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## Egypt will establish first nuclear plant in next two years

Egypt will establish the first nuclear plant in the next two to two-and-a-half years, the spokesperson of the Ministry of Electricity told Reuters on Sunday.

The spokesperson added that the nuclear power plant to be built at Dabaa by Russia with a capacity of 4,800 megawatts will be set in Matrouh governorate, northwest of Cairo, by 2026.

In September, President Abdel Fatah al-Sisi announced that Egypt had finalized the agreement with Russia to build a nuclear power plant at Dabaa, 130 kilometers northwest of Cairo in Matrouh governorate.

The 4,800 MW plant is set to be completed within seven years and is expected to not only cover the country's energy needs, but also produce an excess that can be exported. The trial operation of the plant is expected to take place in 2022.

Although talks about building a nuclear plant in Egypt have been going on since the 1980s, it was not until 2015 that serious steps have been taken to pursue the plan.

On November 19, 2015, an agreement was finally signed between Cairo and Moscow that allows Russia to build a nuclear power plant in Dabaa, with Russia extending a \$25 billion loan to Egypt to cover the cost of construction. The loan will cover 85 percent of the plant, with Egypt funding the remaining 15 percent.

According to the deal, Russian nuclear firm Rosatom will finance and construct four third-generation reactors, with a capacity of 1,200 MW each, for a total of 4,800 MW. The plant will be built on approximately 12,000 feddans and is expected to create over 50,000 job opportunities.

On November 27 of the same year, Egypt's Parliament approved three laws, which allow for the creation of three regulatory bodies on nuclear power. The laws are believed to help revive Egypt's program for the use of nuclear power for peaceful purposes, which began in the mid-1980s but came to a halt after the tragic explosion of the Chernobyl reactor in Ukraine in 1986.

Nuclear energy is part of the government's plan to diversify its energy sources to prevent any future crisis resulting from shortages in electricity.

*Egypt Today*

<http://www.egypttoday.com>

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## EDF connects 1,660MW EPR reactor unit 1 of Taishan power plant to China's grid

French utility EDF and its partners have connected the 1,660MWe European Pressurised Reactor (EPR) unit 1 of the Taishan nuclear power plant to the grid in south China's Guangdong Province. The Taishan nuclear plant, which is said to be one of the largest cooperative energy projects between China and France, is operated by Taishan Nuclear Power Joint Venture Company (TNPJVC).

TNPJVC is a joint venture between China General Nuclear Power Corporation (CGN) with 51% stake, EDF with 30% interest and the provincial Chinese electricity company Yuedian with 19% stake.



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Construction of the Taishan 1 began in 2009 followed by Taishan 2 in 2010. The two units are claimed to be the third and fourth EPR reactors, respectively, under construction worldwide, EDF said.

The firm noted that the Taishan 1, which reached first criticality on 06 June, has become the world's first EPR to achieve grid connection.

The EPR reactor in Taishan Unit 1 is designed to deliver reliable low carbon electricity to more than 4 million Chinese households.

EDF said in a statement: "Following the unit's first connection to the grid, the reactor will undergo a period of gradual power-up tests.

"Once the reactor has passed all these tests, it will then be tested in steady-state conditions at full power."

The EPR design being implemented for Taishan nuclear power plant features third-generation nuclear technology which has been developed jointly by EDF and Framatome.

Framatome CEO Bernard Fontana said: "We are now focused on supporting our client in the start of commercial operation of unit 1.

"We also remain fully engaged in the completion and start-up of Taishan 2, Flamanville 3 and Olkiluoto 3, and in the delivery of Hinkley Point C in the United Kingdom. All current and future EPR projects will also benefit from the broad experience acquired by our teams."

**COMPELO energy**  
<http://www.compelo.com>

**2 July 2018**

## **First AP1000 unit begins generating power**

Unit 1 of the Sanmen nuclear power plant in China has been connected to the grid, becoming the world's first AP1000 to achieve grid connection and power generation. The milestone came just one day after Taishan 1, also in China, became the first EPR to reach the same milestone.

Sanmen 1 was connected to the grid for the first time at 4.48pm on 30 June, Westinghouse and its Chinese customers China State Nuclear Power Technology Corporation and China National Nuclear Corporation have announced.

"Sanmen 1's turbine generator is now initially connected to the electrical grid and has begun generating electricity," Westinghouse said.

"The technical indicators met the design requirements and the reactor status was well controlled, indicating the unit's construction formally entered the grid-connected commissioning phase for subsequent operation at various power levels," China's National Nuclear Safety Administration (NNSA) said. "The milestone has laid a solid foundation for transient testing and scheduled commercial operation."

Hot testing of Sanmen 1 was completed in June last year. The loading of fuel assemblies into its core began on 25 April following the issuance of a permit by the NNSA. The unit achieved first criticality - a sustained chain reaction - on 21 June. On 27 June, nuclear-generated steam was used for the first time to successfully rotate the turbine at rated speed.



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The unit will now undergo gradual power ascension testing until all testing is safely and successfully completed at 100% power. Sanmen 1 is scheduled to enter commercial operation by the end of this year.

Westinghouse President and CEO José Gutiérrez said, "Today we witness our first AP1000 plant, Sanmen 1, began its process of generating electricity and providing our customers in China with safe, reliable and clean energy. This milestone would not have been possible without the constant collaboration and partnership with our China customer."

In September 2007, Westinghouse and its partner the Shaw Group received authorisation to construct four AP1000 units in China: two at Sanmen in Zhejiang province and two more at Haiyang in Shandong province. Construction of Sanmen 1 began in April 2009, while first concrete for Sanmen 2 was poured in December 2009. Construction of Haiyang 1 and 2 began in September 2009 and June 2010, respectively.

Hot tests at Sanmen 2 were completed in January. That unit is also expected to begin operating by the end of this year.

The loading of the 157 fuel assemblies into the core of Haiyang 1 began on 21 June. The unit is also expected to begin operating by year-end, with Haiyang 2 expected to start up in 2019.

Four AP1000 reactors were also being built in the USA - two each at Vogtle and Summer. However, construction of the two Summer units was suspended last August.

*World Nuclear News*

<http://www.world-nuclear-news.org>

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## **Vattenfall seeks approval for 1.8 GW Vanguard offshore wind project**

The Swedish power group Vattenfall has applied to the British planning authorities for the construction of its announced 1,800 MW Norfolk Vanguard offshore wind project, that will be located 47 km off the East Anglia coast in the United Kingdom. The company hopes to secure approval by the end of 2018. If endorsed, the project's construction would be progressive and a split of the project in two phases is envisaged.

The wind park could deploy between 90 and 257 wind turbines and would be connected to the UK power grid at Happishburgh (eastern Norfolk, UK) via a direct current cable.

The Vanguard project also has a sister project rated 1,800 MW called Norfolk Boreas, it is one year behind Vanguard in its development. Both could be operational in the mid 2020s.

*Enerdata*

<http://www.enerdata.net>

**3 July 2018**

## **Kenya plans a new 960 MW coal-fired power plant in Kitui**

The Kenyan government has unveiled plans to build a new 960 MW coal-fired power plant project in the neighbourhood of Kitui, where coal deposits estimated at 400 Mt have been discovered recently.



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The project would be developed via an IPP (independent power producer) framework but the state could take a part to develop it as a public-private partnership (PPP) project. The power produced by the facility is likely to be priced at US\$7.52c/kWh (the same rate as geothermal power), which is about a third of what diesel-fired units charge.

Feasibility studies are currently underway and the project would be Kenya's second large coal-fired plant project to go ahead after the 1,050 MW worth Lamu project, which is scheduled to come onstream in 2021.

*Enerdata*

<http://www.enerdata.net>

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## Japan aims for 24% renewable energy but keeps nuclear central

Japan's government on Tuesday pledged to modestly boost the amount of energy coming from renewable sources to around a quarter in a new plan that also keeps nuclear power central to the country's policy.

The plan aims to have 22-24 percent of Japan's energy needs met by renewable sources including wind and solar by 2030, a figure critics describe as unambitious based on current levels of around 15 percent.

Japan's own Foreign Minister Taro Kono earlier this year called the goal "significantly low" and described the country's commitment to renewables as "lamentable".

The European Union this month agreed to raise its renewable energy target to 32 percent by 2030.

Japan's policy also envisions nuclear providing more than 20 percent of the country's energy needs by 2030, reflecting the government's ongoing commitment to the sector despite deep public concern after the 2011 Fukushima disaster.

The government has reduced Japan's reliance on the sector, but defends nuclear as an emissions-free energy source that will help the country meet its climate change commitments. Critics though say the government has done too little to push renewable energy as a viable option.

Japan currently generates around 90 percent of its energy from fossil fuels, and the plan calls for that figure to drop to just over half, with energy efficiency policies to cut demand.

Reliance on fossil fuels like coal increased in Japan after the Fukushima disaster, as public anger over the accident pushed all of the country's nuclear reactors offline temporarily.

Six reactors are currently operating, and utilities face public opposition to activating more despite political support for the nuclear industry.

Japan's TEPCO, which operated the Fukushima plant, signalled last week that it was ready to resume work on the construction of a new nuclear plant in the country's north.

"While we have strong obligations resulting from the Fukushima accident, we believe that it is our duty to ensure sufficient electricity supplies to avoid cuts," TEPCO chief Tomoaki Kobayakawa said Friday.



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The government's plan also includes a pledge to reduce the country's 47-tonne stockpile of plutonium, which is large enough to produce 6,000 atomic bombs, though it is mostly stored overseas.

Japan has sought to generate energy from the material, but decades of research has not produced an effective and commercially viable method, leading to international criticism of Tokyo for continuing to produce and possess plutonium.

Agence France Presse  
<http://www.afp.com>

3 July 2018

## Comprehensive risk and safety assessments of the Belarus nuclear power plant completed

*The Peer Review Report of the EU Stress Test in Belarus has been presented today. The review has been carried out by the European Nuclear Safety Regulators Group (ENSREG). The Commission welcomes the completion of this work and looks forward to the next phase of the process and continue working on the proper implementation of the findings.*

Nuclear safety is paramount in the European Union, and even more so when new facilities are being built and operating on the EU borders. The Commission and ENSREG have continually expressed their readiness to work with and support any non EU country to undertake a comprehensive peer review process and this support has been extended to Belarus.

The Peer Review Mission to Belarus took place from 12 to 16 March 2018 and was conducted in a constructive working atmosphere and in line with specifications for EU stress test. This peer review was conducted by a team of 17 experts from EU and non EU Member States including representatives from countries that use nuclear power as well as from those that do not. The team included also 2 representatives from the Commission and 3 observers. During the peer review, the Belarus nuclear regulatory authority provided detailed responses to a number of written questions from the experts.

In the spirit of good neighbourly relations all parties worked together constructively during this peer review with the commitment to increase transparency and improve nuclear safety. The information provided allowed to produce a comprehensive technical evaluation in line with the EU Stress Test scope and ensured an equal treatment for Belarus as regard to other non EU countries which participated to this peer review process in the past.

The Peer Review report, which was presented to the Belarussian authorities in June 2018, has now been endorsed by the European Nuclear Safety Regulators Group. A comprehensive report and detailed recommendations for ensuring nuclear safety in Belarus be published on the ENSREG website together with an executive summary, further to the public event held today in Brussels.

The Commission considers that this outcome is proof of the pragmatic cooperation and problem-solving spirit of the EU with its neighbouring countries including on nuclear safety matters.

The report confirms the adequacy of nuclear safety features as established by the national safety regulator at the time of the license in 2014. It also identifies a number of



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safety features developed since then. In addition, it makes recommendations requiring thorough follow up and continued implementation measures.

The report makes, in particular, an in depth assessment of the plant in relation to:

- Earthquakes, flooding and other extreme weather events;
- Loss of electrical power and ultimate heat sink;
- Severe accident management.

The Commission calls on the Belarusian authorities to develop a National Action Plan, to ensure timely implementation of all safety improvement measures in accordance with their safety significance. The Commission expresses its willingness to participate in the review of the implementation of the respective measures of the Action Plan. The Action Plan should be subject to a future independent review. This was done by all EU and non EU countries which voluntarily participated to the stress test process since Fukushima.

The Commission considers nuclear safety cooperation a central topic in the EU's partnership with Belarus and will continue discussions on the follow-up to the recommendations.

### *Background*

In 2011 the Republic of Armenia, Republic of Belarus, Republic of Croatia, Russian Federation, Swiss Confederation, Republic of Turkey, Ukraine, in cooperation with the EU, confirmed their willingness to undertake on a voluntary basis comprehensive risk and safety assessments ('stress tests'), taking into account the specifications agreed by the European Commission and the European Nuclear Safety Regulators Group (ENSREG) on 24 May 2011.

At that time Belarus was not ready to take directly part to the 2012 EU Stress Tests process like Ukraine and Switzerland did. The European Commission services of DG ENERGY kept since that time regular contact with the Belarus nuclear regulatory authority (Ministry for Emergency Situation (MES) represented by its department Gosatomnadzor (GAN)) to ensure that the peer review process is conducted in Belarus. Since 2013 the Commission supported the regulatory authority GAN with technical assistance focusing on the development of its expertise and independence building through the Instrument for Nuclear Safety Cooperation.

In October 2017, the Belarus Ministry for Emergency Situation (MES) represented by its department Gosatomnadzor (GAN) submitted its National Report on Stress Tests for Belarus Nuclear Power Plant to the Directorate-General for Energy of the European Commission and the European Nuclear Safety Regulators Group (ENSREG) for peer review.

*European Commission*  
<http://www.europa.eu>

**4 July 2018**

### **Greek government inaugurates interconnection project for Mykonos island**

The Energy and Environment Ministry of Greece inaugurated the first phase of the Interconnection of Cyclades Islands with the National Mainland Interconnected Transmission System project, on July 4, 2018.

This phase, which connects the island of Mykonos with the mainland, was launched at the Independent Power Transmission Operator or Anexartitos Diacheiristis Metaforas



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Ilektrikis Energeias (ADMIE) substation on Mykonos. It also included the connection of Syros island with Lavrio (on the Greek mainland), and with the island of Tinos, as well as the Syros–Paros and Syros–Mykonos connections, and was concluded on May 9, 2018.

The second phase, worth EUR70 million, was announced last week by ADMIE. It includes the power link between Paros, Naxos and Mykonos, as well as the upgrade of existing cable connections of Andros with south Evia and Tinos. The second phase is expected to conclude in the second half of 2019.

This will be followed by the third phase, which entails a second underwater cable linking Lavrio with Syros, estimated to cost EUR102 million. The fourth and final stage of the power interconnection of the islands of Cyclades, which includes connecting the islands of the South and West Cyclades, such as Serifos, Milos and Santorini, has been included in the 2019-28 ten-year development programme.

*Global Transmission*

<http://www.globaltransmission.info>

**5 July 2018**

## **Capacity calculation: risks linked to a pan-European threshold – focus on CACM implementation & more transparency**

A regulatory experiment is about to be played out in the European electricity market. A minimum capacity threshold of 75% on each bidding zone border is now supported by the European Parliament and the European Council in the Clean Energy Package trilogues. There is no clear definition of the 75% threshold, and no assessment of the consequences has been done. This can jeopardize our market model. Such a threshold will not solve one of the underlying issues which is to build efficient grids, especially from North to South in continental Europe. Forcing an artificial threshold will push the limit for security of supply and substantially increase re-dispatch cost paid by the consumers. This is the message from ENTSO-E, the organization of European Transmission System Operators.

ENTSO-E fully acknowledges the challenge with reduced capacities on vital borders in Europe. We want to increase the capacity on the borders and use the full potential of the network respecting security of supply. But before any new legislation requirements are put forward on capacity allocation, ENTSO-E strongly recommends continuing implementing the Third Energy Package and the relevant network codes, and in particular CACM, the Capacity Allocation and Congestion Management guideline.

Europe is in the middle of this implementation process. TSOs are now working on regional capacity calculation methodologies and setting up five regional coordination centers to improve these processes across European borders developing new sets of IT tools and platforms. The proposed regional capacity calculation methodologies are currently being scrutinized by NRAs, making sure that all concerns on current capacity calculation process are addressed. After implementation, remaining issues should be properly addressed with adequate and proportional measures.

In addition to implementing the CACM the TSOs have decided to develop an ambitious strategy on transparency. The TSOs will take steps to go beyond the legal requirements, improve publication and data quality and better explain how capacities are calculated and optimised. If capacities need to be reduced, transparent explanation of the reasons and measures taken to mitigate contingencies will be presented.



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Allocating capacity on borders is an integral part of network operations, seeking to meet and balance a wide range of criteria in order to maximize value to European society. Forcing a minimum capacity of 75% on borders into this equation will do more harm than good. A fixed percentage will be counterproductive as it will reduce incentives to invest in interconnectors, price signals will be weakened and TSO operations will be more costly, adding the cost to the bill of the consumers.

The existing regulation has been thoroughly discussed and assessed. We urge the European Parliament, the European Council and the European Commission to reconsider articles 13 and 14 and come back to provisions of the CACM, while TSOs and ENTSO-E will take steps to go beyond legal requirements on transparency.

*ENTSO-E*

<http://www.entsoe.eu>

**6 July 2018**

## **Cables in place for Denmark-Germany offshore link**

Both offshore cables of the Kriegers Flak Combined Grid Solution (CGS), which will interconnect the Danish and German grids by using offshore wind farm connections, were installed on Thursday, German transmission system operator (TSO) 50Hertz Transmission GmbH said.

The 400-MW interconnector will be set up by linking the 288-MW Baltic 2 wind farm in Germany and the 600-MW Kriegers Flak project in Denmark, via two submarine cables.

Installation of both cables started from the German platform Baltic 2 and now the second 25-km (15.53 miles) long cable has been laid on the Danish platform of the Kriegers Flak wind farm, 50Hertz said.

The project is a partnership between 50Hertz and Danish TSO Energinet.dk. The link is expected to be operational in the first quarter of 2019.

*Renewables Now*

<http://www.renewablesnow.com>

**6 July 2018**

## **China's CSG puts into operation 220 kV semi-underground substation**

China's grid network developer China Southern Power Grid (CSG) has put into operation its first semi-underground, open-structure, 220 kV Putian substation in the Shenzhen city of China. This substation, with 360 MW capacity, will help alleviate power shortages in the central area of Futian District.

The substation embodies the concept of environmental protection and intensive use of land. It involved the construction of two floors above the ground (+15 metres) and four floors underground (-16 metres); two main transformers; and four 220 kV outlets and seven 110 kV outlets. The project work also involved the construction of four supporting double-circuit lines from Pengcheng substation to Putian substation (~20 km) passing through Changlingpi reservoir, Meilin reservoir, and the Ministry of Justice building.

The project work was proposed in 2001 and took nearly 17 years for completion.

*Global Transmission*

<http://www.globaltransmission.info>



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## Licence issued for construction of second reactor at Rooppur in Bangladesh

The Bangladeshi Atomic Energy Regulator has issued a licence approving the design and construction of the second Russia-supplied Generation III+ VVER nuclear power unit at the Rooppur nuclear power station, about 150 km west of the capital Dhaka.

Russian state nuclear corporation Rosatom said the licence had been issued to the Atomic Energy Commission of Bangladesh on 8 July 2018. The issuing of the licence was confirmed in a statement by Atomstroyexport, the general contractor for the plant. “The document confirms the safety of the project and gives permission for the construction of the second power unit,” Rosatom said. According to Rosatom, the first unit at Rooppur, construction of which began in November 2017, is scheduled to begin commercial operation in 2023 with the second unit following in 2024.

In July 2017, Russia agreed to release a state loan to finance the construction of the bulk of the Rooppur project. No mention was made of the amount of the loan, but earlier media reports put it at \$12.6bn.

Two 1,200-MW V-392M pressurised water reactor units are to be built at Rooppur. The reactor design has already been used at Novovoronezh 2-1 in Russia, which began commercial operation in February.

*NucNet*

<http://www.nucnet.org>