



# Harnessing the power of the sun to solve water scarcity >>>



## Why the sun is now an affordable source of energy

Solar power now represents the cheapest form of renewable energy generation available. It is highly scalable, ranging from a single photovoltaic (PV) panel through to fields of panels for grid-scale projects both on and offshore.

## UK capability in solar

The UK is a world leader in the research and development of new and more efficient solar technologies. The UK has expanded its total solar PV capacity to 14 GW by installing up to 175 MW of capacity during the first quarter of 2021, capable of supplying around three million homes using solar energy.

## UK companies with solar expertise in the Middle East

### Mott MacDonald

Floating solar or floating photovoltaics (FPV) consists of solar panels that float on a body of water. Mott MacDonald has carried out scoping and feasibility studies on Pakistan's first FPV project, adding 325MW of generating capacity, split between Tarbela's reservoir and the head ponds downstream at the Ghazi Barotha hydropower project. FPV plants offer a number of advantages over land-based solutions. They take up no space on land, are more compact, are constructed quickly and are more easily commissioned. Since the panels cover water, this reduces evaporation by up to 30% in arid climates. The cooling effect of the water close to the FPV panels leads to an energy gain of 5% to 15%. Panels can be rotated horizontally and tilted vertically to enable sun tracking (similar to sunflowers), capturing more energy than rigid units. Mott MacDonald's solution for a pilot scheme includes innovative motorised technology with GPS tracking to keep them in the same location on the reservoir without anchors.

### Desolenator

Desolenator is an Anglo-Dutch clean technology company that uses only solar power to purify water from any source, including seawater, brackish and heavy-metal contaminated water. The technology is critical in regions where seawater is the only available source, such as the Middle East. Desolenator worked with the Dubai Electricity & Water Authority (DEWA) in the UAE to install a pilot desalination plant powered by solar energy at the Jebel Ali power plant and desalination complex. DEWA has now signed a partnership agreement with Desolenator to build a scaled-up carbon-neutral water purification and desalination system completely powered by solar energy. Desolenator's scaled-up modular units each create up to 250,000 litres per day at a levelised cost of water of less than 1 USD/1000L. The technology operates with zero harmful chemicals, zero membranes, and zero energy intermittency and does not produce a toxic brine.

**Wood**

Wood, a global leader in engineering and consultancy in energy, recently completed its role as owner’s engineer on Oman Shell’s first utility-scale, photovoltaic (PV) solar project in the Middle East. The development will supply renewable electricity to a large ferrochrome production facility, displacing the equivalent gas-fired power generation taken from the grid and saving more than 25,000 tonnes of CO2 emissions annually. The Qabas Solar Plant consists of more than 80,000 solar panels and is focused on improving the utilisation, energy efficiency, and carbon intensity of energy production, accelerating solar energy development and helping to meet the growing demand for cleaner energy.

**UKSOL**

UKSOL is a private British-owned company that produces high-quality solar PV panels to 670w. The company ships UKSOL solar modules to buyers in over 50 countries. In the Middle East, UKSOL supplies solar modules to companies in the UAE, including Petrotech and Fortune Energy Services. The company also sells solar panels to companies across the wider GCC, as well as further afield in Jordan and Iraq. The modules come with a 30-year British warranty valid in all countries internationally.



**Learn more about UK renewable energy solutions for your business.**

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