

Renewable Energy Sector

Invest in Palestine

A Leap Towards Green Energy



هيئة تشجيع الاستثمار الفلسطينية
Palestinian Investment Promotion Agency



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Country overview

- Mediterranean climate of hot summers, and cool rainy short winters,
- Vital crossroads of the three continents (Africa, Asia, and Europe),
- 300 sunshine days, annual Global Horizontal Irradiation (GHI) above 2,000 KWh/m2,
- Priority and commitment to develop sustainable renewable energy sector.

Spoken languages

French, German,
Hebrew, Italian,
and Spanish

Arabic, English
widely spoken

Population

4.8 Million

Used currencies



USD, JD, NIS, EUR

Palestinians including Diaspora

12 Million



GDP
7.7

USD Billion

GDP per capita
1,744
USD

average wage (per day)

22.2
USD



Imports (2015)

5,225

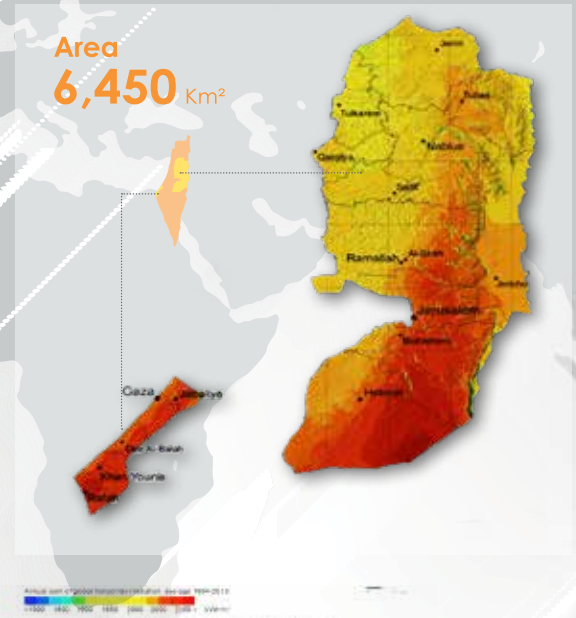
USD Million



Exports (2015)

958

USD Million

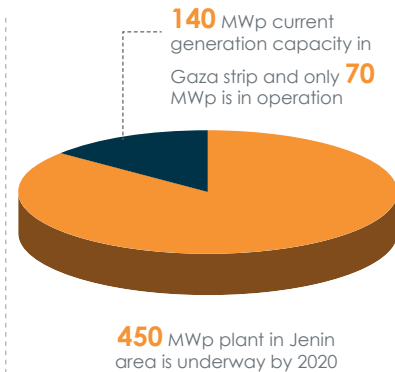
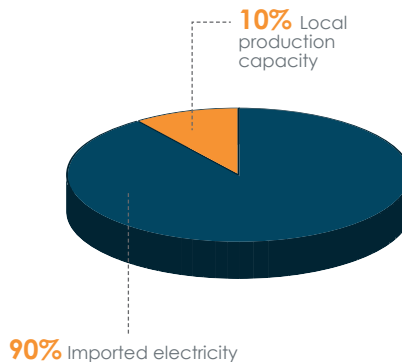
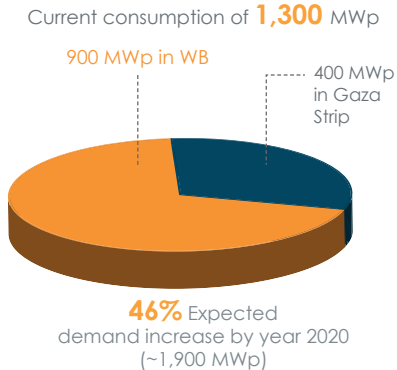


Sector overview

- Energy security is one of the major challenges that Palestine faces today and considered as a critical obstacle towards realizing sustainable political and economic independence.
- The sector is almost fully dependent on electricity imports; majority imports come from Israel, and marginally from Jordan and Egypt.



- Historically fragmented distribution grids with more than 250 connection points, this will be consolidated by Palestine Electricity Transmission Company (PETL) to 10 connection points only.
- Electricity prices in Palestine are the highest in the MENA region, forming a large portion of household disposal income.



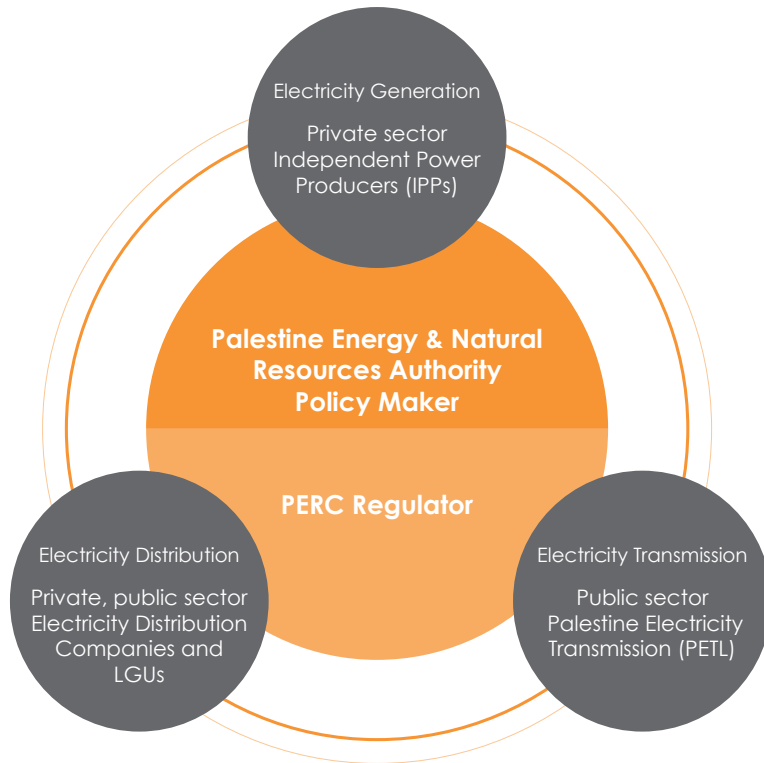
Sector overview

Capacity and price



Sector overview

Electricity sector stakeholders



Sector overview

Potential renewable technologies

- Energy efficiency measures and tools start taking place recently and officially promoted.



- Potential for Wind – Generated energy is relatively small and limited to elevated areas (above 1,000 meters), utilization of wind could be feasible in specific locations.

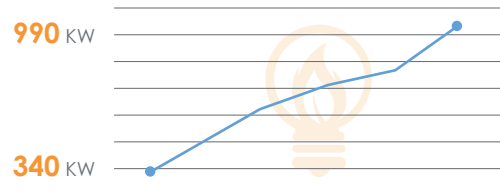


- Roof top Solar Water heating panels are widely used in residential sector in Palestine as more than 75% of households use solar water heaters.



- Waste to Energy is also part of the national strategy, however, no projects had been identified yet.

- 340 KW licence granted to generate electricity from Bio-methane and expected to reach 990 KW in the second stage to serve company farm and attached factory.



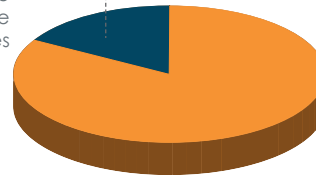
Defined regulatory framework

The 2015 Renewable Energy and Natural Resources Law came into effect to promote the exploitation and development of renewable sources, and to increase the proportion of its contribution to total energy mix, and also regulates the power purchase agreements with carriers.

Palestine has the **highest price incentive** in the region, as the country fully relies on imports of its energy needs.

The Government had set the energy sector strategy with strong emphasis of efficient and green power generation, where the vision is to build an integrated Palestinian National Energy System, which will be capable of securing energy from various sources, and will be sufficient to meet local consumption needs as well as comprehensive and sustainable development, targeting local generating of 50% of electricity needs by the year 2020, out of which 10% would be from renewable energy sources (approx. 130 MW).

10% Would be from renewable energy sources



50% Local electricity needs by the year 2020

Defined regulatory framework

Pricing

Renewable Energy and Natural Resources Law defined pricing strategy for the generated electricity from solar energy resources:



Scheme

Palestine Solar Initiative Feed-in tariff

Net metering
Below 1 MWp

Counterparts

Electricity Distribution
Companies

Pricing

Stage 1:

100 Houses for the pricing of 1,07 NIS
(\$ 0.287)

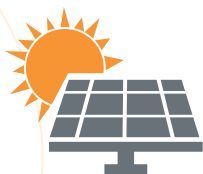
Stage 2:

300 Houses for the pricing of 0.80 NIS
(\$ 0.215)

Stage 3:

NIS 0.54 /KWh (\$ 0.145)

Sale of surplus energy generated back to
the electricity company distribution grid



Solar Stations

Direct proposal 5-1
MWp

Solar Stations

Competitive bidding

Palestine Electricity
Transmission
Company (PETL)

Max price of %90 of conventional
electricity purchase price
(the %90 currently corresponds to 9
cents / KWh)

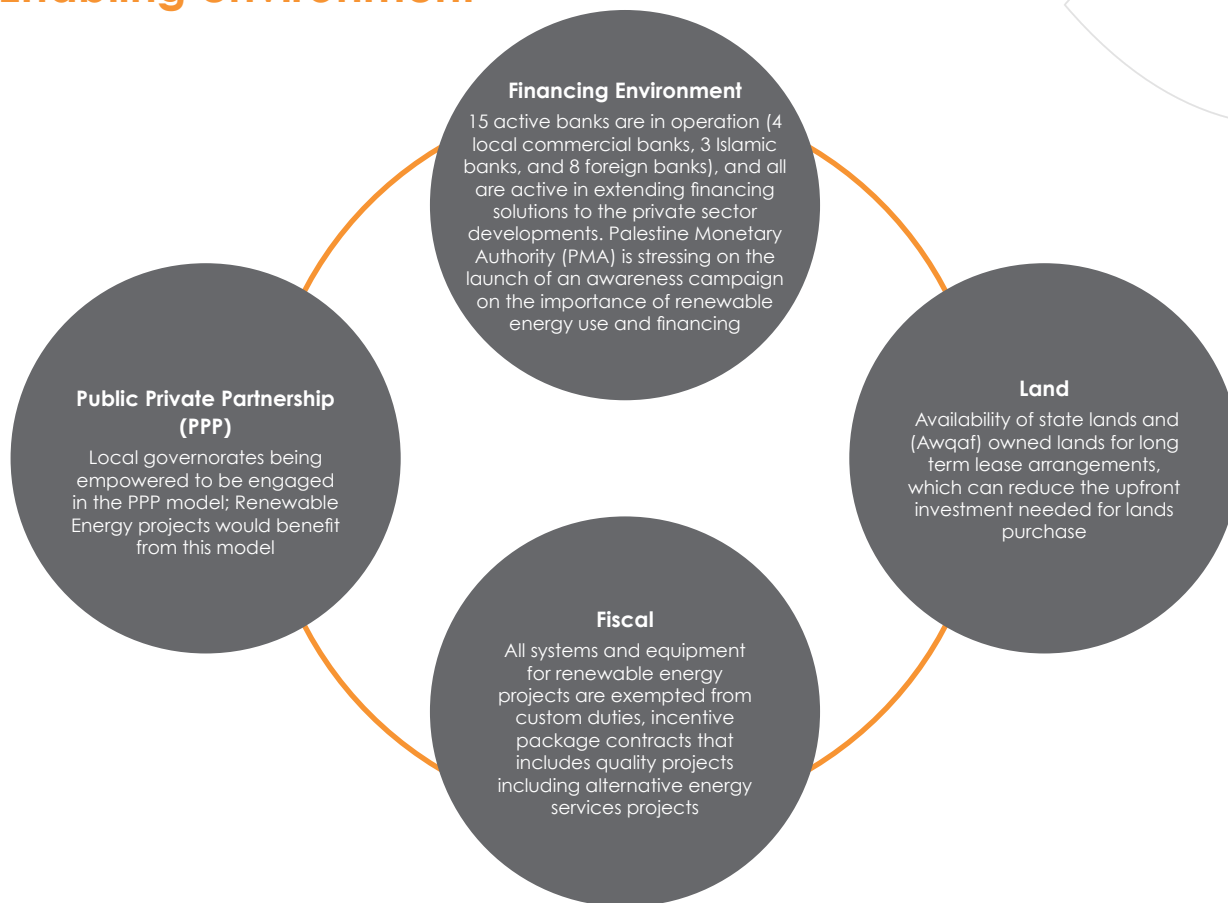
Solar Stations

Direct proposal 5-999
MWp

Electricity Distribution
Companies &
Municipalities

Max price of %90 of conventional
electricity purchase price
(the %90 currently corresponds to 9
cents / KWh)

Enabling environment



Incentive Contract Package Initiative (1 Year)

Incentive package contracts is a crucial tool within the Palestinian Investment Encouragement law over regional legislations, and gives a competitive advantage for investors to invest in Palestine, as this contract can be granted to support strategic projects, geographic location or named sector to generate jobs, technology transfer or implement international standards to protect the environment or generate energy from alternative resources.

Contract justifications:

- Increase local generated power, and decrease the Power import (given that Palestine imports more than 90% of power).
- To comply with Energy sector goal to generate 130 Mega Watt from alternative resources by 2020.
- To comply with Sustainable Development Goals by 2030.
- Reduce regular power consumptions and support incremental demand on energy for economic activities.
- Attract foreign direct investments (Foreign and Expats) and encourage local investors.
- Generate jobs in the promising sector.

Key performance indicators

800	Establishments will be targeted including utility scales
50	USD millions expected investments
5,750	Direct jobs

Targets

Local and Foreign investors, Expatriate investors, and Investment funds to implement utility scales projects, and current economic establishments to generate power for their use i.e. factories, hotels, hospitals, schools, and farms those are eligible to receive incentives by the law.

Incentives

- Utility scale projects, more than 1 Mega Watt/h power generation.
- Stage 1: 0% income tax for seven years starts from operations.
- Stage 2: 5% income tax following stage one for five years.
- Stage 3: 10% income tax following stage two for three years.

Net metering projects with less than 1 Mega Watt/h power generation.

Current projects: that enjoys incentives receive additional extension if they generates power as follow

- 20 Kilo Watt/h, extension for one year.
- 40 Kilo Watt/h, extension for two years.
- 60 Kilo Watt/h, extension for three years.

Projects never received incentives or their incentives period expired and generates 40 Kilo Watt/h subject to 5% income tax for two years.

Access to finance: loans and facilities by financing institutions and banks that finance electricity power generation from alternative resources receives same treatments as finance of SMEs as per the Income tax law and regulations.

PIPA's Board of Directors sets instructions for the contract, number of employees and their specialites.

Special considerations

Topography

Northern governorates (West Bank) topography is characterized as hilly with few plain areas; this may require more civil work for large utility scale solar parks in one location, Southern governorates (Gaza strip) topography is different and coastal plain, however, it lacks large land parcels for large utility scale projects

Power Offloading

Currently possible through Medium Voltage (MV) lines and substations due to the unavailability of High Voltage (HV) transmission lines

Investment opportunities

Available

- Utility Scale: A Portfolio of potential projects comprising of small to medium solar parks (capacity 2-5 MWp each) spread over the 16 governorates in Palestine
- More focus on prime locations with the best yield and most suitable and available lands

A few projects (above 1 MW Capacity) were either licensed or are operating

- Jenin, Maythaloona: 1.35 MW
- Beita, Nablus: 1 MW
- Tubas, 5 MW
- Tubas, Fara', 3 MW
- Jenin, Energy clusters: 2 MW
- Al Thaherya, Hebron: 1.5 MW

Projects pipeline

Potential Opportunities:

- Tulkarem – Sharawiya -5 MW
- Jericho: 1.8 MW
- Jenin: 5 MW
- Nablus: 2 MW



Investment opportunities

potential



Rooftop PV Systems to generate electricity under the net metering scheme, prioritized industrial and high electricity consumers (Hotels/ Factories/ Agriculture, Industrial zones)



Energy Efficiency projects (tools and inspections) targeting lowering consumption and reducing the CO2 emissions as per the National Energy Efficiency Action Plan (NEEAP), aiming to achieve 5% reduction of national energy consumption



Vocational Training

Opportunity for vocational training and certification by implementing internationally-recognized standards and qualifications

Investment considerations

Utility scale projects

- **130 MWp:** Implied Solar Energy Installed Capacity by 2020
- **300 -500 MW:** Implied Energy Installed Capacity by 2030
- **1 USD Million:** Avg. Investment cost for 1 MWp capacity
- **~ 9 US cents/KWh:** Power purchase agreement price
- **~ 25 years with attainable degradation rates below 20%:** Project life time
- **2-5 MWp:** Most appropriate single project capacity, to meet special considerations listed

1 MWp capacity project

- **12-15 Dunams:** Avg. land size
- **1,700,000 KWh/ year:** Avg. output
- **8 years:** Payback period
- **10%-15%:** Investors IRR
- **Financing structure:** 50% Equity: 50% Bank Loans with Potential more aggressive debt financing

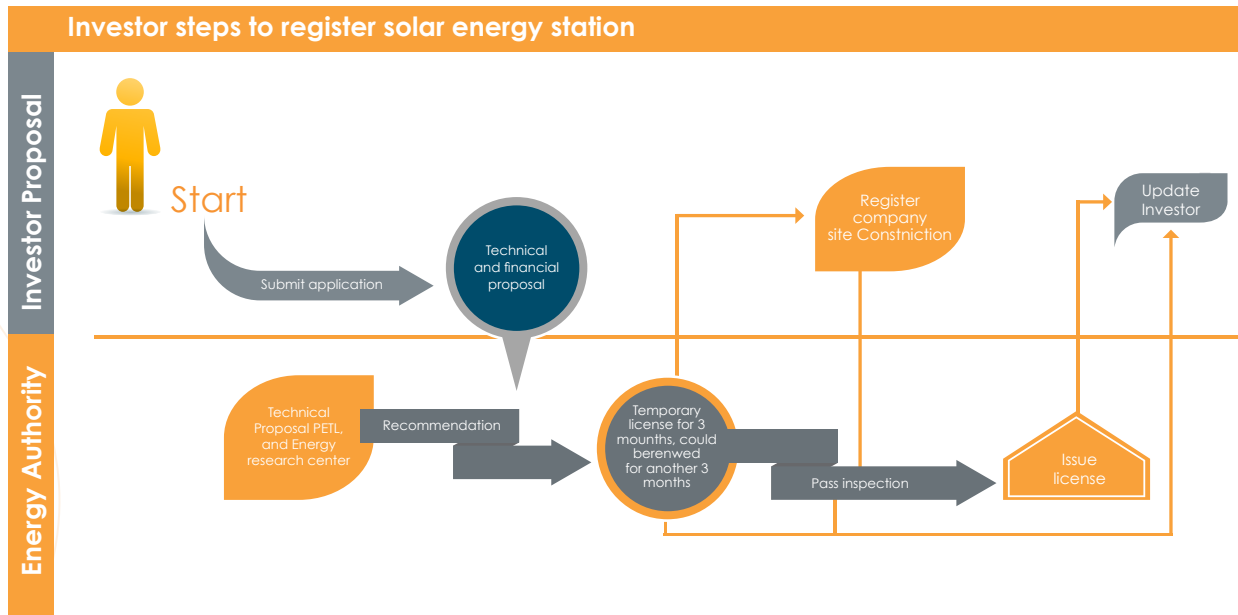
Projects' locations:

All through the country

Not to focus on Mega scale projects in one area to accommodate the current grid capacity

Station licensing process

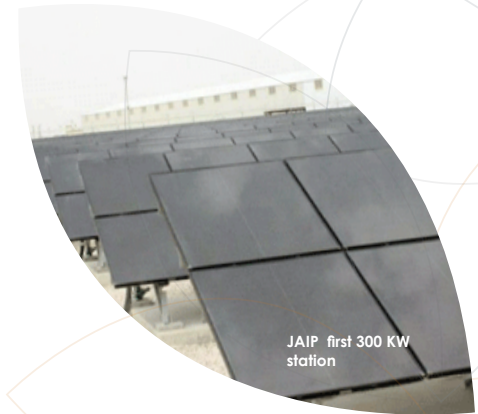
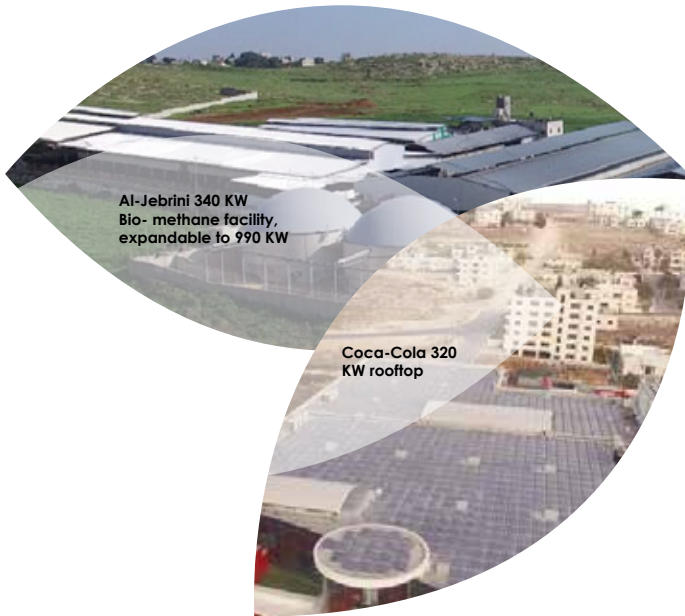
Direct proposals



Success stories

potential

Utility Scale Projects: A few initial licenses to developers were granted and in the pipeline of capacity over 30 MWp in different areas in the West Bank, and other developers are assessing additional projects in different areas as well.



Rooftop PV Systems:

Palestinian industrial and Tourism sectors are shifting to Green Energy. For example: Coca-Cola bottler in West Bank, and Poultry Company (AZIZA) in Uja (Jordan Valley) had installed rooftop systems under the net metering scheme.

Moreover, a hotel in Bethlehem, the Golden. Hotel in Al-Taybah, Royal Factory, and many other factories had installed their own PV system. Additionally, a gradual increase in residential and commercial rooftop systems are being witnessed

Why Invest in Palestine

- **Strategic Location**, linking Asia, Africa, and Europe, with access to wide spectrum markets through more than 11 commercial agreements
- **300 sunshine days yearly**, with annual Global Horizontal Irradiation (GHI) of above than 2,000 KWh/m²
- **Dynamic Economy**, representing a variety of investment opportunities for a growing country and market
- **Access to Finance** through a well-established financial system, suitable work environment, and a qualified labor force
- **Specific Incentives** for projects creating or expanding economic activities in certain sectors
- **Supportive Ecosystem** and commitment
- **Qualified Industrial Zones** strengthening the success of investment through offering services, advanced infrastructure and rewarding incentives for investments
- **Priority** to developing sustainable renewable energy sector

Palestine's commitment to investors

- **Profitable** return on investment
- **Modern framework** of economic laws to encourage and support foreign and local investments
- **Free investments** in all sectors and in any ownership percentage
- **Free transfers** of generated profits and freedom of repatriation of income generated from investment
- **Protection of investors**, no expropriation, nationalization.
- **Equal treatment** for investors of all nationalities.
- **Protection** of all confidential information.

PIPA's role

- Represents Palestine vision and its policies to promote the private sector and to define an appropriate investment environment
- Contributes to maintain and continuous development of friendly Investment environment
- Provides constantly improved customer service to foreign and domestic investors; through utilizing an effective One-Stop-Shop
- Facilitates cooperation between the private sector and the government, thereby creating and maintaining a more competitive investment environment
- Offers investors the necessary information to support their decisions to invest and start their investments including assistance in obtaining all necessary licenses. Offers updated information and data related to investment opportunities, expenditure and funding in Palestine
- Continuous relationship with investors through PIPA's After Care program



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