

# Vast Moroccan solar power plant is hard act for Africa to follow

Alister Doyle

Ouarzazate

Rabat is building one of the world's biggest solar power plants in southern Morocco on the edge of the desert, a project largely funded by the European Union.

It is a hard success for other African countries to match as they seek to implement a global agreement to combat climate change.

The huge 160-megawatt first phase of the Noor plant near Ouarzazate contrasts with efforts by other countries that focus on tiny roof-top solar panels to bring power to remote rural homes.

At Noor, curved mirrors totalling 1.5 million sq. metres – the size of about 200 football pitches – capture the sun's heat. The sun's rays bounce off the mirrors, warms a fluid that heats a vast tank of molten salt that can drive a turbine to generate electricity even after dark.

On the sprawling site, south of the snow-capped Atlas Mountains, workers clear ground, build concrete pillars or clear off Saharan dust that dims sunshine. In Arabic, *noor* means "light".

Morocco is showcasing Noor before talks among almost 200 countries in Marrakech about implementing a global deal to combat climate change.

"We hope we can be an inspiration," said Mustapha Bakkoury, head of the Moroccan Agency for Solar Energy (Masen). Many African countries are pushing to boost economic growth to end poverty, while seeking greener energies.

The gleaming concentrated solar power plant is not economically competitive with cheaper fossil fuels but is a step to develop new technologies as prices for solar power fall sharply.

Morocco aims to obtain 52% of its electricity from clean energy – such as wind and solar – by 2030, up from 28% now.

"Unfortunately for many, it's thought that renewables are to



A thermosolar power plant at Noor II Ouarzazate, Morocco.

(Reuters)

have a light bulb or light a school... This is to get away from the caricature of renewables," Bakkoury said.

Once completed, Noor will cost \$2.45 billion and generate 580 megawatts, enough power for a city of almost 2 million people. Morocco aims to expand at other desert regions and have 2 gigawatts of solar capacity by 2020 at a cost of \$9 billion.

By contrast in East Africa, M-KOPA Solar has installed 400,000 rooftop solar panel systems costing \$200 each on homes in the past five years to provide power for lighting and a radio. That completely bypasses the grid.

M-KOPA Chief Executive Officer Jesse Moore, whose company focuses most on Kenya, Tanzania and Uganda, said rooftop solar systems were a breakthrough for Africa, where half the 1.2 billion people lack electricity.

He noted that Tesla founder Elon Musk was trying to sell solar sys-

tems to US homes.

"Elon Musk is trying to get people to leap off the grid in California. Over here on the other side of the planet, this is happening already," he said

■ In addition to abundant sunshine, Morocco has had relative political stability in recent years.

Unlike Morocco, other countries in Africa find it hard to attract investors to green projects, part of global efforts to limit climate change and floods, heat waves and droughts, which are a threat to Africa.

In addition to abundant sunshine, Morocco has had relative political stability in recent years and a predictable legal and banking system, helping it attract investors.

Even so, Morocco had a series of street protests after the death of a fishmonger, crushed to death in a garbage truck following a confrontation with police, in one of the biggest and longest challenges to authority since the 2011 "Arab spring".

"Morocco is particularly suited for a large-scale project. It may not be suitable for all other countries," said Roman Escolano, vice-president of the European Investment Bank (EIB).

The European Union, including the EIB, has funded about 60% of Noor. Masen issued Morocco's first green bond, of \$117.3 million, November 4th to help finance Noor.

Unusually for a desert, Morocco has water from the Atlas Mountains to help clean off dust. Also, in some countries, power lines from remote parts of the Sahara could be vulnerable to attacks. Noor's pylons have red spikes to discourage intruders.

Reuters

# Shortage of thread causes Syria's last weavers to abandon looms

Omar Haj Kadour

Ariha

With the deftness of decades of experience, Abu Mohammad wove thick green thread with a wooden loom in north-western Syria, creating a vibrant geometric pattern renowned among Arabic textiles.

It was the last day before the weaver, in his 50s, would be forced to close the workshop, leaving the last five remaining looms in his hometown of Ariha in Idlib province to gather dust.

"This trade is dead now... Today is our last day of work on the loom as we don't have any more thread," he said

■ Weaving has been devastated by Syria's 5-year war, with thread becoming too difficult to procure from Aleppo.

Weaving has been devastated by Syria's 5-year war, with thread becoming too difficult to procure from Aleppo, once the country's artisanal

hub but now ravaged by fighting and bombardment.

Aleppo, 70km north-east of Ariha, was the main provider of the rough thread needed to weave Arabic textiles, versatile fabrics turned into rugs, furniture covers and other household items.

Aleppo's rebel-held eastern districts are besieged by government forces, making it impossible to obtain thread from there and materials from the regime-controlled west are too expensive, Abu Mohammad said.

Even though it was his last day, he worked as enthusiastically – as he had since his teenage years – pulling wooden levers to lay down colourful acrylic fibre across a white base. The sound of the panels smacking against each other was interrupted only by Abu Mohammad's nasal singing or a brief tea break with fellow weavers reclining on a shabby couch.

"Ariha, in Idlib province, is the most well-known in making this product," said Abu Mohammad, gesturing to the green-and-red blankets and pillow cases hanging on the wall behind him. "We make all household items, from rugs for bedrooms to covers for the Quran. We would furnish entire houses."

"Before the war, there were more than 100 looms in Ariha but the only ones left are the ones in this shop,"

he said.

As the siege on eastern Aleppo's tightened and access to thread became more difficult, only three looms in the Ariha workshop remained active.

"Before the war, our trade was booming. We could buy thread for pennies from Aleppo," Abu Mohammad said. He pulled out a small box containing dozens of spools of colourful thread: "This is all we have left."

■ Today transporting the woven goods – whether in or outside Syria – takes two to three months.

A kilogramme of the blend of cotton and polyester used for the textiles costs \$7, up from about 81 US cents. Abu Mohammad points to a rug hanging on the wall: "Before, I could make this whole rug with just 200 Syrian pounds (93 US cents)."

Another lifelong weaver, 40-year-old Abu Mostafa, said he began working a loom when he was about 12. He tried to find work in a different field but never felt comfortable doing anything except weaving, he said, as he pumped the wooden panels below his loom.

"I went to Lebanon and worked in

construction and then to Turkey for a few months but I couldn't hold any job that kept me away from a loom for too long," he said.

Abu Mostafa beamed with pride as he reminisced about the robes and pillow covers he would produce. "No one else could make the pieces we made. They looked as if they were printed," he said. "I challenge any computer to make something like this!"

The products from rebel-held Ariha were once sold across Syria. Even as the war raged on, they were exported to areas controlled by regime forces such as Damascus and Hama, as well as regional markets in Lebanon and Saudi Arabia.

Today transporting the woven goods – whether in or outside Syria – takes two to three months and is exorbitantly expensive.

"We used to send our products to Damascus at 10am and they would get there by 2pm," Abu Mohammad said.

Despite the pressures, Arab textile production will resume eventually, the veteran weaver insisted.

If there was enough thread, "we could work 100 looms at once. The looms are all ready, we just need the thread," he said.

"It's a shame it's going to end like this."

Agence France-Presse

## Briefs

### Egypt pumps \$2 billion into banking system

Egypt's central bank has issued \$2 billion in bonds to international creditors to buy assets and restore liquidity to its financial system. It did not elaborate on who the lenders were, saying only that the bonds had been taken up by a "consortium of international banks" and would have a maturity of one year.

The Egyptian economy has been reeling since the revolution of 2011. A series of jihadist attacks on foreign tourists have dealt further damage.

Saudi Arabia and its Gulf Arab allies extended substantial credit to shore up the financial system but relations frayed amid differences over the civil war in Syria and Saudi Arabia halted promised loan-funded deliveries of fuel.

Egyptian President Abdel Fattah al-Sisi pledged to carry out long-delayed structural reforms demanded by international lenders even at the expense of austerity measures that could fan social discontent. In return the International Monetary Fund has promised to recommend approval of a \$12 billion loan for Egypt.

(Agence France-Presse)

### Iran's Airbus purchase gets boost

Iran reached a deal with a foreign leasing company to finance the first 17 jets it plans to buy from Airbus, breaking a logjam stopping importation of the aircraft, people familiar with the move said.

The deal removes a significant hurdle to securing the first tranche of jets, following uncertainty over financing and political opposition in the United States and Iran, though the sources caution months of talking have uncovered new potential hurdles.

Iranian officials declined to name the lessor involved but industry sources said in September that Iran was in advanced talks with the United Arab Emirates' Dubai Aerospace about helping to finance the purchase. Dubai Aerospace and Airbus declined to comment.

Under the deal, the leasing company would take over part of Iran's order for dozens of new jetliners and then lease them to the country's flag carrier.

Tehran provisionally ordered more than 100 jets each from Airbus and Boeing after a deal with major powers to lift most sanctions on Iran in exchange for curbs on nuclear activities.

(Reuters)

### Iran signs major gas deal with France's Total

Iran signed a deal with France's Total to develop a major offshore gas field, its first big contract with a Western energy firm since the lifting of sanctions.

Total will lead a consortium that includes China National Petroleum Corporation and Iran's Petropars to develop Phase 11 of the South Pars field.

The firm's head of Middle East exploration and production, Stephane Michel, said there would be a total investment of \$4.8 billion – with the development and operation of the project due to last 20 years.

It is the first deal of its kind since most international sanctions were lifted in January under a nuclear deal with world powers.

It marked the return to Iran of Total, four years after the company pulled out when France joined European Union partners in imposing sanctions, including an oil embargo.

(Agence France-Presse)