

Environmentally friendly lithium production via membrane distillation to serve growing battery demand of e-mobility

With its membrane distillation technology, SolarSpring GmbH from Freiburg/Germany, a 100% subsidiary of ISHE AB, can produce very high concentrations of brine to extract valuable minerals, such as lithium, from geothermal water. Fortunately, the thermal energy required for the membrane distillation process can be drawn directly from geothermal sources. This makes the procedure a more environmentally friendly and, thus, viable alternative to conventional lithium production. This process will be further developed and improved in a 1,5 m€ R&D project with internationally renowned partners.

The global lithium market size was valued at USD 4.23 billion in 2019 and is expected to grow further over the next years, especially in regards to the rapid expansion of the lithium-ion battery industry as the world demand for electric vehicles, energy storage systems, and portable electronics continues to increase.

Chile is not only one of the driest countries on earth but also has the largest geothermal resources worldwide which can be used to operate geothermal power plants. Geothermal water contains a very broad spectrum of valuable minerals which, when extracted, can be further processed. Thus, Chile was selected as location for the project "BrineMine", in which SolarSpring, together with the [Fraunhofer Institute for Solar Energy](#) (ISE), [Karlsruher Institute of Technology](#) (KIT) and several other partners, is jointly developing a process for the extraction of valuable materials and drinking water from geothermal sources. The project is supported by the [German Federal Ministry of Education and Research](#) (Bundesministerium für Bildung und Forschung - BMBF) with a total funding volume of 1.5 Mio €.

Practical tests of the membrane distillation technology are currently in progress, and the first pilot plants are to be installed on site within the next year.

SolarSpring GmbH, recently acquired by ISHE AB, expects promising growth potential for this application with their technology in a very dynamic market in the coming years.

Project Information: <https://www.bmbf-client.de/en/projects/brinemine>

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Industrial Solar Holding Europe AB holds 100% of Industrial Solar GmbH and 100% of SolarSpring GmbH - both located in Freiburg/Germany. Industrial Solar GmbH is an international leading technology and solution provider, which develops projects mainly based on its innovative Fresnel collector technology suitable for fulfilling an expected growing market of solar process heat. As a one-stop-shop Industrial Solar offers turnkey solutions for customers in several industries.

Find out more about Industrial Solar GmbH at the following address:

<https://www.industrial-solar.de/>

Founded in 2009 as a spin-off of the Fraunhofer ISE, SolarSpring GmbH - membrane solutions, has evolved into an international pioneer in the field of membrane distillation offering innovative waste- and drinking water treatment technology.

Find out more about SolarSpring GmbH at the following address:

<https://www.solarspring.de/>