

SESAME becomes the world's first large accelerator complex to be fully powered by renewable energy

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On 26 February 2019, a ceremony was held to mark the official inauguration of the solar power plant of SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East).

Constructed on grounds next to JAEC (Jordan Atomic Energy Commission) that is located some 30kms from SESAME, electricity from the solar power plant will be supplied by an on-grid photovoltaic system having a total power capacity of 6.48MW, which will amply satisfy SESAME's needs for several years.

Thanks to this power plant SESAME is now not only the first synchrotron light facility in the region, but also the world's first large accelerator complex to be fully powered by renewable energy.

"As in the case of all accelerators, SESAME is in dire need of energy, and as the number of its users increases so will its electricity bill" said the Director of SESAME, Khaled Toukan. "Given the very high cost of electricity in Jordan, with this solar power plant the Centre becomes sustainable" he continued to say.

The power plant, which uses monocrystalline solar panels, was built by the Jordanian company Kawar Energy under the supervision of the consultancy firm Consolidated Consultants Group representing the owner, SESAME. Power from the solar power plant will be transmitted to the grid through the wheeling mechanism by JEPSCO (Jordan Electric Power Company). The power that the solar power plant sends to the grid will be accounted for to the credit of SESAME.

The necessary funding for the solar power plant became available in late 2016 when the Government of Jordan through the Ministry of Energy, generously agreed to allocate JD 5 million (US\$7.05 million) from funds provided by the European Union (EU) to support the deployment of clean energy sources.



© SESAME 2019: SESAME's solar power plant.

Sirpa Tulla representing the Head of the EU Delegation to Jordan, welcomed the good use Jordan had made of the European Union's funds and reminded the audience that his Organization stood firmly behind SESAME.

The President of the SESAME Council, Rolf Heuer, thanked both the EU and the Jordanian Authorities for their generosity and continuous support and encouraged other accelerator laboratories to follow SESAME's example.

SESAME opened its doors to users in July 2018 and since then 23 user groups have used its facilities. A second call for beam time on its XAFS/XRF (X-ray Absorption Fine Structure/X-Ray Fluorescence) spectroscopy and IR (Infrared) spectromicroscopy beamlines issued in September 2018 resulted in 103 applications, which is large by any standards, and is a clear indication of the essential need for a synchrotron light source in the region. The Centre is now working on construction of four of its next beamlines. These are the MS (Materials Science), MX (Macromolecular Crystallography), and BEATS (BEAm-line for Tomography at SESAME) beamlines, as well as a soft X-ray beamline.

Sent by CERN on behalf of SESAME