
PRESS RELEASE

Milestone for a stable electricity grid: Heartbeat AI receives approval to provide frequency containment reserve in Sweden

- The provision of frequency containment reserve intervenes in the event of sudden deviations in the electricity grid to reduce fluctuations and ensure stability.
- The integration of battery storage and other flexible resources makes the grid more responsive, efficient and stable. However, approval has so far been difficult due to high regulatory hurdles.
- With the successful pre-qualification in Sweden, 1KOMMA5° is now further expanding its portfolio of grid services via Heartbeat AI, just recently announcing the launch of intraday optimization, and providing customers with additional revenue streams.

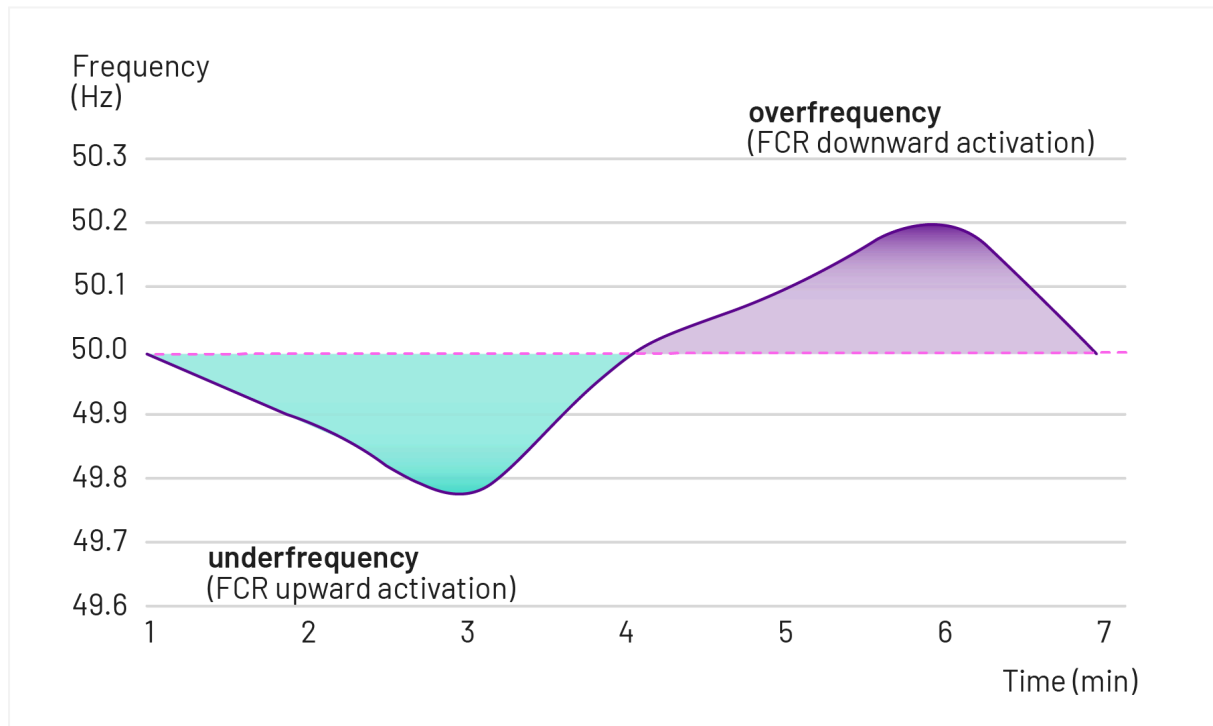
Hamburg, December 4, 2024 – 1KOMMA5°, the new energy company from Hamburg, receives approval to provide frequency containment reserve (FCR-D) in Sweden. This marks an important milestone in grid stabilization and the preparation of the company for approval in other European markets.

“No one can control when the wind blows or the sun shines, or when energy is needed. The provision of frequency containment reserve is a key mechanism for ensuring grid stability in such an increasingly decentralized energy system,” says Philipp Schröder, CEO and co-founder of 1KOMMA5°. “With the approval, we are no longer just optimizing the self-consumption of solar power, trading electricity on the day-ahead and, more recently, intraday market, but are now also entering the fourth dimension, that of grid services, with Heartbeat AI.”

Decentralized energy systems replace large power plants

The European electricity grid operates at a target frequency of 50 Hz. Any deviation from this – upwards or downwards – signals an imbalance between electricity generation and consumption. The provision of frequency containment reserve intervenes particularly in the event of sudden deviations in the electricity grid in order to minimize fluctuations, avoid disturbances and ensure grid stability. As a rule, transmission system operators rely on reserve capacities that can dynamically feed energy into or withdraw energy from the grid, historically primarily from large power plants. The regulatory hurdles for smaller, decentralized energy systems in pools

are high, which often leads to difficulties in approval, and their composition varies from country to country. However, they must guarantee the shortest possible response times and adhere to strict rules.



Exemplary illustration **Fig. 1:** FCR-D in Sweden; upward and downward activation at a target frequency of 50 Hz

Heartbeat AI unlocks flexibility and stabilizes the grid in real time

The approval to provide frequency containment reserve now enables 1KOMMA5° to play a central role in grid stabilization in Sweden. Barbara Wittenberg, Chief Technology Officer at 1KOMMA5°, explains: "With our highly automated and fast-responding pool of batteries and other flexible, decentralized energy systems, we can create a double added value: On the one hand, the grid becomes more responsive, efficient and stable – an important step towards sustainable energy supply and the complete replacement of fossil power plants. On the other hand, we offer our customers further additional income through optimization via Heartbeat AI." With a synchronous grid set-up, entering neighbouring markets in the Nordics is just around the corner.

Sascha Schnorbach, VP Development Heartbeat at 1KOMMA5°, adds: "Heartbeat AI supports the grid in real time, reacting to disturbances within just 3 seconds. Similar to intraday trading, the provision of frequency containment reserve can simply be uploaded as a software update in the future."

1KOMMA5° has already installed over 300,000 controllable energy systems such as PV systems, energy storage units, heat pumps and wallboxes for customers worldwide. Heartbeat AI is the technological centerpiece of 1KOMMA5°, which was launched in 2022. The artificial intelligence currently optimizes the interaction of 40,000 decentralized energy systems worldwide.

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About 1KOMMA5°

1KOMMA5° operates the AI-controlled energy platform "Heartbeat AI", creating a virtual power plant that connects customers' photovoltaic systems, electricity storage units, heat pumps and charging stations with the energy market and significantly increases the efficiency of customer systems. As a one-stop shop, the company also offers private and commercial customers the purchase and installation of individual and intelligent energy system solutions. The aim is to convert 500,000 buildings per year to climate-neutral power generation, heating and mobility. As Europe's market-leading hardware and software platform, 1KOMMA5° currently operates almost 80 locations and around 2,400 employees in Germany, Sweden, Finland, Denmark, Spain, the Netherlands and Australia.

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