Economic Feature
July 2010

The Portland Trust

The Renewable Energy Sector in the Palestinian Territory

As reported in last month's Bulletin, renewable energy was given prominence at the recent Palestine Investment Conference (PIC) during a well-attended panel session. With the favourable conditions and climate, underdeveloped energy infrastructure and a need to improve independence and efficiency of supply, many are arguing that renewable energy could be a potential future growth area for the Palestinian economy. The Bulletin spoke to some of the key players and experts in the sector.

Energy needs

With an acknowledged scarcity of conventional energy resources, high population growth and volatile energy prices, many worry that there is a future energy crisis developing in the Palestinian Territory.

The Palestinian Authority spent $374m on energy in 2009, with the majority of fuel and electricity being imported.[1] The Palestinian population also pay a relatively high price for energy. Electricity constitutes about 10% of the average household income, which is much higher than the 2% of neighbouring countries like Jordan, Lebanon and Syria.[2]

The Palestinian Energy and Environment Research Centre (PEC), established in 1993, is affiliated with the Palestinian Energy Authority (PEA). It conducts a range of research on increasing the efficiency of energy usage and developing renewable energy in the Palestinian Territory. Another problem, according to the General Director of the centre, Ayman Ismail, is that 26% of energy is lost in transit due to poor infrastructure and theft. Ismail estimates that 15% could easily be saved if energy were transported and used more efficiently.

The PA is currently reforming the electricity sector by developing infrastructure and improving bill collection rates. The gas fields off the coast of Gaza could also be a future source of energy, however the costs of developing the gas industry are high and subject to political circumstances.

Without access to other domestic sources of fuel, it seems that serious consideration of renewable energy could go some way to alleviate the pressure.

Solar energy widespread

The use of solar energy for water heating is already common. According to the latest survey on household energy by the Palestinian Central Bureau of Statistics, over 60% of households use solar water heaters, which, according to Ismail, is the highest level in the region. Solar water heaters also apparently cover 40% of hospitals' water heating needs and 25% of hotels' needs. [3]

However, the widespread usage of solar water heaters does not necessarily imply an awareness of renewable energy. According to Ismail it comes down to basic economics. With 300 days of sun a year, solar water heaters are a cheaper alternative than using electricity for water heating. 90% of the solar water heaters are manufactured locally.

Other renewable technologies

In addition to solar technology there are other forms of renewable energy in use in the Palestinian Territory. Biomass, which is the use of agricultural waste for heating and cooking, is common in rural areas. There are a few wind energy projects underway, including at the hospital in Hebron.[4] Other technologies already in use include thermal energy (which is a form of kinetic energy producing heat), photovoltaic energy (a technique for converting solar energy into electricity) and geothermal energy (the pumping of air from the earth to either heat or cool buildings).

Private sector leading the way

The Palestinian Authority has made efforts to incorporate environmentally friendly techniques in different sectors, most notably construction. This includes the introduction of a construction code which highlights energy efficiency. However, adoption of the code is currently voluntary and as such its use is not widespread.

'In the absence of public sector initiatives targeting renewable energy, the private sector had to step in,' the president of MENA Geothermal, Khaled Sabaawi, told the Bulletin. This Palestinian privately owned company, established in 2008, is the first of its kind in the region. Its vision is to contribute to the building of a sustainable independent economy through investing in the renewable energy sector.

Geothermal technology uses the energy stored in the earth for heating and cooling purposes. At a certain depth, the

1 Currently the PA imports 100% of fuel needed from Israel and 92% of electricity. See: http://scholar.najah.edu/sites/scholar.najah.edu/files/conference-paper/renewable-energy-applications-palestine.pdf and http://www.imf.org/external/country/WBG/RR/2010/041310.pdf (net lending)

2 See: http://webfea.fea.aub.edu.lb/fea/research/erg/web/Energy%20Access%20Paper_AUB.pdf

3 See: http://www.pcbs.gov.ps/Portals/_pcbs/PressRelease/House_En12010E.pdf

4 See December 2009 Bulletin for background on wind energy

temperature of the earth is stable, and at different times of the year can be used for heating or cooling. Ramallah in particular has the ideal conditions for this type of technology, Sabaawi explained, as there is a big difference between the earth temperature and the air temperature. In the summer the earth temperature is significantly cooler than the outside temperature, and in the winter it is significantly warmer. Water is pumped through a system of pipes in the ground which act as a heat exchange, absorbing heat in the winter and expending heat in the summer. It is estimated to reduce costs of heating or cooling by 70% compared to other methods.

MENA Geothermal already has a number of projects underway. In January 2010, they were awarded a grant from the United States Trade and Development Agency for $438,612 to study the feasibility of installing a district geothermal system for a 500 unit affordable housing project in the Kobar district near Ramallah.[5] In April 2010, MENA Geothermal won the contract to design and install a 1.6 MW (megawatt) geothermal heating and cooling system at the University of Madaba in Jordan.[6]

Bigger private sector players can also see the potential in the sector. The Palestine Development and Investment Company (PADICO) signed a memorandum of understanding (MoU) at PIC with the French details plans to study the possibility of establishing an assembly line for solar panels, building and operating a solar power plant and establishing a company to market the solar panels in foreign markets. 'We were looking for a strategic partner with sufficient know-how', said Abdullah Sha`rawi, Business Development Manager at PADICO. He added that the project will be housed in the Bethlehem Multi Industrial Park (BMIP) when it is built. PADICO is currently involved in a range of other projects, including water, wastewater treatment and solid waste management.

International support

Donors are increasingly keen to support 'green' energy. The World Bank, European Union, Italy and Qatar are all working in the sector. The Director of the Italian Development Cooperation, Gianandrea Sandri, told the Bulletin that Italy 'is now committed to focus its attention on renewable energy sector activities, in line with the sustainable energy and climate package approved by the European Union: Solar energy, Geothermal Energy, eco-building are some of the sectors under analysis.' As part of their efforts, the Italian Development Cooperation intends to help the Palestinian Engineering Association in Jerusalem to develop a Palestinian Green Building Council's (PGBC) initiative for developing eco-sustainable initiatives in architecture and energy. Sandri sees a lot of potential in the renewable energy sector and finds the geographical situation of the Palestinian Territory an advantage. It can make a prominent contribution to the economy, he added.

Obstacles to overcome

Renewable energy initiatives are still in need of encouragement. The lack of a compulsory energy efficiency code and limited incentives for investing in the sector are just a few of the obstacles to developing the renewable energy sector in the Palestinian Territory. Investment and financing of renewable projects is a common problem and government incentives and subsidies have played an important role in many countries.

The Portland Trust has developed a proposal for a Palestinian Grant Leveraging Facility (PGLF) to overcome the financing issues for large infrastructure projects. A number of renewable energy initiatives are included in its pipeline of projects. The idea behind the PGLF is that donors should boost the private sector's ability to attract finance, by making a grant of 15% available at the outset of the project through an innovative risk-sharing revolving mechanism. A workshop was held in Ramallah in June with local interested parties, the international law firm Norton Rose Group (who are advising on the structure of the fund) and PricewaterhouseCoopers (who are advising on the development of the pipeline of projects). The Portland Trust hopes that the PGLF will be operational in 2011.[7]

Looking to the future

In line with EU targets, the PEC's vision is for 20% of total energy used to come from renewable sources. According to Ismail, renewable energy already contributes 18% to the energy supply, 9% of which is solar energy and the other 9% is biomass and other technologies. To meet this target there would need to be an increase in the use of solar energy in industry.[8]

Ismail believes that economics will only go so far, and therefore an increase in awareness of green issues within the population is necessary. There are a number of ways that this could be done. The green energy culture could be incorporated in the Palestinian school curriculum, for example. Beyond that a general marketing campaign or partnering with an international environmental NGO could help.

It is hard to quantify the overall potential benefits of renewable energy for the Palestinian economy. However, by looking at leading renewable energy economies like Germany, it is clear that there is significant potential for job creation, increased investment and environmental benefits.[9]

5 See: http://www.menageothermal.com/News/Press%20Release%20TDA%20Grant.pdf.
6 See: http://www.menageothermal.com/University%20of%20Madaba%20in%20Jordan.htm.
7 See: http://www.portlandtrust.org/Grant%20Leveraging%20Facility.html
8 See: http://scholar.najah.edu/sites/scholar.najah.edu/files/conference-paper/renewable-energy-applications-palestine.pdf.
9 See: http://www.worldwatch.org/node/5430

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