Beginning of project worth €200 million: Frenell-SES is shaping Egypt's energy transition

Frenell and SES are forming a joint venture for solar power plants and demonstrating how successful economic cooperation between Europe and Africa can be. A history of this flagship project.

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A partnership with great potential: Frenell GmbH from Karlsruhe has teamed up with Egyptian company Sustainable Energy Solutions (SES) through the *Partnering in Business with Germany* programme to form the Frenell-SES joint venture.

The objective of the pilot project is to build a hybrid solar installation combining a thermal solar power plant with PV to attain an overall capacity of 60 megawatts. The installation is being built close to Abu Minqar oasis in the Egyptian New Valley Gouvernement. For decades to come, it will provide a reliable supply of solar power to this desert region.

The joint venture is the result of a long search for the right project partner. It brings German solar expertise together with knowledge of the Egyptian market. The people driving the project are Ahmed Naguib, Managing Director and Chief Commercial Officer (CCO) of SES, and Martin Selig, Managing Director and founder of Frenell GmbH. By forming the joint venture, they want to jointly build and conquer the future market for renewable energy.

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The history of this joint venture shows that successful B2B cooperation needs not only the right business model, but also reliable structures so that trust and shared success can be built.
It all started at SES in Egypt in the late 2010s.

SES is a highly specialised prime contractor for the

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planning, procurement and construction of turnkey sustainable energy installations in Africa and the Middle East. The company sees enormous potential for concentrated solar power (CSP) in this sunny region. The technology uses special mirrors to bundle solar energy and convert it into thermal energy. This strategy has also informed Egypt's energy policy, which aims at using renewables to cover 42% of the country's demand for electricity by 2030.

At the time, SES had the challenging task of finding a trusted technology partner that was in possession of the necessary expertise and would meet the strategic requirements developed by the Egyptian company. A key criterion for any potential project partner was to have parts of the installation produced by local companies in Egypt. Drawing on external advice, SES identified six potential partners in Spain, France and Germany. One of these was Frenell GmbH from Karlsruhe.

German engineering prowess for the global market

This led to an initial contact between the two companies in 2019. It was no coincidence that Frenell had made it onto the shortlist drawn up by SES: for 20 years already, the Karlsruhe-based company had been among the world's leading experts on CSP technology. Frenell's power plants are based on a specially designed system of collectors which heat nitrate salts to up to 550°C. These salts are then stored in isolated heat storage facilities that can store thermal energy for hours at a time. The power plant bloc then uses this energy to power a steam turbine that generates electricity.

This technology allows for carbon-neutral electricity to be fed into the grid in a highly flexible way that can be used to provide base load. Frenell has developed the system from the initial planning up to market-readiness and holds patents for it. As CSP plants usually need to be located in regions with intense solar radiation to be economically viable, the company has been consistently focusing on exports. So far, it has completed projects in Spain, Australia, India and Italy.

Breakthrough thanks to targeted funding

While these were all encouraging signs for a future business cooperation, it was not until Mr Naguib participated in the *Partnering in Business with Germany* funding programme in 2022 that the project really took off. With hindsight, Mr Naguib regards the intensive communications training that is part of the preparation for the programme as a major asset for the business trip that would take him to Germany:

"After the programme, communication went in a very different way. I was able to better understand the mindset adopted in Germany to do business. I learned that it pays to present yourself in a dedicated and incisive way and to use hard data and facts to argue on matters of business."

Martin Selig sees continuity as the main benefit of the programme. He had already been part of a business delegation to Egypt and Morocco: "But this kind of one-off dialogue is often not sufficiently efficient. Decisions about a long-term partnership require a structured approach such as the one offered by *Partnering in Business with Germany*."

Beyond this, both business partners highlight the fact that the programme is administered by the Federal Ministry for Economic Affairs and Energy as an important aspect. "For me, it also a perfect platform because it elevates our

cooperation to a higher level and gives us better visibility vis-à-vis political decision-makers", says Mr Selig. Adds Ahmed Naguib: "The status of the programme has allowed us to build our own Egyptian community for cooperation with Germany, a community that is growing across sectors and is mutually supportive."

Project worth €200m now on the final straight

Since Ahmed Naguib's initial visit to Germany, the partners have incrementally deepened their cooperation. Mr Selig stresses that Frenell had already been following developments on the Egyptian market, but that it would have been almost impossible for a German company to get a project of this kind off the ground in Egypt without a competent local partner. In the energy sector, in-depth knowledge of the regulatory framework and good connections to local stakeholders are essential. For Martin Seelig, trust is also an important part of the equation. "From day one, the project partners need to work on building a long-term relationship. This is absolutely crucial for the success of any project of this kind."

Ahmed Naguib and Martin Selig ©Private

The 50:50 structure of the Frenell-SES joint venture shows just how close ties between the two companies have become since their first meeting in Germany in 2022. Some important milestones have recently been reached: the first rounds of financing have been completed and licences for the construction and exclusive marketing of electricity within a large area of the New Valley Gouvernement obtained from the Egyptian authorities. The project, which is being financed by the European Bank for Reconstruction and Development (EBRD) and private investors, is worth around €200 million. Construction is due to begin this year.

Added benefit for the region and for the future energy supply

The main beneficiaries of the project will be the locals who will have an affordable supply of energy that offers long-term stability. According to Martin Selig, the solar power plant is to provide a nominal capacity of 60 megawatts at around 85% of the time. Value creation is also shared fairly: local Egyptian companies will produce large parts of the plant, whereas the technological expertise and the core components will be supplied by highly specialised solar companies in Germany.

But Mr Naguib and Mr Selig see the future of CSP technology as the biggest lever. Given the huge demand for energy in the region, this pilot project is only the beginning. Another indication of this is the fact that, in preparation for future expansion, the joint venture has already acquired twice the amount of land it initially needs.

And the project partners are thinking even further ahead than this: in future, the technology could be used in sun-rich countries such as Egypt to produce large amounts of green eFuels for export to Germany and the EU. In this way, the project serves to not only deepen German-Egyptian economic relations, but also opens up new prospects for Germany's energy transition.

'Partnering in Business with Germany' is an instrument to promote foreign trade and investment by the

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Partnering in Business with Germany

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