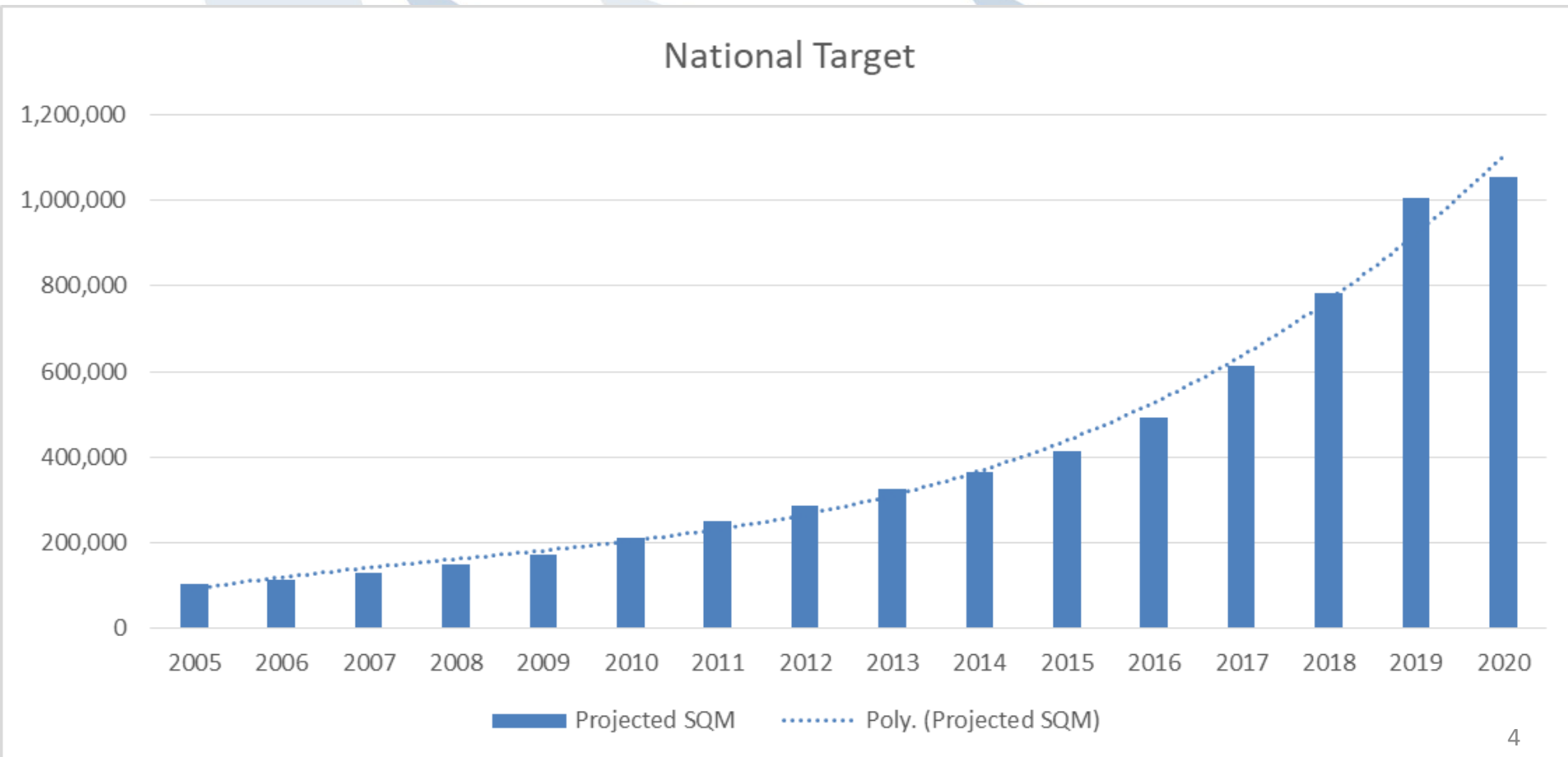
# I. The need for air-to-water heat pumps in Lebanon

## *Lebanon Solar Water Heating Program – 2015 Market results*

- *Creation of an enabling framework for the SWH market (standards, trainings, curricula, testing facility, awareness...)*
- *Interest-free loans on solar water heaters, replayed over 5 year, provided by the Central Bank of Lebanon through commercial banks*
- *200 USD subsidy to qualified systems by the Ministry of Energy and Water*

# I. The need for air-to-water heat pumps in Lebanon

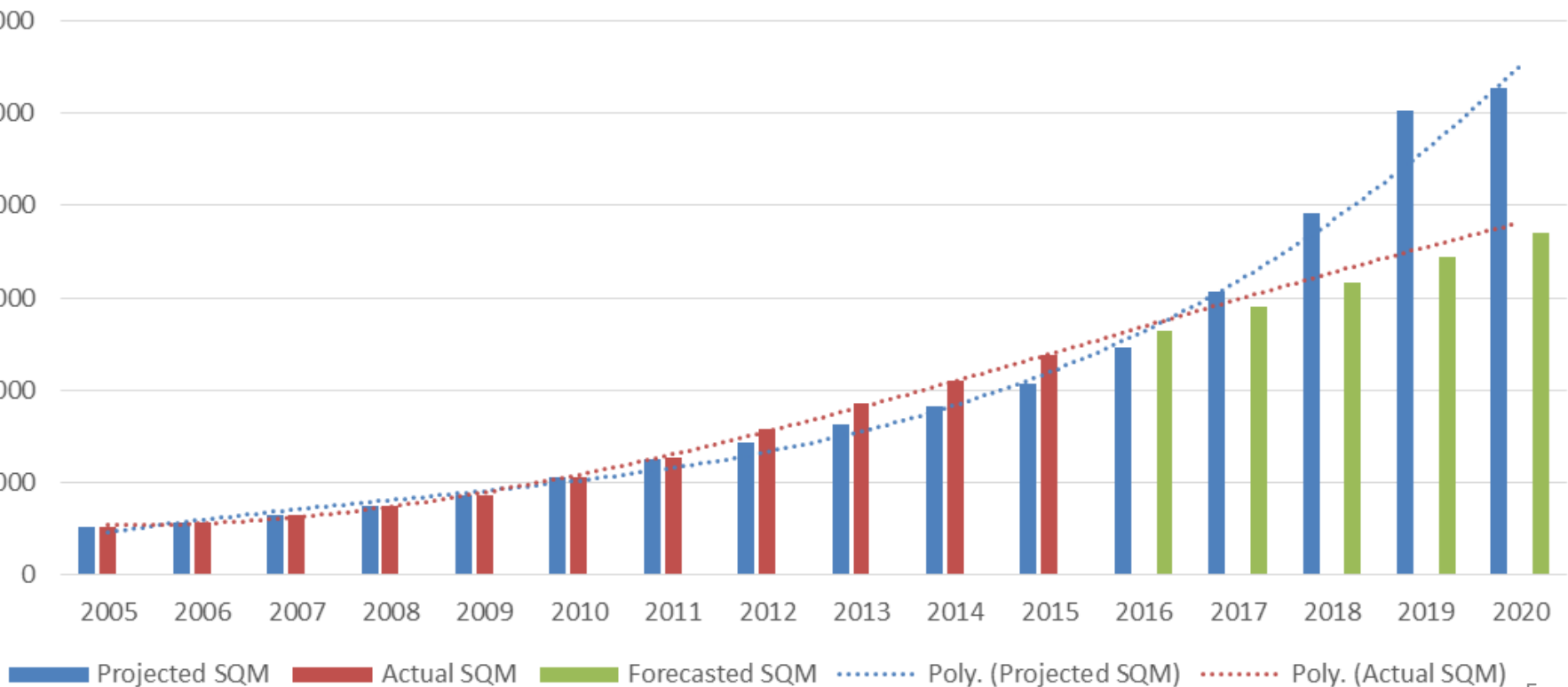
## *Lebanon Solar Water Heating Program – 2015 Market results*



# I. The need for air-to-water heat pumps in Lebanon

## *Lebanon Solar Water Heating Program – 2015 Market results*

Actual vs Projected in 2015



# I. The need for air-to-water heat pumps in Lebanon

## *The Solar Ordinances*

- *Local solar ordinance in the Union of Municipalities of Tyre (2015), within the MED-DESIRE project co-financed by the EU through the ENPI CBC MED Programme*
- *National solar ordinance at the Level of the Higher Council for Urban Planning (2018)*
- *Urban areas and high-rise buildings?*

## II. Technical Agreement with the Italian Ministry of Environment land and Sea

### *Heat-Pump Project – Phase 1 (2016) – Objectives*

- *Ensure the quality in design and installation of heat pump-based heating and cooling plants*
- *Ensure the quality of products on the market*
- *Demonstrate the economic and environmental feasibility of heat pump systems through pilot applications in Lebanese buildings (for residential and tertiary sectors mainly).*

## II. Technical Agreement with the Italian Ministry of Environment land and Sea

### *Heat-Pump Project – Phase 1 (2018-2019) - Activities*

- *Design and construction of a national test laboratory for heat pumps*
- *Creation of national standards for heat pumps testing*
- *Transfer know-how on heat pump lab testing according to the procedures defined in the previous task*



## II. Technical Agreement with the Italian Ministry of Environment land and Sea

### *Heat-Pump Project – Phase 1 (2018-2019) - Activities*

- *Provision of financial incentives such as a mix of soft loan and grant for the realization of heat pump installations in buildings (LCEC grant + NEEREA)*
- *Design and realize an energy performance monitoring program for heat pumps under real operation conditions (up to 30 systems)*
- *Dissemination activities in Lebanon and Italy*



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# Thank You!

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