

UAE Businesses

Cashing In On Solar

Companies in the UAE are making significant gains from solar energy, whether by powering their corporate headquarters, staff accommodation, manufacturing facilities, or car parking premises.

With low unit generation costs, varying from US\$0.05 to US\$0.08 (AED 0.18-0.29) per kilowatt-hour (kWh), economically viable payback periods ranging from two to six years, no operational requirements, and minimal maintenance costs, the advantages of solar energy have become compelling enough for many local businesses.

Electric bill reduced

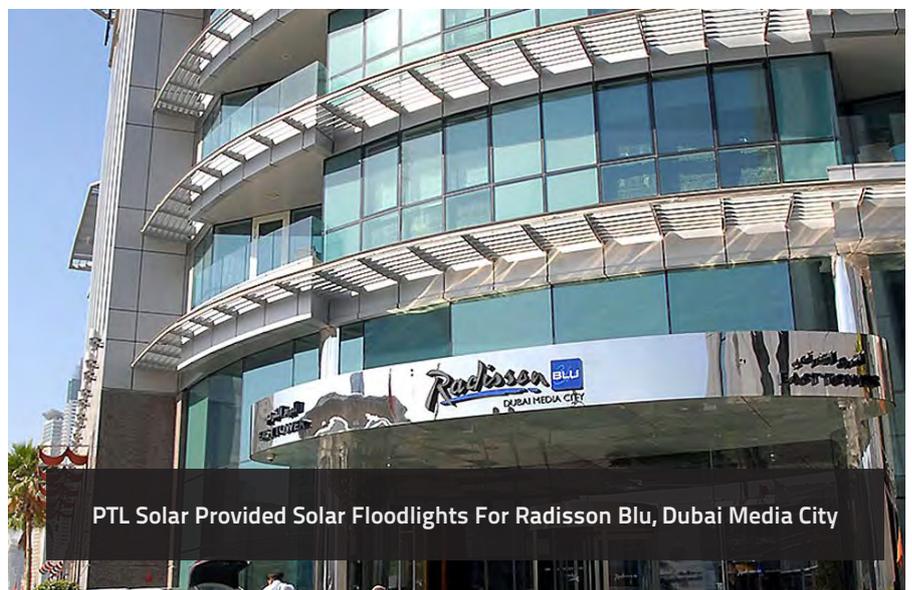
The trend especially intensified following the launch of Shams Dubai, a net metering scheme rolled out by the Dubai Electricity and Water Authority (DEWA) in March 2015 to regulate solar energy generation in buildings.

The initiative supports Dubai Plan 2021 and the Dubai Integrated Energy Strategy 2030, while contributing to the target of increasing the emirate's share of renewable sources to 7% by 2020 and 15% by 2030.

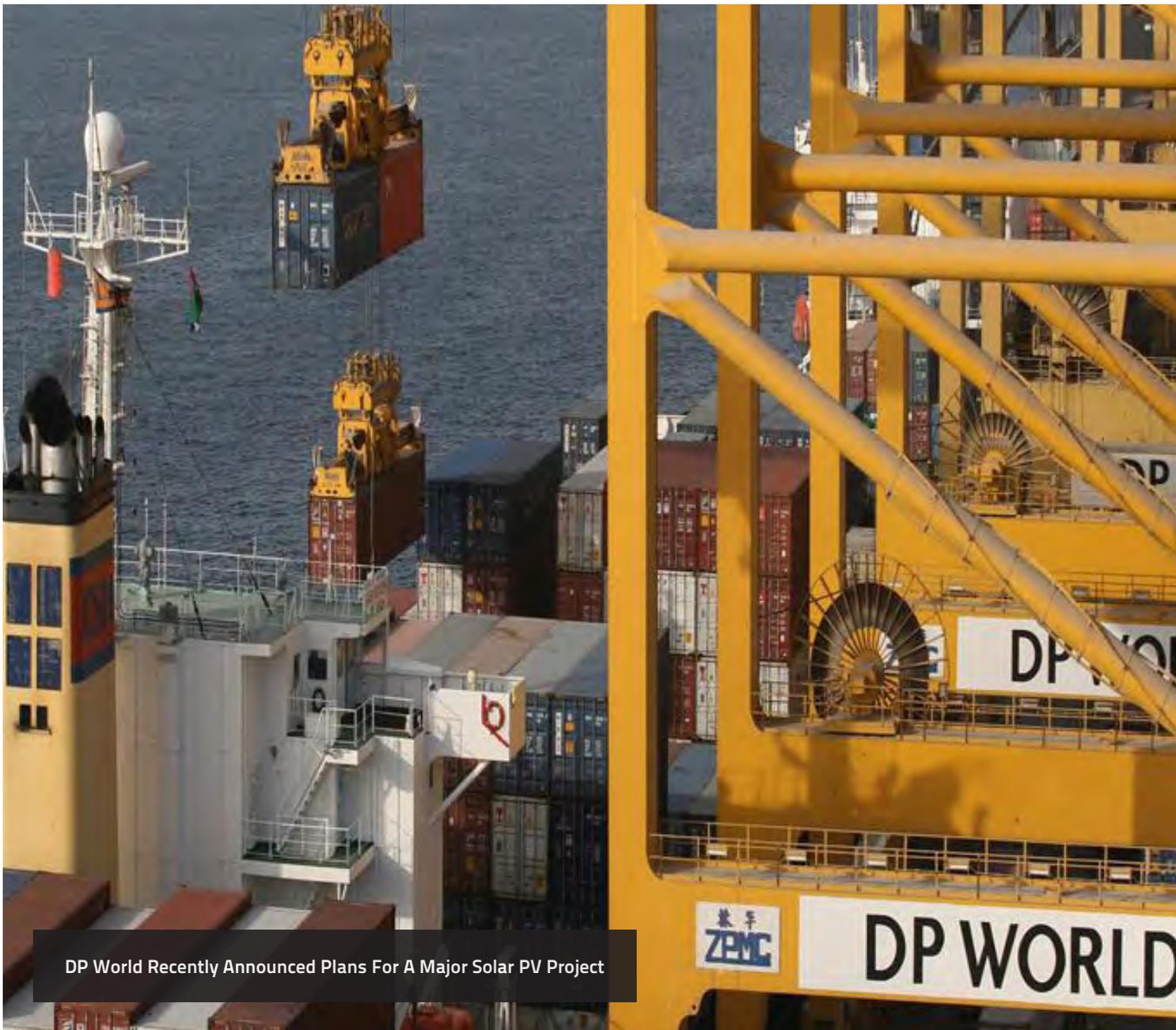
Shams Dubai encourages tenants and building owners to install photovoltaic (PV) solar panels to generate electricity and connect them to DEWA's grid. Users will then be able to consume this electricity onsite and export any surplus back to the grid, which is credited to them and



Dubai Electricity And Water Authority



PTL Solar Provided Solar Floodlights For Radisson Blu, Dubai Media City



DP World Recently Announced Plans For A Major Solar PV Project

offset from their electricity bills in the following months.

Therefore, the incentive is the savings they make on their electricity bills over the lifetime of the system, normally up to 25 years and beyond for well-maintained installations.

'It's a phenomenal change. Now, we have the ability to produce energy and the extra can be fed into the grid and pulled back whenever you need it. Residential applications now make a lot of sense, because you don't

have to invest in batteries, which increases your investment," says Moataz El Wardani, founder and chief executive of Shams Energy Solutions, an approved solar PV contractor under the Shams Dubai DEWA initiative.

Indeed, anyone can take advantage of this scheme, but because the investment return and savings depend on the amount of electricity a customer uses, the business case is usually more attractive for those with larger consumption.

Energized market

Judging by the number of solar contractors that have enrolled with DEWA since the launch of Shams Dubai, the scheme appears to be hugely successful. From just seven approved companies in April 2015, the number climbed to 23 by September 2015, and more are undergoing the enrolment process.

The new program is also attracting international developers – the latest of which was UK based Hive Energy,



Enerwhere's Hybrid Solar-Diesel System At A Workers Camp On The World Islands

having chosen to set up its Middle East headquarters in Dubai. "Solar power in the UAE has the potential to provide most of the electricity's demand," Giles Redpath, the company's CEO, asserted. "Although a major oil producing country, the UAE is taking significant steps towards introducing solar power on a large scale".

It's easy to see how government policy can positively influence investment decisions. In September 2015, global marine-terminal operator DP World announced plans to launch a major solar PV project and export surplus energy to the national grid, which is further evidence for the success of Shams Dubai.

The project will see rooftop and ground-mounted solar panels installed throughout DP World's Jebel Ali free zone buildings, parking sheds and several of its cruise terminal buildings in Port Rashid, collectively generating 30-40 megawatt peak. A tender has already been issued for the multi-phase project and a final contract is expected to be signed by the end of October 2015.

A proven scheme

Net metering is a widely used billing mechanism designed to foster private investment in renewable energy. It originated in the United States in the early 1980s when Minnesota passed the first net metering law, allowing anyone generating less than 40 kW to either roll over kilowatt credit to the next month, or be paid for the excess.

Today, this scheme has been adopted in various parts of the world, including in several provinces in Canada, as well as the Philippines, Italy and Pakistan. As a result, these countries have not only accelerated efforts to meet their national renewable-energy generation targets, but they also reduced the need for centralized power plants and eased the burden on their utility grids.

DEWA's legislation is similarly paying off by spurring interest in privately generated solar energy. However, the uptake of solar in the UAE started long before Shams Dubai became effective. As early as the late 2000s, government organisations, including Dubai Airport Free Zone, Abu Dhabi Municipality, and Jebel Ali

Free Zone Authority, were installing solar systems to light up their internal roads and car parks.

As technology improved and manufacturing capacities scaled up, the cost of solar PV modules also plummeted - by as much as 80 percent since 2008.

These sharp declines in prices were revealed in the 'Renewable Energy Prospects: UAE' report published by the UAE Ministry of Foreign Affairs, International Renewable Energy Agency, and Masdar Institute of Science and Technology in April 2015.

Consequently, confidence in the viability of solar energy grew among the private sector. Dubai based PTL Solar, for example, has provided its solar lighting and power solutions to almost every type of business, from hotels and schools to hospitals and factories.

Founded in 2005, the DEWA-approved contractor's ever-growing portfolio of customers includes hotels like Emirates Towers, Radisson Blu, and Courtyard Marriott; conglomerates such as Mars GCC, Aramex, Masafi, and AW Rostamani Group; and government entities such as Dubai Airport and Jebel Ali Free Zone Authorities.

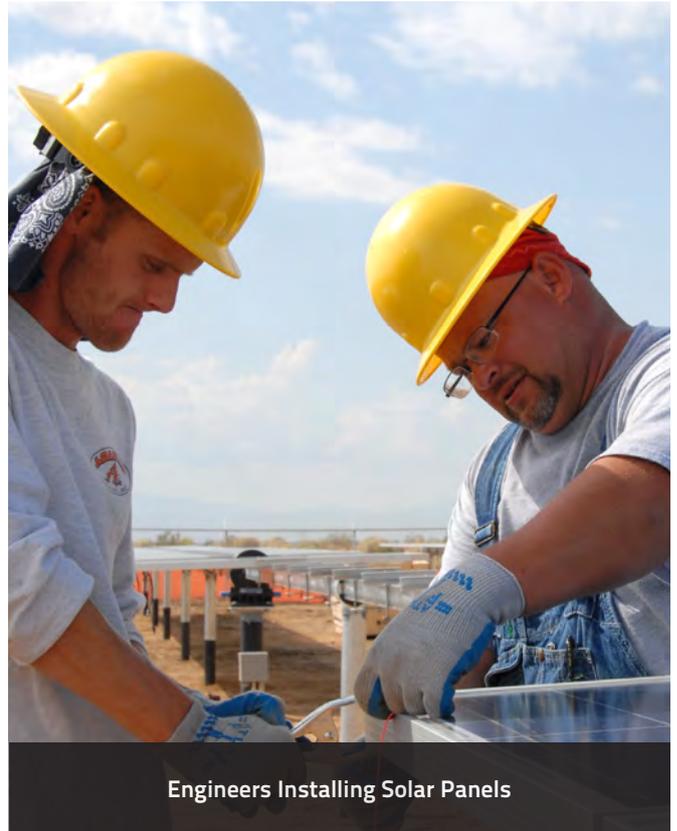
Remote operations

Meanwhile, businesses with remote off-grid operations - be it construction sites or labour camps - are often burdened by the high costs of diesel generators.

"Diesel generators are very expensive. Even at today's low oil prices, each kilowatt-hour (kWh) generated by a diesel generator costs 80-100 fils, much more than the grid tariff of around 30 fils per kWh. Using diesel generators consequently costs companies in Abu Dhabi hundreds



Installing Rooftop Solar Panels



Engineers Installing Solar Panels

of millions of dirhams each year," explains Daniel Zywiets, founder and CEO of Enerwhere, a provider of temporary and permanent solar hybrid power solutions.

The company's transportable systems replace conventional diesel generators, either on a power purchase agreement or on rental basis, saving customers 20 to 50 percent of diesel consumption. Over the typical rental contract of two to three years, this translates into cost savings of at least 10-15 percent.

One of Enerwhere's largest projects is the Saadiyat Accommodation Village, a labour accommodation facility on Abu Dhabi's Saadiyat Island, where the company manages a power supply of 4.5 MW capacity. The solar-hybrid power plant replaces 7 MW of conventional diesel generators, reducing the village's carbon emissions and annual diesel consumption of five million litres by 25 per cent.

"Companies are opting for solar primarily due to the economic benefits of renewable power over conventional grid power. Now that Shams Dubai has been launched, which enables net metering, the economics are very compelling," says Omer Ghani, CEO of Qmega, whose proprietary solar technology MICC is installed at multiple remote locations, including a desert safari camp and a massive outdoor signboard.

"We have quite a few projects in the UAE and the majority are diesel replacement. We estimate that we've delivered in excess of 300 MW-hours since we started installing them in 2014," adds Ghani. He highlights that any business with enough space to install PV panels that meet its baseload energy needs will benefit from solar energy, whether through cost savings or reduced exposure to price escalations.

Additionally, off-grid solar systems are noticeably quieter than diesel generators, and are modular and

scalable, giving businesses the flexibility to shift them from one site to the other or expand them to larger capacities.

"Off-grid solar systems require less frequent maintenance than conventional, power-hungry grid-tied air conditions, and the overall running costs are greatly reduced," says Avinash Madhavan, director of Anya Energy, a company that manufactures and installs PV systems. Where diesel generators are used, he adds, replacing or hybridizing them with solar helps businesses avoid the need for regularly transporting bulky fuel to inaccessible remote locations.

As PV prices continue their downward spiral, and as the technology continues to prove its reliability for various applications, it is very likely that Dubai and Abu Dhabi will achieve their targets and generate 7% of their energy mix from renewable sources by 2020.

- Heba Hashem