

Ashalim Solar Project Completes Lift of 2,200 Metric-Ton Solar Receiver Steam Generator

This summer, Megalim Solar Power Ltd., a special purpose company owned by NOY Fund, BrightSource Energy and General Electric (GE), successfully lifted the solar receiver steam generator at the 121 megawatt (MW) Ashalim Solar Thermal Power Station in Israel's Negev desert. With the receiver in place, the 250-meter tower is now the tallest power tower in the world.

"We are excited to have achieved this major construction milestone with our project partners," said Eran Gartner, CEO of Megalim. "Ashalim is a state-of-the-art solar facility and a shining example of what can be achieved through the collaboration of multiple companies and many nationalities."

The solar receiver steam generator (SRSG) weights 2,200 metric tons and measures 50 meters tall. It was constructed on the ground next to the tower. It took approximately two weeks to lift the receiver into place to the top of the 200 meter tower, requiring precise motion control. Megalim's turnkey contractor GE Renewable Energy entrusted one of the most challenging aspects of the project to Swiss heavy-lift specialist Hebetec Engineering.

The SRSG was constructed on the ground next to the tower while an opening at the tower base was built large enough for it to fit inside. For the lift, the SRSG was moved inside the tower on skid rails. Twenty mechanical lifting devices known as strand jacks were fastened in place around the top of the tower. Specially braided steel cables were then attached at 20 points at the base of the SRSG. Once secured, the SRSG was carefully raised.

The lift was a first-of-its-kind due to the sheer density of the receiver, as well as the requirement, to maintain very tight tolerances throughout the duration of the lift. The fact that there was only 25 centimeters of space between the receiver and the tower wall, left no room for error.

When Ashalim is operational, 50,600 software-controlled mirrors will track and reflect sunlight to the receiver atop the tower, which is used to heat water to create superheated steam. The steam is then piped to a conventional steam turbine to produce enough electricity to support the equivalent of 120,000 households during the daylight hours in which the plant will operate.

Ashalim represents the first deployment of BrightSource's [next generation solar field technologies](#), including wireless solar field communications and control and self-powered heliostats. The wireless network controls each heliostat individually. The use of wireless technology enables faster installation and commissioning, while lowering the solar field cost.

With the lift completed, construction staff are finishing the remaining work such as construction of the vertical pipe rack and installing the heliostats near the base of the tower. Calibration of the solar field is underway and the balance of activity from September forward will be commissioning and start-up of the plant. Megalim and its industrial partners expects to bring the project online in early 2018.