envelio GmbH
Intelligent software for power grids

The processes of distribution network operators in the energy sector are not set up for the integration of hundreds of thousands of new installations such as charging stations and wind energy parks. They have to laboriously and time-consumingly pull the necessary data for new connections from different systems. This is where the Intelligent Grid Platform (IGP) from the Cologne-based startup envelio comes in: The software platform digitally maps power grids, analyzes grid data, and performs simulations within minutes, and then derives recommendations for action. In this way, grid planning and operation can be simplified and automated.

envelio offers the IGP in two variants: as an on-premise solution and as software as a service (SaaS) from the Open Telekom Cloud. For security, performance, and cost reasons, the fastgrowing startup recommends the SaaS solution. For each SaaS customer, envelio sets up an IGP cluster in the Open Telekom Cloud and provides appropriate and automatically scalable computing power. Currently, envelio uses Elastic Cloud Server (ECS) and load balancers for the IGP. In addition, the startup also outsources its own IT services to the Open Telekom Cloud as much as possible and uses it as a backup.

Deutsche Telekom and envelio GmbH

The Task: Since its previous hosting providers did not allow flexible combinations of infrastructure resources, the startup envelio needed a secure and highly-scalable infrastructure solution to offer its Intelligent Grid Platform (IGP) for the electricity industry as a SaaS solution.

The Solution: envelio uses Elastic Cloud Server (ECS) and load balancing from the Open Telekom Cloud. For each SaaS customer, an IGP cluster is set up in the Open Telekom Cloud, and computing power is made available via the Internet according to size.

The Advantages: envelio can offer its customers SaaS use that is both flexible and secure at the important data location of Germany – and uses the Open Telekom Cloud itself as a backup, and to outsource the IT services used in its own company as far as possible.

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The Customer: envelio

Digital electricity grids for the energy transition: This is the motto of the startup envelio. The company was founded in April 2017, as a spin-off of RWTH Aachen University. The founding team, which included Dr. Philipp Erlinghagen, Vice President Product, had already worked together for several years to develop software and algorithms for the planning and operational management of energy grids. Today, envelio has a team of around 70 employees who are together driving forward the Intelligent Grid Platform (IGP) as an innovative digitalization platform for energy grids.

The modular assistance system IGP digitally maps power grids so that grid planning and operation can be simplified and automated The IGP provides a quick analysis of grid data and then derives recommendations for action. Distribution network operators can check directly whether their network still has capacity for new installations such as solar plants or wind farms. One in seven of the approximately 150 largest regional distribution network operators in Germany already uses the IGP software. envelio's international customers include Portuguese company EDP, one of Europe's largest energy suppliers.

The Challenge

envelio offers the IGP as both an on-premise installation and a cloud service. But the vendor hosting solutions that the startup had previously used did not offer any scaling capability to assemble dedicated infrastructures with more CPU cores or more RAM. Since network security features were also missing, envelio was looking for an infrastructure solution that was as flexibly scalable as it was secure – not least because envelio's German customers are required by law to manage their data in Germany.

The Solution

Since 2018 envelio has been using the Open Telekom Cloud to provide its customers with the IGP as software as a service (SaaS). The startup had become aware of the infrastructure solutions of the Open Telekom Cloud through Telekom's TechBoost startup program. Through TechBoost, more than 500 young companies are already benefiting from credits for cloud resources, marketing and sales support, as well as customer contacts.

Dr. Philipp Erlinghagen, Vice President Product of envelio

Telekom's cloud solution also offered advantages such as high scalability, a secure location, and network security features. For each SaaS customer, envelio sets up an IGP cluster in the Open Telekom Cloud and provides scalable computing power according to its size. Currently, envelio uses Elastic Cloud Server (ECS) and load balancers for the IGP; disaster recovery will be added in the future.

The Customer Benefits

One of the main advantages of the Open Telekom Cloud for envelio is that it is operated in Germany and provided by Telekom. Hosting in the Open Telekom Cloud is the safest, fastest, and most cost-effective way to operate the IGP – and therefore a clear selling point for envelio's German customers. envelio also outsources its own IT systems and services to the Open Telekom Cloud as far as possible and uses this as a backup as well as for failover scenarios, with a corresponding redundancy strategy. Since there is no lock-in mechanism and the highly scalable Open Telekom Cloud has an open cloud architecture, it offers the best conditions for envelio to develop further systems and customer applications. Last but not least, Telekom's technical support is a major plus point, as even a comparatively small startup like envelio receives comprehensive support and assistance.

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