

Viessmann and TenneT launch first project for smart use of heat and electricity

- **Stabilising the German power grid with smart heat pumps**
- **Climate solution provider and transmission grid operator launch ViFlex pilot project**
- **Bundling heat pumps and electricity storage units to form "virtual power plants"**
- **Optimised use of renewable electricity through innovative blockchain solution**

Bayreuth/Allendorf (Eder), 16.12.2020. Heat pumps will play a key role in decarbonising residential heating this century. Germany's largest transmission system operator TenneT and Viessmann are certain of it. It is reason enough for both companies to launch the so far unique ViFlex pilot project, which will start next year. Today, both companies presented details of the project.

Viessmann and TenneT will jointly test how to utilise the potential flexibility of heat pumps for congestion management in the electricity grid. The aim is to combine heat pumps and electricity storage to form a virtual power plant. At the same time, these customers will be able to save significantly on electricity costs if they participate in the pilot project.

Optimisation through the Viessmann ViCare app

Heat pumps are optimised via the communication channel developed by Viessmann. Customers already use this via their ViCare app to achieve maximum comfort and efficiency for their home energy system. The heat pump's schedule is synchronised with TenneT's requirements and, when possible, its operation is shifted to times when the feed-in of renewable electricity would have to be reduced, for example by shutting down wind turbines, due to congestion in the electricity grid (so-called congestion management). By instead allowing heat pumps bundled in virtual power plants to take up electricity, these relieve the load on the electricity grid and thus ensure that renewable electricity does not have to be "thrown away".

The prerequisite is that customers take out an electricity tariff in the ViShare Energy Community via the contractual partner Digital Energy Solutions, a subsidiary of Viessmann. This means that all components remain in one hand, which increases reliability for customers. The participants' heat pumps are optimised in such a way that a premium is provided to TenneT for congestion management without any loss of comfort.

Viessmann heat pumps respond to electricity supply

Viessmann heat pumps use technology that can be operated with 100 percent renewable electricity and is able, with smart control, to respond flexibly to the demands of the electricity grid. For example, the heat pump can operate and fill the heat storage tank exactly when there is a lot of solar power coming from the roof or when the wind is blowing strongly in Germany so a lot of wind power is available in the grid. This stabilises the electricity grid and replaces the use of fossil power plants.

Background

The expansion of renewable energies is increasingly leading to decentralised structures in the German energy system. Decentralisation is not only confined to the generation and storage side, but also includes the direct on-site consumption of generated or stored electrical energy in some new areas of application in the heating sector.

In an increasingly electricity-based and at the same time more decentralised energy system, the demands on grid and system operation are increasing in order to be able to continue to guarantee today's very high level of supply security. Provided they are effectively controlled, decentralised

generators, storage facilities and consumers can make a measurable contribution to increasing the flexibility and thus stabilising the electricity supply system.

Use of blockchain-based technology

The provision of system services (balancing power and congestion management) from millions of individual small plants requires a new approach to automated control and integration into the processes of transmission system operators, as well as major efforts on the part of equipment manufacturers.

TenneT, together with a number of European transmission system operators, has developed a transnational blockchain-based data platform - the Equigy Crowd Balancing Platform. This platform will make it easier for millions of households in Germany and Europe to offer the flexibility of their plants to the system service markets via electricity suppliers and manufacturers. This serves to stabilise the electricity grids. The Equigy platform enables the automated integration and control of these systems in the processes of the network operators and market participants.

Viessmann has been consistently investing in the development of its own energy management platform at an increasing rate for many years, in order to increase the convenience and also the cost-effectiveness for climate control solutions. ViFlex is thus another building block in line with the company's mission statement: "We create living spaces for generations to come!"

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About TenneT

TenneT is a leading European grid operator (Transmission System Operator). We design, build, maintain and operate the high-voltage electricity grid in the Netherlands and large parts of Germany and facilitate the European energy market. We are committed to providing a secure and reliable supply of electricity, today and in the future, 24 hours a day, 365 days a year and to playing our role in driving the energy transition. We transport electricity over a network of approximately 23,500 kilometres of high-voltage connections, from wherever and however it's generated, to over 42 million end-users while keeping electricity supply and demand balanced at all times. With close to 5,000 employees, we achieve a turnover of 4.1 billion euros and a total asset value of EUR 23 billion. TenneT is one of the largest investors in national and international onshore and offshore electricity grids. TenneT makes every effort to meet the needs of society. This will require us all to take ownership, show courage and connect with each other.

About Equigy

Equigy plays a key role in the acceleration of the energy transition and the integration of the energy system. With the European crowd balancing platform, based on blockchain technology, Equigy enables smaller flexibility devices, such as home batteries and electric vehicles, to participate in electricity balancing markets, turning consumers into prosumers. Founded by TenneT, Swissgrid and Terna, three national transmission system operators, Equigy aims to set cross-industry standards throughout Europe, in order to support a future-proof, reliable and cost-effective power system that is independent of fossil-fuel based flexibility sources.

About Viessmann

Viessmann is the leading provider of climate solutions for all living spaces. The 'Integrated Viessmann Solutions Offering' enables users to connect products and systems seamlessly via digital platforms and services for climate (heating, cooling, air quality) and refrigeration solutions. All solutions are based on renewable energy and maximum efficiency. All activities of the family company, founded in 1917, are based on its purpose. "We create living spaces for generations to come" – that is the responsibility of the global Viessmann family with 12,300 members.