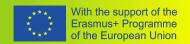


Greening Energy Market and
Finance

RECs case study Group 1b

Moaz Elsayed Francesco Gravili Jakob Gutschlhofer Brian Pisaneschi Veronika Sharafian





Introduction: Why Egypt?

- Belongs to the global sun-belt → advantageous position with solar energy
- Renewables could cost-effectively provide up to a quarter of Egypt's total final energy supply in 2030(IRENA,2018)
- PV 22 percent objective by 2022: The private sector is expected to deliver most of this capacity
- Rapidly expanding Solar Panel industry: Benban Solar Park (4th largest solar power plant in the world)



Our case

- Private School located in new residential compound (MILS in New Cairo, rooftop area 3050 m²)
- 20 km from the capital
- New residential communities
- New and modern design of houses (unique design in most of cases)
- Solid infrastructure that promotes sustainable solutions
- New life style that enable residents adapt quickly to smart solutions
- Complete set of facilities: shopping malls, cinemas, supermarkets, sports areas, etc. (→ many potential consumers)





Potential consumers





Case 1: base prices

1 medium industrial consumer: 100 MWh/year20 consumers that consume the remaining capacity(65 MWh in the first year)

NPV (10y) € 150,749.11 IRR (20y) 21%

Savings:

Prosumer €6,607/yr Small Consumer €300/yr Medium Consumer €1000/yr

Tariffs	€/MWh	goal €/MWh
Main Prosumer	150	140
Small Consumer	200	100
Medium or Industrial Cons	130	120
Costs for Investor		
PV Plant	650	per kW installed
Fee to grid manager	40	per MWh
Fee to system manager	24000	per year
Fee to system O&M&I	24000	per year



Case 2: Egypt prices

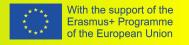
Tariffs	€/MWh		goal €/MWh
Main Prosumer		46.5	43.4
Small Consumer		62	31
Medium or Industrial Cons		40.3	37.2
Costs for Investor			
PV Plant		820	per kW installed
Fee to grid manager		12.4	per MWh
Fee to system manager	(6000	per year
Fee to system O&M&I	(6000	per year

NPV (10y): -€ 212,099.48

the issue: 820 € per KW installed

needed price for positive NPV: 355€/KW → 465€/KW subsidy

even without savings for any consumer, 385€/KW subsidy needed





Greening Energy Market and
Finance





























The information and views set out in this publication are those of the authors and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

