
PRESS RELEASE

1KOMMA5° connects 500 MW to Europe's largest virtual power plant: flexibility as a solution for cost reduction and grid stability

Just three years after the market launch of Heartbeat AI, 1KOMMA5° controls more than 500 megawatts of flexibility capacity, making it Europe's largest virtual power plant for private households; this could cover the base load of more than one million households.

- In four markets, 1KOMMA5° connects around 50,000 decentralized energy systems such as solar systems, battery storage or heat pumps, which have generated savings of 36.6 million euros in electricity costs for the connected households.
- 1KOMMA5° plans to open Heartbeat AI further to more than 16 million residential homes in Germany. The company aims to provide a total of 20 GW of power in the virtual power plant by 2030.
- Studies show that household-related flexibilities, such as battery storage, heat pumps, air conditioning systems and electric vehicles, can save up to eight billion euros a year in system costs.
- Heartbeat AI purchases surplus electricity from wind and solar at low or negative prices on the electricity exchange, intelligently connecting and controlling the linked systems. When combined with electricity from their own PV generation, households can save up to 7 cents per kWh while stabilizing the grid during periods of high generation.

Hamburg, May 23, 2025 – 1KOMMA5°, the New Energy company from Hamburg, controls 500 megawatts of flexibility capacity in Europe's largest virtual power plant (VPP) for residential households, just three years after the market launch of Heartbeat AI. With this capacity, Heartbeat AI could cover the base load for more than one million buildings. According to calculations, the approximately 50,000 connected decentralized energy systems in Germany, Denmark, Sweden and the Netherlands are already saving households 24,000 tons of CO₂ and 36.6 million euros in electricity costs.

By 2030, the Hamburg-based company aims to provide almost 20 GW of power, thus not only reducing the need for new gas-fired power plants but also ensuring that less electricity is sold abroad and is available to the German population instead. To achieve this, 1KOMMA5° is also planning to further open up Heartbeat AI to the more than 16 million private homes in Germany.

Decentralized flexibility lowers electricity costs and stabilizes the grid

Philipp Schröder, CEO and Co-Founder of 1KOMMA5°, explains: “Germany is currently giving away cheap and clean electricity abroad. We can solve this problem and ensure that this electricity is available to people here. At the same time, we can reduce the expansion of fossil reserve power plants to a maximum of 5 GW instead of 20 GW and help to ensure that the volatile production of wind and solar power is no longer curtailed. With Heartbeat AI, we are demonstrating that flexibility and intelligent control already work today as an affordable and broad-based solution, as long as customers have a smart meter. Electricity costs go down, and grid stability goes up.”

The recent energy crises have shown how expensive and risky dependence on fossil fuel imports is. Flexibility is the elementary component for harmonizing volatile generation and rising electricity consumption – and for achieving European and, not least, German energy sovereignty.

“500 megawatts of flexibility capacity is an order of magnitude that allows us to say with confidence: 1KOMMA5° is ready to use market-based means to help solve the main problem of the energy transition – the lack of electricity storage and flexibility. We just have to be allowed to do so,” says Schröder. “Significantly fewer subsidies will be needed if the electricity market and flexibilization are finally given free.”

Flexibilization and smart meter rollout make renewables fully usable

Studies show that household-related flexibility such as battery storage, air conditioning systems, heat pumps and electric cars can save up to eight billion euros a year in system costs – through less grid expansion, fewer fossil reserve power plants and more efficient use of renewable electricity. Extrapolated to 2040, there is a savings potential of up to 70 billion euros through flexibility measures alone.

Jannik Schall, Co-Founder and CPO of 1KOMMA5°, says: “The problem is not that there is too much renewable energy, but a rigid grid without smart meters and without enough storage capacity. Instead of subsidizing the old and analogue energy system with billions, politicians should continue to promote full flexibility and the smart meter rollout, and put large-scale and home storage systems on an equal footing regarding grid charges. The fact is that a lot is

technically possible and has already been done elsewhere. We now need to release the handbrake and bring existing possibilities to bear.”

Heartbeat AI can reduce electricity costs for households by up to 7 ct/kWh

In Germany and Europe, large amounts of electricity are being lost due to curtailment, while prices on the electricity exchanges are falling into the negative. To operate an electrified system with fluctuating feed-in from wind and sun in a stable and cost-effective manner, intelligent control is necessary: Heartbeat AI is the artificial intelligence and electricity market software from 1KOMMA5°. It optimizes the interaction of batteries, heat pumps, air conditioning systems, and EV chargers to the rhythm of wind and sun, storing electricity fully automatically when it is cheap and using it later or selling it to the grid when prices are particularly high.

Barbara Wittenberg, CTO of 1KOMMA5°, explains: “Heartbeat AI makes fully automated decisions about our customers' electricity consumption 4.8 million times a day. Our AI connects and controls the systems, and connected households benefit from cheap and clean electricity. On the one hand, the grid becomes more stable - an important step in the transition to a sustainable energy supply and the complete replacement of fossil energy sources. On the other hand, we offer additional income through optimization via Heartbeat AI - and reduce the electricity price to up to 7ct/kWh. The more systems are connected and optimized, the better the result.”

New flex potential: air conditioning systems and battery storage without own PV production

1KOMMA5° recently announced two new products that open up new potential for flexibility and savings in the home: [Air conditioning systems are now also part of the product portfolio](#) and will be fully integrated into the ecosystem around Heartbeat AI. 1KOMMA5° is the first provider in Germany to combine cooling, storage, dynamic electricity tariffs and intelligent control into a complete system for households.

In mid-April, [the company also unveiled the PowerHarvester](#), the first electricity storage system that allows households in Germany to directly benefit from negative prices on the electricity exchange for the long term, even without a solar power system. This is a groundbreaking step in the energy sector: no other company in Germany has yet provided a fully integrated storage solution with intelligent control for households without their own electricity generation.

Heartbeat AI not only enables optimization according to a dynamic tariff and the regional grid charges, but also opens up the permanent possibility of adding further grid-supporting services, such as intraday trading or later the provision of frequency control power; in the Swedish market, 1KOMMA5° already received prequalification for this in December 2024.

1KOMMA5°

Heartbeat AI and smart meters are therefore the last components that customers need to participate in New Energy. After that, software updates will take over in order to always supply cheap and clean electricity, even in a fluctuating market environment.

1KOMMA5° has already installed over 300,000 controllable energy systems for customers worldwide. Instead of charging margins on electricity as an energy supplier, 1KOMMA5° charges a flat-rate software fee for Heartbeat AI and thus enables dynamic and individual electricity prices in real time instead of conventional static tariffs.

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More information and images: <https://1k5.link/press-kit>

About 1KOMMA5°

1KOMMA5° is the CleanTech start-up for CO2-neutral energy, heat and mobility. Founded in Hamburg, Germany, in 2021, the company operates around 80 locations in 7 markets worldwide, serving as the one-stop shop for intelligent, integrated energy solutions such as photovoltaics, energy storage systems, heat pumps and EV charging stations. Its core technology is the energy management software Heartbeat AI; it currently optimizes more than 40,000 systems, creating Europe's largest virtual power plant that connects customers with the energy market and controls electricity generation and sales in time with the wind and sun. 1KOMMA5° has already installed over 300,000 decentralized, controllable energy systems. By 2030, the company aims to convert more than 1.5 million buildings to a climate-friendly energy supply, thus contributing to achieving the Paris climate targets. 1KOMMA5° is one of the fastest and most profitable growing start-ups in Europe.

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