

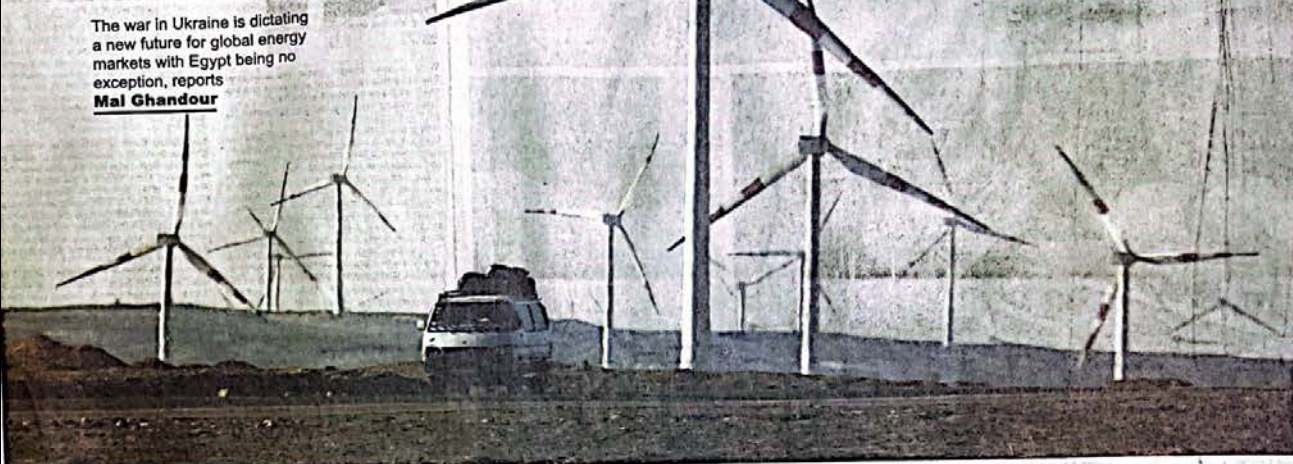
PRESS CLIPPING SHEET

PUBLICATION:	Al Ahram English
DATE:	22-December-2022
COUNTRY:	Egypt
CIRCULATION:	10,000
TITLE:	New formula for green energy
PAGE:	10
REPORTER:	Mai Ghandour
AVE:	100,000

PRESS CLIPPING SHEET

New formula for green energy

The war in Ukraine is dictating a new future for global energy markets with Egypt being no exception, reports
Mal Ghandour



The Western sanctions on Russia, one of the world's largest exporters of oil and gas, have left Europe and the rest of the world suffering from a volatile supply and rising prices of its main sources of energy.

Until the outbreak of the war in Ukraine in February, Europe's gas consumption exceeded 550 billion cubic metres, of which Russia satisfied 40 per cent. But after the West imposed its harsh economic sanctions on Moscow following its invasion of Ukraine, Russian gas supplies dropped sharply, and the EU countries have been seeking other sources of energy.

Opportunities for potential gas exporters in North Africa, namely Algeria, Egypt, and Libya, have become long-term solutions for Europe, according to a report by the European Bank for Reconstruction and Development (EBRD).

Egypt aims to make best use of this development with plans to double its revenues from natural gas exports to \$1 billion per month, Finance Minister Mohamed Moustafa said in September.

Related to the plans is the government's electricity rationing strategy, which was announced in August and aims to decrease the amount of natural gas used in generating domestic electricity in order to export around 15 per cent of the gas currently allocated to the nation's power stations.

The strategy includes decreasing street lighting, electricity rationing in public areas such as government buildings and social clubs, and putting limits on the use of air conditioning in malls.

At the same time, this year saw the country signing framework and trade agreements to import natural gas from Israel and Cyprus, liquefy it at the Idku and Damietta plants, and then re-export it as liquefied natural gas (LNG) to European and Asian markets.

Egypt aims to boost its LNG exports by 14 per cent to eight million tons per year in 2022, Minister of Petroleum and Mineral Resources Tarek El-Motaa said on 27 November, as it sought to plug the hole left by lower Russian imports to the EU.

It exported 4.7 billion cubic metres (bcm) of LNG in the first five months of 2022 and 8.9 billion bcm during last year as a whole. About 90 per cent of this year's LNG exports have headed to EU countries, compared with 80 per cent in 2021, Al-Motaa said in a ministry statement.

While renewable energy was already high on the national agenda even before the war, experts think that the present market instability has made alternative resources even more appealing, paving the way for a greener future.

In July, Egypt submitted its Nationally Determined Contributions (NDCs), a measure of the country's efforts to reduce greenhouse gas emissions and adapt to the impacts of climate change, updating the figures submitted in 2015. The new submission includes plans to reduce emissions by a third by increasing the contribution of renewables to the energy mix from the current 10 per cent to 42 per cent by 2035.

Global challenges in the energy markets following bans on Russian gas and oil exports have prompted policymakers to take action. Mohamed Al-Khayat, chairman of the New and Renewable Energy Authority (NREA), told *Al-Ahram Weekly*, adding that such challenges were also catalysts for greening the future.

A year ago, Minister of Electricity and Renewable Energy Mohamed Shaker announced 2022 would be the "Year of Green Hydrogen".

He said in December 2021 that the ministry would use solar and wind energy to electrolyse water to generate green hydrogen in what could be one of the cheapest ways of producing renewable energy.

Green hydrogen could be fuel of the future, he emphasised, envisioning that this would extend beyond 2022 to stretch over the next 10 years.

In October this year, the electricity minister reiterated Egypt's potential of producing green hydrogen at the lowest cost in the world by 2030, saying that its price could stand at \$1.7 per kg.

The government said at that time that it was studying ways of tapping into low-carbon supply chains with international partners, which could help Egypt unlock its

renewable energy potential and transition to a greener economy.

This was announced as part of the development of a national low-carbon hydrogen strategy, announced on the Energy Day that took place during the UN COP27 Climate Conference held in Sharm El-Sheikh in November.

The strategy, backed by the Sovereign Fund of Egypt and the EBRD, aims to help Egypt contribute eight per cent to the global hydrogen market, in addition to increasing the country's GDP by between \$10 and \$18 billion by 2030.

"Green hydrogen is considered the missing piece of the global energy transition and will play a pivotal role in meeting the global target of net zero by 2050," Mostafa Kandil, vice president for the Middle East and North Africa at Australia's Fortescue Future Industries (FFI), told *the Weekly*.

The General Authority for the Suez Canal Economic Zone (SCZone) has said that it is looking forward to accelerating green fuel production to meet demand from the European markets and to start supplying containers by 2026, Chairman Walid Gamaaleddin stated on 6 December.

Recent months have seen dozens of initial agreements and memoranda of understanding (MoU) to produce green hydrogen in the zone. Some estimates put the value of green hydrogen and ammonia projects in the pipeline at \$64 billion.

Gamaaleddin said that the SCZone had integrated industrial zones and six ports connected to the Red Sea and the Mediterranean that would contribute to green fuel production and supply ships.

Among the companies signing deals for green hydrogen with Egypt are Norwegian company Scatec, Hassan Allam Holding, Danish shipping firm Maersk, France's EDF Renewables, and Emirati renewable energy company Masdar.

Moreover, the country is working on tunnelling the Suez Canal, the world's longest man-made canal without locks, into a "green route", a step that aligns with ambitious plans to become a transit route for clean energy.

According to Kandil, Egypt is strategically located across different energy markets in Europe and Asia. The proximity to these makes Egypt a major potential global export hub for green and clean energy, he said.

"The government realises Egypt's competitive advantages and has been working on providing the right kind of environ-

ment and adopting a clear strategy to help attract developers to launch projects in Egypt and therefore create a more diversified and sustainable economy in the long term," Kandil added.

PROJECTS: The SCZone would sign six new MoUs with a group of international companies in the coming days for green fuel projects, Gamaaleddin announced on 6 December.

It has already signed 16 MoUs to implement green fuel projects over 20 years with \$83 billion in investments, including nine framework agreements for establishing green fuel projects in mid-2026.

A host of companies has been conducting feasibility studies for green hydrogen and ammonia projects this year after signing MoUs worth billions of dollars. The biggest project was an agreement with Maersk to work on a huge \$15 billion facility capable of producing three million tons of fuel a year.

Egypt allocated LE410 billion to green projects during the 2022-23 fiscal year, accounting for 40 per cent of total public investments, according to an infographic by the Cabinet Media Centre published in November.

The green project allocations for 2022-23 comprise LE259 billion in clean transport projects, EGP38 billion for sustainable sewerage projects, \$25 billion for clean energy projects, \$22 billion for clean water projects, \$18.5 billion for environment projects, \$14 billion for sustainable irrigation projects, and \$11 billion for sustainable agriculture projects.

Among the landmark projects announced during the COP27 was Egypt Green, the country's first green hydrogen facility, supported by an \$80 million loan from the EBRD and to be launched in the SCZone in addition to the first integrated green hydrogen plant in Africa. It will include a 100 MW electrolyser facility and will deliver up to 15,000 tons of green hydrogen annually.

Egypt Green is owned and will be built and operated by Fortiglobe, one of the largest seaborne exporters of combined urea and ammonia, Scatec ASA, a Norway-based integrated independent power producer, Orascom Construction, one of the largest engineering and construction groups in the Middle East and North Africa, and the Sovereign Fund of Egypt.

In December alone, Egypt signed a flurry of agreements for green hydrogen production and development with in-

ternational partners. The companies include Fortescue Future Industries (FFI), TAQA Arabia, UAE-based renewable energy firm AMEA Power, and British Petroleum.

FFI's Kandil told *the Weekly* that Egypt is one of its key markets globally, born out by the signing during the COP27 of a binding framework agreement with the Egyptian government on working together to study and develop large-scale multi-billion-dollar green hydrogen and renewable energy projects in Egypt.

The projects being considered have a potential capacity of 7.6 GW of renewable energy, which could produce 330 kilotons per annum of green hydrogen, he said.

However, according to a report by the Oxford Institute for Energy Studies on Egypt's low-carbon hydrogen development prospects, the first time green hydrogen was produced in Egypt dates back to the 1960s.

Egypt was one of the first countries in the region to have produced and used green hydrogen, when the Egyptian Chemical Industries (KIMA) company started producing it via hydroelectricity supplies from the Aswan Dam.

Egypt reintroduced green hydrogen to the national agenda in July 2021, when President Abdel-Fattah Al-Sisi directed the government to prepare an integrated, cross-sectoral national strategy for the production of it.

Although the green hydrogen strategy was slated for the COP27, its general framework was only unveiled at that time, and its official launch will take place by the end of the year, Shaker said in late November. Some estimate the strategy to be worth \$40 billion.

"All the world's countries are in a race to build a strong base and attractive infrastructure to attract developers to host their projects. Egypt has been one of the countries that has been presenting itself as a strong destination as a green hydrogen hub regionally and globally," Kandil said.

"Egypt has the right mix of components that can help deliver a successful green hydrogen project. For example, it has abundant renewable energy sources such as solar and wind," he added.

Green hydrogen can be produced from water using renewable energy sources and can play a significant role in decarbonising hard-to-abate sectors such as heavy industries like steel, cement, and transportation, Kandil explained.

Egypt is also expanding its wind and solar energy projects, with as much as 25 GW of wind projects lined up. Infinity Power and Hassan Allam Utilities, together with long-time partner Masdar, will build a 10 GW onshore wind farm in Egypt, set to be one of the largest in the world.

To put things in perspective, according to the US financial service Bloomberg that capacity is roughly one fifth of what the UK has today in all forms of renewable energy.

The same group is working on an Egyptian green-hydrogen facility, announced during the COP27, with an estimated production of 480,000 tons a year of the fuel by 2030. It is also expanding wind energy production with more than 10 wind farms recently announced in Zaafarana, Zayt, and Ras Gharib.

With gas prices reaching all-time highs globally, natural gas exports have become an important source of foreign currency. Thus, as exporting natural gas becomes a top priority, green hydrogen will become a secondary one, Kandil said.

But since green hydrogen's environmental impact is close to none compared to natural gas, it should one day become the most important source of renewable energy, according to energy expert Medhat Salama.

That day, however, is not today, Salama noted, since there is still abundant natural gas. The exploration for new natural gas resources is being intensified, and a new discovery twice the size of the Egyptian Zohr field is on the horizon.

It is worth noting that although green hydrogen is seen as a potential future power source that could reduce emissions, according to Reuters to date it is largely limited to experimental projects.

