

Solmax Builds Innovative Ground Basin Heat Storage in its Front Yard with Funding from Federal Government

By GNA Correspondent



Introduction

Two experimental earth basin heat storage facilities are being built at the Solmax factory in Rechlin, Germany. The "Efficient Pit" project, funded by the Federal Ministry of Economics, aims to develop efficient methods for the seasonal storage of solar energy and also other renewable energies.

Affordable long-term heat storage facilities are considered a key technology for the energy transition and Solmax is banking on being a leader in this emerging industry.

Since HDPE geomembranes and geogrids are extensively used in the design of these new ground basin heat storage pits Solmax hopes this new industry will create additional demands for their geosynthetic products.



Solmax is building two ‘efficient pit’ prototypes with volumes of 1,800 and 3,000 cubic meters respectively on its company premises in the town of Rechlin. The town has a long history and was the Luftwaffe’s main testing ground for new aircraft designs in Nazi Germany.

Compared to some much larger heat storage facilities that have been in use on a commercial scale for years, especially in Danish district heating networks, the two research heat storage facilities are characterized by several innovative features. Their steep slope angles of 34 and even 70 degrees are particularly striking. This is made possible by the use of geogrid-reinforced earth structures.

The steeper design is intended to reduce the space required, improve the surface-to-volume ratio, reduce the cover and ultimately reduce the cost per megawatt hour of heat stored. In addition, new types of cover construction are being tested, which are considered a critical element of existing ground basin heat storage systems.

Thomas Labda, civil engineer and key account manager at Solmax, explains:

"We are developing the next generation of ground basin heat storage systems. And this is our playground. In the future, I can try out new things here before I take them to the customer."



Key Account Manager in Renewable Energy at Solmax

Another focus is on testing new high-temperature-resistant PE geomembranes. These should be able to withstand a continuous load of 95 degrees Celsius for at least 30 years without any loss of quality.

Solmax supplies the pilot heat storage with waste heat from the production plant. This not only enables extensive testing, but also valuable experience for the team.

Labda emphasizes: *"We are primarily a supplier of plastic sheets, but the understanding of the overall product of heat storage is invaluable to us, especially in this early market phase."*

The storage facilities will be fitted with numerous sensors to monitor temperatures, humidity and possible leaks.

The Stuttgart-based Steinbeis Research Institute Solites will analyse the heat flows.

The institute is currently reporting on ten concrete plans for such storage facilities in Germany. A growing market is emerging.



Drone footage of the front yard of the Solmax Manufacturing plant in Rechlin, Germany

References and Further Reading

Durable Pit Thermal Energy Storages Using Functional Geomembranes from AGRU
<https://cloud.excelplas.com/s/b14rPDd0cC8AK9k#pdfviewer>

Layfield's HeatGard™ Geomembranes are Liners of Choice for Australian Thermal Pit Storages
<https://cloud.excelplas.com/s/PKoEPJGP7tTUcCM#pdfviewer>

Solmax Banking on Using Geomembranes in Earth Basin Heat Storage (EBHS) for District Heating (DH)
<https://cloud.excelplas.com/s/XUJWR43XvkDnKGg#pdfviewer>

As Seen In:

