

Egypt and the El - Dabaa nuclear plant

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Egyptian President Abdel-Fattah El-Sisi and his Russian counterpart Vladimir Putin met in Cairo on December 11, 2017, to attend the signing of an agreement officially launching work on Egypt's nuclear power plant at El -Dabaa. Egypt's Minister of Electricity Mohamed Shaker and Alexi Likhatchev, the Director General of Russian state atomic energy corporation Rosatom, have signed the document to officially commence the project.¹

President Putin said that "upon the completion of the El - Dabaa project, Egypt will not only benefit from having a nuclear plant but also from gaining the latest and safest technology of nuclear energy."²

Rosatom has announced that work on the El-Dabaa plant, situated west of Alexandria, will start in December 2017 and that the company will service the plant's four reactors for 60 years.³ The first reactor, with a capacity of 1,200 MW, is expected to begin commercial operations in 2026. The remaining three reactors should be online by 2028.⁴

The nuclear plant of El - Dabaa

The nuclear plant will be established in El - Dabaa, located in the Marsa Matrouh governorate on the Mediterranean coast.⁵ The plan will be implemented by Russian state-owned company Rosatom. The reactor will be composed of four nuclear power units each capable of producing 1,200 megawatts of energy (4,800 megawatts).⁶

El - Dabaa reactor will have new technology with strong safety measures that take into account lessons learned during the March 2011 Fukushima disaster in Japan. It will be able to withstand earthquakes up to 9 degree on a Richter scale, and the crash of a 400-tonne airplane.⁷

According to the agreement, Russia will loan Egypt the \$25 billion needed to finance the building and operation.⁸ Hussein El-Shafie, manager of the Egyptian Russian Foundation for Culture and Science, said that the loan provided by Russia will cover 85 percent of the project and Egypt will raise the remaining 15 per cent from private investors. The El - Dabaa project will be paid over 22 years at an interest rate of 3 percent. "Egypt

will begin repaying the loan in 2029, though by that time the El - Dabaa nuclear reactors will have generated \$17 billion in sovereign revenues for the government of Egypt," said El-Shafie.⁹

The main benefits of the nuclear reactor are:

Electricity - according to Nuclear Affairs and Energy Adviser at the Ministry of Electricity Ibrahim Al-Osery, the project has the potential to provide up to 50% of Egypt's electric energy capacity.¹⁰

Clean source of energy - the nuclear power reactor in El-Dabaa will not emit any gas pollutants or cause any greenhouse effect.

Water supply - the scarcity of water has become a rising concern. The state's statistics agency reported in May 2014 that Egyptians have on average access to 663 cubic meters of clean water annually, well below the international water poverty threshold.

Nuclear technology - it will help Egypt to obtain the nuclear technology necessary for the country become a pioneer in this field in the long-run."

The nuclear waste - generated by the plant will be handled by an international company that is an expert in this field.

Job opportunities - the plant will create over 50,000 job opportunities.

Egypt as a center for energy generation - the Egyptian government planning to turn Egypt into a center for energy generation, the goal being not just self-sufficiency but to generate power for export.¹¹

Main milestones of El – Dabaa project

The first brick of Egypt's El - Dabaa nuclear power plant was laid, under ousted president Hosni Mubarak, in 1984 only for plans to be derailed by the Chernobyl disaster of 1986. The government subsequently placed the project on hold.

In January 2012 - Site development was halted due to disputes with local residents, who accused the state of confiscating their land by force and without proper compensation. El - Dabaa locals stormed the construction site, destroying existing infrastructure and refusing to surrender to military police.

In July 2012 - the Egyptian Ministry of Electricity and Energy published a report that argued for the creation of a nuclear program. The report stated that Egypt's increasing demand for electricity, requiring an additional 300 megawatts annually, cannot be met under the current system. In addition, the drop in both traditional sources of energy and employment opportunities means that Egypt should pursue the more economically feasible alternative of nuclear energy. The project incorporated specifications following the disaster at the nuclear reactor in Fukushima, Japan in March 2011.

In late 2013 - local tribal families from El - Dabaa and Marsa Matrouh relinquished the nuclear construction site to the Egyptian armed forces after months of occupying the controversial area.

In May 2014 - the Egyptian government started developing the infrastructure for the nuclear power plant in El - Dabaa.¹²

September 2014 - Egyptian President Abdel-Fattah El-Sisi said that electricity production and distribution were not developed enough to keep up with consumption. The speech was a response to a large-scale power outage in various parts of the country, part of an ongoing power crisis that has seen recurrent power outages nationwide throughout the summer.

In November 2014 - top Egyptian and Russian officials met in order to discuss an agreement to help use nuclear power to generate electricity in Egypt

In November 2015 - Russian President Vladimir Putin and his Egyptian counterpart declared on February 10, 2015, that the two countries plan to jointly build Egypt's first nuclear power plant. Egyptian president, El-Sisi told reporters that memorandums of understanding had been signed on the plant's construction.¹³ Putin stressed that the deal was not finalized but that it had major potential.¹⁴ Putin announced that his country would help build "a whole new nuclear power industry in Egypt. We discussed the possibility of cooperation in nuclear power engineering. If final decisions are made, they will relate not only to the construction of a nuclear power plant but also to the creation of a whole new nuclear power industry in Egypt." Russia would also aid in providing staff and scientific research, added Putin.¹⁵

April 15, 2017 - Egyptian delegation of 16 MPs, headed by the chairman of parliament's Environment and Energy Committee Talaat El-Sewedi, visited Russia. The four-day visit came upon the invitation of Russia's state-owned nuclear energy company Rosatom, which is due to construct Egypt's first nuclear power station at El - Dabaa. The parliamentary delegation's visits to a number of nuclear power reactors in Russia involved inspections to see how all safety standards are observed to guarantee hazard-free operations at these stations.¹⁶

On August 27, 2017 - Egypt's President Abdel-Fattah El-Sisi received, the new head of the Russian State Atomic Energy Corporation Rosatom, Alexei Likhachev, expressing Egypt's keenness to finalize contracts and start work on the El-Dabaa nuclear power plant as soon as possible. The meeting, which was attended by Egypt's Minister of Electricity Mohamed Shaker, saw a final review of the contract to execute the project.¹⁷

On September 6, 2017 - Egyptian Prime Minister Sherif Ismail said that the contract with Russia to build the El - Dabaa nuclear power station has been finalized and approved by the cabinet.¹⁸

On November 26, 2017 - Minister of Electricity Mohamed Shaker announced that the State Council has finally revised contracts on the four stations. Shaker said he expects that construction on the first nuclear power station at El-Dabaa will begin in December 2017.

On November 27, 2017 - Egypt's House of Representatives approved three laws which allow the creation of two regulatory bodies on nuclear power, paving the way for the construction of Egypt's first nuclear power plant to generate electricity at El-Dabaa.¹⁹

On December 9, 2017- representatives from Russia's State Atomic Energy Corporation Rosatom and Russian universities have visited major Egyptian universities to explore means to employ Egyptians at the El - Dabaa nuclear power plant.²⁰

On December 10, 2017 - a delegation from the Russian state atomic energy corporation Rosatom arrived in Cairo before the visit of Russian President Vladimir Putin.²¹

The threat of nuclear weapon program

Egypt's nuclear program, which began in 1954, features two research reactors and a hot-cell laboratory, all located at Inshas.²² They are used for peaceful purposes and are under International Atomic Energy Agency (IAEA) – safeguards. Analysts agree that Egypt tried to acquire nuclear weapons back in the 1960s, but ultimately decided not to do so because of political and economic reasons.²³

Past nuclear endeavors have left Egypt with an experienced group of physicists and engineers and a number of universities capable of training a new generation of nuclear scientists.

Although Egypt signed the Nuclear Non-Proliferation Treaty (NPT) in 1968, it has refused to sign the NPT's Additional Protocol, which permits spot inspections, as well as treaties banning the possession of chemical and biological weapons.

Egypt is a leading proponent of establishing a nuclear weapons-free Middle East. Permanent Representative of Egypt to the United Nations at Geneva, Amr Ahmed Ramadan called on September 10, 2014, for an international convention to ban the production of fissile materials used in nuclear weapons. Ramadan made the remarks during the closing session of the Conference on Disarmament (CD), 2014 held in Geneva.²⁴

Egypt – Saudi Arabia nuclear cooperation

Egypt's President Abdel-Fattah El-Sisi has approved an agreement on cooperation in peaceful uses of nuclear energy with Saudi Arabia. The agreement, which was initially signed in April 2016 during a visit to Cairo by Saudi King Salman, involves cooperation on peaceful uses of nuclear power, nuclear security and an exchange of information on nuclear safety.

Egypt and Saudi Arabia are already working on connecting their power grids through a \$1.6 billion deal, approved by Egypt's cabinet in January 2015, where they would share 3,000 megawatts of electricity by 2017.²⁵

Summary

The El-Dabaa nuclear plant will be the largest Russian-Egyptian project since the Aswan dam and the deal marks a significant political and economic shift in relations between Egypt and Russia. President El-Sisi praised cooperation between Egypt and Russia on the project, which he said is a symbol of friendship between the two countries.

Egypt chose Russia's Rosatom due to the company's extensive experience in undertaking a large number of nuclear power projects in various countries and the good financial terms of the contracts with this company.

The growing need for energy is not the only motivation behind Egypt's interest in a nuclear power program. Egypt sees itself as the leader of the Arab world, therefore a decision to pursue nuclear energy serves political purposes domestically as well as internationally. Undoubtedly, Iran's nuclear activities could elicit a regional nuclear race, as Tehran's traditional rivals in the Middle East —Egypt, Saudi Arabia, Turkey, Jordan, and the Persian Gulf states — could counter the Iranian threat with nuclear programs of their own.

Notes

- ¹ Sisi and Putin attend ceremony of inking agreement to officially launch Egypt's first-ever nuclear power plant, Ahram Online, December 11, 2017.
- ² Sisi and Putin attend ceremony of inking agreement to officially launch Egypt's first-ever nuclear power plant, Ahram Online, December 11, 2017.
- ³ Sisi and Putin attend ceremony of inking agreement to officially launch Egypt's first-ever nuclear power plant, Ahram Online, December 11, 2017.
- ⁴ Ahmed Kotb, Going nuclear, Al Ahram Weekly, Issue 1373, (14 - 20 December 2017).
- ⁵ Marsa Matrouh - a sea port 240 kilometers west of Alexandria.
- ⁶ No conflict between Egypt and Russia on Dabaa nuclear plant: Electricity ministry, Ahram Online, January 11, 2017.
- ⁷ 'Egypt and Russia to sign contract for Dabaa nuclear power station very soon,' says MP, Ahram Online, April 15, 2017.
- ⁸ No conflict between Egypt and Russia on Dabaa nuclear plant: Electricity ministry, Ahram Online, January 11, 2017.
- ⁹ Gamal Essam El - Din, Egypt approves deal with Russia to build first nuclear power plant, Ahram Online, September 6, 2017.
- ¹⁰ Abdel Razek Al-Shuwekhi, Dabaa nuclear project to provide 50% of electrical power to Egypt: Electricity ministry nuclear affairs and energy adviser, Egypt Daily News, October 3, 2014.
- ¹¹ Ahmed Kotb, Going nuclear, Al Ahram Weekly, Issue 1373, (14 - 20 December 2017).
- ¹² Egypt announces fees for nuclear plant permit, Al Ahram online, October 3, 2014.
- ¹³ 'Egypt and Russia to sign contract for Dabaa nuclear power station very soon,' says MP, Ahram Online, April 15, 2017.
- ¹⁴ Brian Rohan and Vladimir and Sachenkov , Putin's Visit to Egypt Nets Plan to Build Nuclear Plant, Associated Press ,February 10, 2015.
- ¹⁵ Ariel Ben Solomon, State Department says US would not oppose a nuclear deal for peaceful purposes, Jerusalem Post , February 11, 2015.
- ¹⁶ 'Egypt and Russia to sign contract for Dabaa nuclear power station very soon,' says MP, Ahram Online, April 15, 2017.
- ¹⁷ Sisi reviews contract on Dabaa nuclear power plant with head of Rosatom, Ahram Online, August 27, 2017.
- ¹⁸ Gamal Essam El - Din, Egypt approves deal with Russia to build first nuclear power plant, Ahram Online, September 6, 2017.
- ¹⁹ Egypt's parliament approves laws creating nuclear power regulatory bodies, Ahram Online, November 27, 2017.
- ²⁰ Russian scientists working with Egypt universities to explore employing Egyptians at Dabaa nuclear plant, Ahram Online , December 9, 2017.
- ²¹ Rosatom officials arrive in Cairo for Dabaa nuclear plant talks, Ahram Online, December 10, 2017.
- ²² Raymond Stock, As Obama dithers, Egypt ramps up its nuclear options, FoxNews.com, January 09, 2014.
- ²³ Will New Egyptian Government Pursue Nuclear Weapons? *Voice of America*, 18 Feb 2011.
- ²⁴ Egypt Calls for Ban on Fissile Material Production for Nuclear Weapons, AllAfrica, September 11, 2014.
- ²⁵ Sisi approves cooperation agreement on peaceful use of nuclear energy with Saudi Arabia, Ahram Online , September 28, 2017.