Egypt electric grid

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Egypt has the sixth-largest proved oil reserves in Africa. Over half of these reserves are offshore reserves. Although Egypt is not a member of OPEC, it is a member of the Organization of Arab Petroleum Exporting Countries.[2]

Egypt is estimated to hold 12,446 million barrels (1,980 million cubic metres) initial recoverable liquid reserves. After decades of production, it is estimated that the country has approximately 1,888.9 million bbl (300 million m3) recoverable oil remaining, as of January 2011. These figures indicate that 83% of Egypt"s recoverable oil reserves have been depleted.[3][4]

Oil shale resources were red in the Safaga-Quseir area of the Eastern Desert in the 1940s. The oil shale in the Red Sea area could be extracted by underground mining. In the Abu Tartour are, oil shale be mined as byproduct whilst mining for phosphates. Oil shale in Egypt is foreseen as a potential fuel for the power generation.[10]

In March 2015, BP signed a $12 billion deal to develop natural gas in Egypt intended for sale in the domestic market starting in 2017.[15] BP said it would develop a large quantity of offshore gas, equivalent to about one-quarter of Egypt"s output, and bring it onshore for domestic consumers. Gas from the project, called West Nile Delta, was expected to begin flowing in 2017. BP said that additional exploration might double the amount of gas available.

Dolphinus Holdings Ltd provides gas from Israeli fields to Egypt.[24][25][26][27] In November 2019, Egypt signed a number of energy deals at a conference, including a $430-million deal for Texas-based Noble Energy to pump natural gas through the East Mediterranean Gas Co"s pipeline.[28]

In April 2023, Egyptian media reported that Egypt and Russia were expediting the El Dabaa Nuclear Power Plant construction. They were said to be trying to get the plant at El-Dabaa, 135 kilometres west of Alexandria, back on schedule after initial delays due to the Russian invasion of Ukraine and COVID-19. The construction work on the plant, which was scheduled to conclude by 2030, had started in July 2022.[34]

The energy strategy in Egypt adopted by the Supreme Council of Energy in February 2008 is to increase renewable energy generation up to 20% of the total mix by 2020.[35]

Almost all hydroelectric generation in Egypt comes from the Aswan High Dam. The Aswan High Dam has a theoretical generating capacity of 2.1GW; however, the dam is rarely able to operate at full design capacity

due to low water levels. An ongoing refurbishment program is being enacted to not only increase the generating capacity of the dam to 2.4GW, but also extend the operational life of the turbines by about 40 years.[35][37]

The only remaining significant hydropower site that is undeveloped in 2024 is the Qattara Depression. Several schemes have been proposed through the years to implement a Qattara Depression Project. None of which have been executed due to prohibitive capital costs and technical difficulties. Depending on the generating scheme chosen the Qattara Depression could potentially generate anywhere from 670MW to 6800MW.

Egypt has a high solar availability as a result of its hot desert climate. The total capacity of installed photovoltaic systems is about 4.5 MWp[when?]. They are used in remote areas for water pumping, desalination, rural clinics, telecommunications, rural village electrification, etc.[39] The proposed large-scale solar power project Desertec also involves Egypt.

In some areas, the country receives over 4,000 hours of sunshine per year, which is among the highest quantities registered in the world. Due to the sharp population growth and a series of blackouts during the summer caused by a supply shortage, Egyptian demand for solar energy is increasing. However, only 1% of the electricity is produced by solar energy. The majority of solar energy available in the country derives from small-scale projects. Modestly-sized projects, up to 10 MW, are constituted by hybrid solar/diesel solutions, which are developed by the Emirati company Masdar.

In 2019 Egypt completed one of the biggest solar installations in the world, Benban Solar Park, which generates 1.8 GW to power 1 million homes.[40][41][42]