



STATE of PALESTINE

**PALESTINIAN ENERGY AUTHORITY
PALESTINIAN ENERGY & ENVIRONMENT RESEARCH CENTER**



**Renewable Energy
in Palestine**

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Renewable Energy Assessment in Palestine 2010

Purpose:

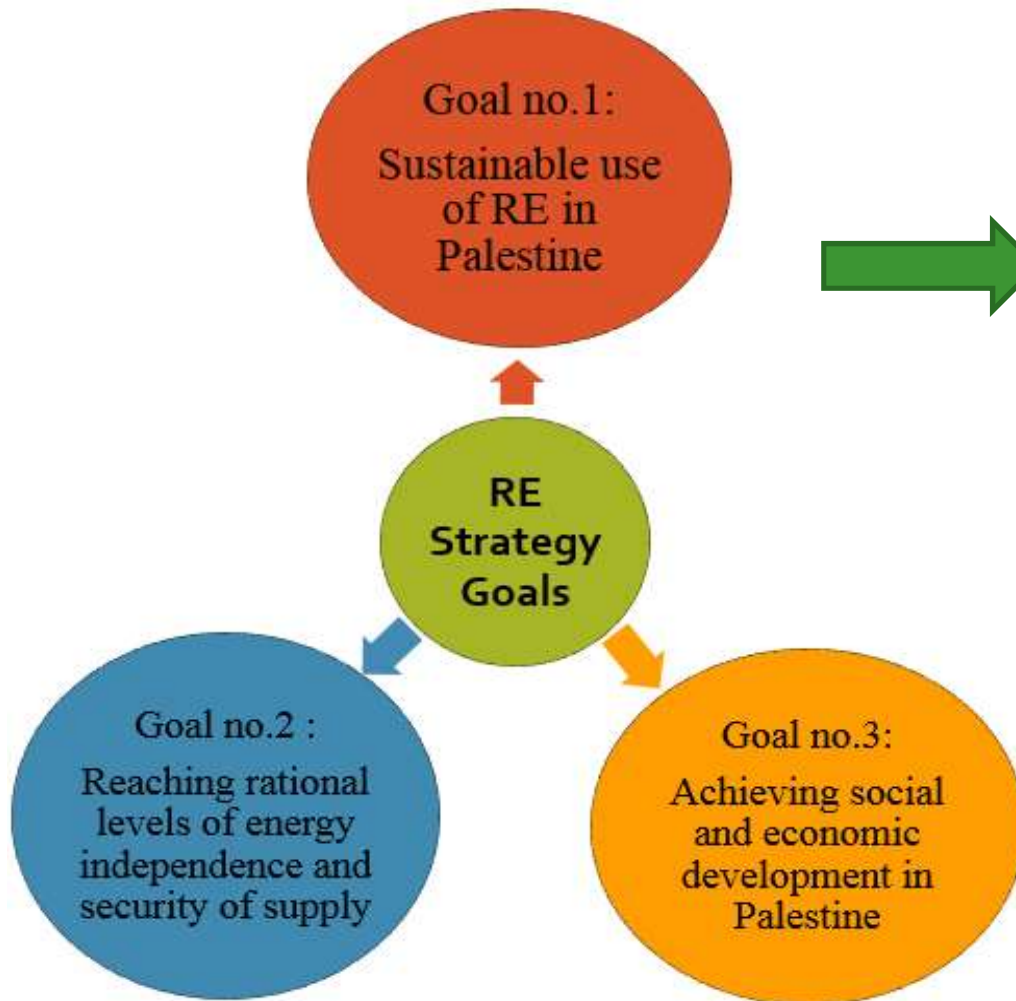
Determine the potential of renewable energy sources and their feasibility

Findings:

- On ground PV
- Small PV on buildings
- CSP
- Biogas landfill
- Biogas animal
- Wind – large
- Wind - small

Renewable Energy Strategy 2012

Goals and Rational of Renewable Energy Strategy



Main Target of Strategy

Reaching 130MW
(240 GWh)
of Renewable Energy by Year
2020

Implementation forms

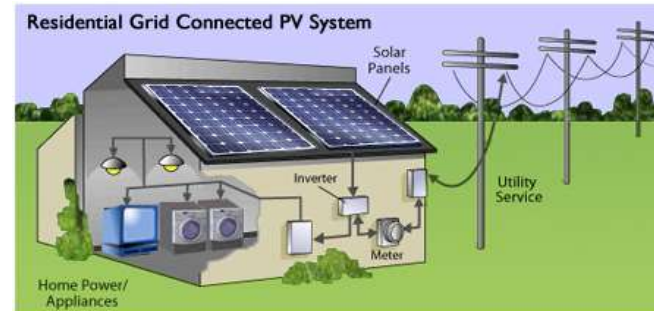
- Palestinian Solar Initiative (PSI)
- Net Metering
- Direct Bids
- Competitive Bids

Palestinian Solar Initiative (PSI)



Target:

- 5 MW until 2015
- up to 5 kW
- 1,000 homes, West Bank
- 400 homes in the Gaza
- 3 phases



Phase	2012-2013	2013-2014	2014-2015
Capacity Installed (MW)	0.5	1.5	3
Number of Homes	100	300	600
Percentage (geography distribution)	30% N	40% M	30% S

**1.07
NIS**

**0.80
NIS**

**0.54
NIS**

The Approved Mechanisms for the implementation of Renewable Energy Projects

1. The Palestinian Solar Energy Initiative (PSI) related to household sector for electrical powers amounted to 5 kW or less, for each system subject to the distinctive tariff recommended, and periodically reviewed, by the Regulatory Council.
2. Net metering system of projects of electrical power higher than 5 kW, in all sectors not exceeding a certain ratio specified in the general renewable energy strategy.
3. Tendering or competitive bidding to establish energy-generating plants for the purpose of selling electric power, 1-10 Mw
4. PPA with DISCOs, 100-1000 kW.

Schools PV projects

- **Number of public Schools (2014/2015): 2095 school**
- **Starting Phase: 82 public schools**
- **Capacity: 5, 8, 10, 15 kWp**
- **Total capacity: 725 kWp**
- **Budget: 1,015,000 \$**

- **Arizona university 3 schools 7 kWp/school**
- **World vision 30 schools 5 – 8 kWp/school**
- **More than 50 schools in Gaza funded by different donors**



PIF Schools PV projects

- **Number of targeted Schools : 500 school**
- **Capacity: 40-100 kWp**
- **Total capacity: 35 MWp**
- **Budget: 50 MMD**



RE Incentives

Tax and customs incentives for the purpose of promoting investment in the use of renewable energy technologies

- Incentives for power plants from RES in order to sell their production (≥ 1 MWp)
 - Phase 1: income tax shall be imposed with (0%) for seven years, as of the date of operation of the power station.
 - Phase 2: income tax shall be imposed with (%5) for five years, starting from the end of Phase 1.
 - Phase 3: income tax shall be imposed with (%10) for three years, starting from the end of Phase 2.
- After the end of phase 3, income tax shall be calculated based on the applicable and in effect rates.

RE Incentives

- Net Metering Projects Incentives

1. Projects registered at PIPA and benefiting from incentives stipulated in The Law shall be granted the following:
 - I. Extension of the granted incentive for projects that generate (20) kilowatt at least, for one year, according to the applicable category.
 - II. Extension of the granted incentive for projects that generate (40) kilowatt at least, for two years, according to the applicable category.
 - III. Extension of the granted incentive for projects that generate (60) kilowatt at least, for three years, according to the applicable category.
2. Projects that have benefited from the Law incentives or existing projects that have not previously benefited from the incentives, and have developed their power resources to generate (40) kilowatt at least, to use it in its project activities, shall be subject to income tax with (%5) for two years.

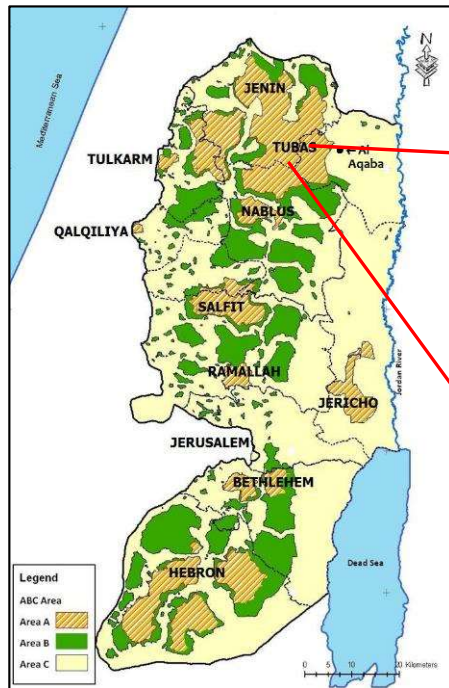
RE Incentives

- Financial Institutions Incentives

Concessional loans, granted by finance institutions and banks to finance renewable resources- based electricity generation projects, shall be treated in the same way as loans granted to small and medium- sized enterprises according to the provisions of the Income Tax Law and its regulations.

Main Photovoltaic executed projects:

Tubas (West Bank)



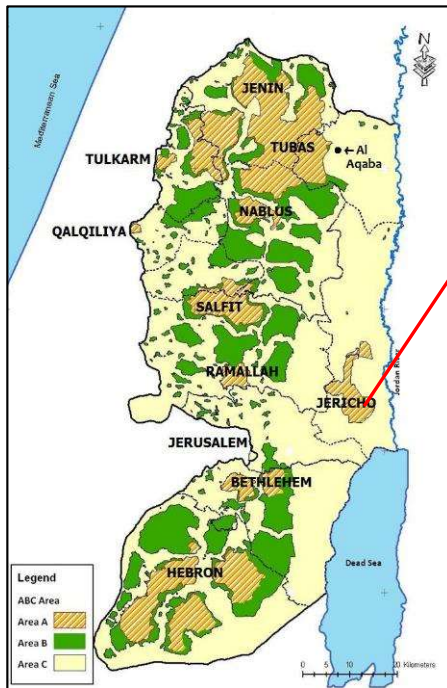
Year: 2012
Capacity: 470 Kw
Donor: Czech Republic Development Cooperation
Project value: 1.150.000USD
Estimated production: 800.000 Kwh/Year
Reduced emission : 560 Tons Equivalent CO2



Year: 2012
Capacity: 17 Grid connected stations for agricultural use (5Kwp /Each)
+ 5 stand alone projects (3Kwp/each)
Donor: Czech Republic Development Cooperation

Main Photovoltaic executed projects

Jericho (West Bank)



Year: 2010

Capacity: 300 Kw

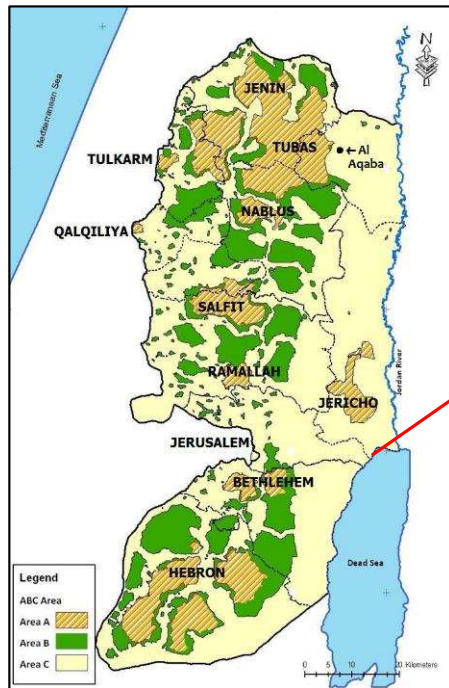
Donor: Government of Japan (JICA)

Estimated production: 422.000 Kwh/Year

Reduced emission : 290.6 Tons Equivalent CO2

Main Photovoltaic executed projects

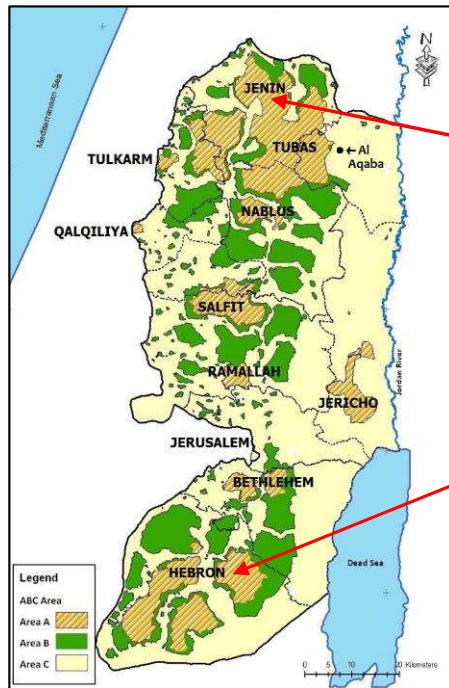
Dead Sea (West Bank)



Year: 2014
Capacity: 710 Kw
Financed by: United Arab Emirates
Total Cost: 993.800 USD

Main Photovoltaic executed projects

Jenin & Hebron University (West Bank)



Year: 2014
Capacity: 70 Kw
Donor: United Arab Emirates



Year: 2014
Capacity: 220 Kw
Donor: United Arab Emirates



Year: 2015
Capacity: multiple for 100 Bedouin families
Donor: Emirati Red Crescent



Main Photovoltaic executed projects

Other Projects

- Capacity: 70 Kw (Ramallah NPA building)



- Multiple schools in west bank and Gaza strip (up to 100 PV systems)



- Multiple hospitals in west bank and Gaza strip: 5 hospitals and 8 schools in construction stage (Czech donor)



- Capacity: 320 Kw (Ramallah coca cola building)



- Multiple stand-alone projects for Bedouin areas where Israel obstacles the transmission and supply of electricity

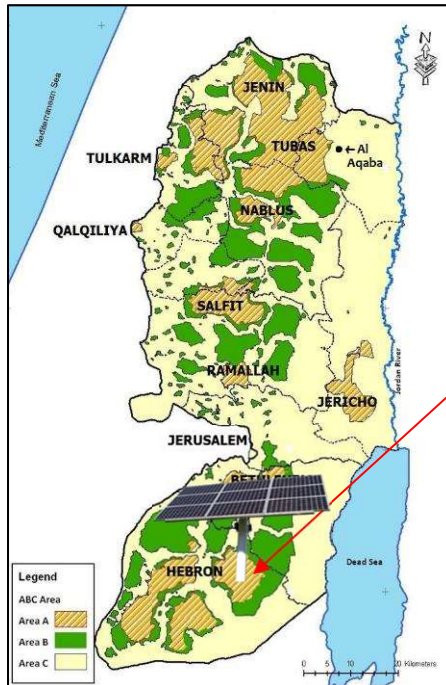


Future and ongoing Projects



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Bani Na'im project



- Land taken area: 504.100 m²
- Solar Radiation: 2058.3 Kwh/m²/Year

- Main features:
 - 96320 Polycrystalline PV modules
315Wp/each
 - 28 "1000 kVA" type transformer 33/0.315 kV
 - 28 "1 Mwatt" (2 x 500 kw) type inverter



- 28 power generation units
- 171 PV Arrays

**Estimated generation for the first
year:**

52.958 Mwh (1% of total energy demand)

Future and ongoing Projects



- 10 new solar farm (10 Mwatt /Each)
- 30 Mwatt new solar farm in Bani Na'im / Hebron
- 82 school projects 5-15 kw /Each
- 300 Houses with FIT agreement already connected and further 700 to be installed (The Palestinian solar Initiative for domestic roof top PV systems): 5 Mwatt in 3 years
- 14 issued temporary licenses for new PV solar farms (1-5 Mwatt) :

Feed in Tariff Grid connected houses in west bank and Gaza





شكرا جزيلا

