Energy transition egypt

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On June 17, the European Union (EU) signed a memorandum of understanding with both Egypt and Israel that creates a framework for Israel to expand its natural gas exports to Europe via Egypt. The EU also agreed with Egypt to increase collaboration on renewable energy, hydrogen, energy efficiency, and the development of trans-Mediterranean electricity interconnectors. European Commission President Ursula von der Leyen described the agreement as a big step forward "for Egypt to become a regional energy hub."

The emergence of Egypt as an Eastern Mediterranean energy hub did not start with these accords, however. Instead, the trilateral agreement was a culmination of years of deliberate efforts by the African country to reach this position.

The change in Egypt"s energy fortunes started in 2015, when Italian oil company Eni discovered Zohr, an offshore natural gas field in the Egyptian Exclusive Economic Zone (EEZ). Considered the largest field in the Eastern Mediterranean region, Zohr was estimated to hold 850 billion cubic meters (bcm) of gas -- a volume approximately equal to 15 years of Egypt"s domestic consumption at the 2020 rate. By 2018, the country became a net gas exporter.

This development was also a game changer for other regional countries that discovered gas in their EEZs. With no gas export infrastructure of their own, states such as Israel and the Republic of Cyprus began contemplating the use of Egypt"s coastal liquefaction facilities and its pipeline infrastructure to ship their volumes abroad as liquefied natural gas (LNG). Egypt had built LNG liquefaction infrastructure almost two decades ago in anticipation of its own long-term exports; but when volumes dropped, these facilities remained largely unused for years.

Cairo saw this as an opportunity to become a gas hub for the Eastern Mediterranean, and it signed a bilateral agreement in 2019 to import 85 bcm of Israeli gas over a period of 15 years through a pipeline, built in 2008, that was originally intended for Egypt to export gas to Israel. Egypt could use the gas domestically or re-export it for profit. Israeli volumes began flowing in 2020, and by the following year, Egyptian LNG exports reached a 10-year high.

The recent trilateral memorandum of understanding, along with the latest EU energy plan, formalized the mechanisms established by previous agreements to increase Egyptian LNG exports to the EU to 5 bcm this year. Simultaneously, Egypt also agreed with Lebanon to supply the latter with gas via the pipeline connecting the northeast African country with Jordan and Syria.

Egypt appears to have won the race to become the Eastern Mediterranean"s gas hub in the short term. Yet Israel -- the primary producer supplying gas via that hub -- also emerged as a winner. At the same time, however, with natural gas reserves equal to 82 years of its annual consumption, Israel is also exploring other

export opportunities, such as a floating LNG platform at the Karish gas field.

The Zohr field has been producing less than initially expected, and fresh offshore exploration is slowing down; unless newly planned drilling proves more successful, Egypt"s own offshore gas is likely to continue being consumed at home. Therefore, looking beyond the short term, Egypt appears set to rely on re-exporting gas imported from its regional neighbors, leaving it with the possibility to profit only from transit and liquefaction fees. Moreover, Egypt retained the right to use Israeli gas imports domestically if its own demand increases.

To expand its hub status and maximize profits, Cairo reached an agreement with Nicosia to build a new pipeline from Cypriot gas fields to Egypt. It also proposed new pipelines linking Israel"s Leviathan gas field directly to Egypt as well as connecting Egypt with the Greek island of Crete through their recently agreed EEZ boundary.

Yet Egypt"s medium- and long-term prospects are also challenged by the fact that parts of the world are transitioning away from fossil fuels. The term set for last month"s trilateral agreement was limited to a maximum of five years, in line with the EU"s plans to use 30% less gas by 2030 and 80% less by 2050. The EU even warned Egypt against the risks of being locked into gas for an extended period of time.

Thanks to its location and infrastructure, Egypt has a number of energy export options, and its hub plans are not limited to gas. Over the last few years, the country increased its electricity generation capacity to 59 gigawatts (GW), despite peak domestic demand topping out at only 32 GW. This huge spare capacity -- which occurred thanks to a drop in demand caused by energy subsidy reform and supply-side energy efficiency programs -- allows Egypt to quickly expand its gas-fueled electricity generation for export.

Potential electricity importers include Libya, Sudan, and Jordan via existing interconnections; Greece via a planned cable; and Cyprus via the Euro-Africa interconnector, currently under construction. An exchange interconnection is also being built between Egypt and Saudi Arabia.