Press release

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Use it or Lose it: German Economy Minister Robert Habeck visits Berlin pilot for supplementary electric heating to curb wind energy curtailment by Vonovia and decarbon1ze

- **New legal framework creates conditions for immediate reduction in emissions and costs when supplying heat to existing buildings**
- **To avoid bottlenecks and curtailment in the power grid, supplementary electric immersion heaters have been placed inside water storage tanks of apartment buildings and are activated when required, utilising "surplus" renewable electricity and reducing gas consumption**
- **Flexible power consumption is balanced and billed individually**

Berlin/Bochum, 15 July 2024. A newly introduced law creates favorable conditions for immersion heaters in single and multi family homes to avoid curtailment of renewable energy production. How does this power-to-heat solution work? Today, Robert Habeck, Germany's Federal Minister for Economic Affairs and Climate Protection, found out first-hand in Berlin, as he visited an apartment building owned by Europe's largest housing company. By installing electric immersion heaters in the hot water tanks of apartment buildings, the housing company Vonovia is now contributing directly to the decarbonisation of the heat supply of its building stock. Additional flexible energy demand such as immersion heaters are activated when surplus production of wind or solar power units would otherwise have to be curtailed.

The Minister for Economics and Protection Robert Habeck, "The idea of immersion heaters shows that more climate protection in the building stock can also be achieved in small, cost-effective steps. Our legislation has created a secure framework for this purpose with the instrument of "Using instead of Curtailing". Using instead of curtailing means that surplus renewable electricity is used sensibly and creates value in transformative technologies instead of shutting down production. The instrument will start its trial stage in October, and we are excited to see it in action. "

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"These installations show that climate protection in existing buildings can easily be achieved through small, cost-effective steps." said Habeck during his visit.

The immersion heaters – each with its own metering and control unit – are currently being piloted in Berlin by Vonovia and the clean energy start-up decarbon1ze. Supplementary heaters are only used when a grid bottleneck is likely, making it necessary to curtail wind or solar power. The new German Act called "Use Instead of Curtailment" (Section 13k of the Energy Industry Act of December 2023) now provides a reliable legal framework, with a two-year trial period, due to start in October 2024. Transmission system operators have defined so-called "relief regions" where flexible supplementary demand can be activated. The resulting additional costs are reimbursed, making it cost-effective to replace gas with green electricity. By operating these direct electric heating systems, Vonovia and decarbon1ze are looking to take an active role in the relief regions of northern Germany.

"We're committed to a climate roadmap that should make our buildings virtually climate-neutral by 2045. To achieve this goal, we're using a range of practicable and innovative methods, and we're pleased that the new law is giving us long-term security for the economic use of a good innovative system in our buildings," says Rolf Buch, CEO of Vonovia SE. He describes collaboration with decarbon1ze as a promising step towards decarbonising the company's building stock.

Previously, in relief regions such as Schleswig-Holstein, grid fees per kilowatt-hour of electricity alone would have cost more than a kilowatt-hour of gas – even in cases where the electricity might otherwise have been curtailed. Customers with immersion heaters now benefit directly from the new conditions, building on low supply prices in the electricity trading market and compensation for additional electricity costs such as grid fees. For the first time, therefore, the price of electricity per kWh can compete with gas. Immediate savings in emissions and energy costs for the relevant buildings are the result. The potential savings could have major impact. In 2023, the curtailment of renewable energies amounted to approximately 10 TWh, primarily affecting windfarms in northern Germany. If supplementary heaters were to be installed in about 1.7 million apartment buildings in this region, flexible consumption could generate some 9.7 TWh.

To activate additional electric demand as required under the "Use Instead of Curtailment" Act, decarbon1ze is installing metering and control modules in this joint pilot project while also ensuring the required balancing and documentation procedure. Knut Hechtfischer, CEO of

decarbon1ze, says: "Our technology enables us to customise the way we address and balance supplementary electric heating. Immersion heaters are a cost-effective starting point for decarbonising existing apartment buildings if electricity is not more expensive than gas. It means that more people can take part in the energy transition, and we can make progress with our building stock – even in places where we can't install heat pumps just yet."

Stefan Kapferer, CEO of 50Hertz, says: "Moving to a flexible use of electric power demand is an indispensable step in our transition to green energy. Today, there are times when electricity production from wind and solar power exceeds demand. ,The sharp rise in the expansion of renewables is creating more and more of these surpluses. As a result, redispatch becomes expensive, while prices in the electricity trading market drop substantially or even turn negative. This means we need to accelerate our actions in grid expansion, storage and more flexible power consumption."

Today, curtailment of renewable power generation mostly affects windfarms. However, with the rapid expansion of solar installations, we'll soon have situations at distribution grid level where a surplus of solar power will require more flexible demand. On a sunny summer Sunday afternoon, an immersion heater inside a hot water storage tank can provide grid operators with the flexibility they need and supply warm water to households.

Dr Erik Landeck, CEO of the Berlin-based distribution system operator Stromnetz Berlin, says: "Stromnetz Berlin supports the testing of technical and energy management processes that need to take place in the "Use Instead of Curtailment" scheme. Whenever there is a surplus of renewable energies, the use of additional flexible loads is a good solution for the energy system. However, controllable flexible loads are largely connected to the distribution grid. While we acknowledge the positive impact on the system overall, we must therefore also look at the capacity of the distribution system. There would be no benefit if the simultaneous connection of additional loads at times of peak usage, for example in the evenings, resulted in grid overload. It's a matter of optimising the whole system. To achieve this, distribution system operators are expanding their electricity grids while also improving the continuous recording of grid levels – even at low voltage levels. This way we'll be able to see what's coming and take action accordingly."

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Picture line: *Federal Economics Minister Robert Habeck visited an apartment building owned by housing company Vonovia today to see for himself how the installation of immersion heaters or direct electric heating systems in the hot water tanks of apartment buildings can contribute to the decarbonisation of heat supply in existing buildings. Stefan Ritter, Head of Energy at Vonovia, explained the joint pilot by Vonovia and the energy transition start-up decarbon1ze.*

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Further details, photographic material and video footage can be found in the Media Library.

About Vonovia

Vonovia offers a home to around one million people in Germany. The residential real estate company plays a central role in society, which is why Vonovia's activities are never focused exclusively on financial aspects, but also take social factors into account. Vonovia is helping to provide answers to the current challenges on the housing market. The company is committed to more climate protection, more senior-friendly apartments and a positive community spirit in its neighborhoods. In cooperation with social institutions and the municipal districts, Vonovia supports social and cultural projects that enrich community life. Vonovia is also helping to address a social issue that is particularly important at the moment: the construction of new apartments.

Our activities focus on our customers and their needs. On site, caretakers and our own craftsmen take care of our tenants' concerns. Being close to our customers ensures fast and reliable service. In addition, Vonovia invests generously in the maintenance of the buildings and develops housing-related services for a better quality of living. For answers to any questions in connection with lease agreements and ancillary expense bills, the central customer service center can be contacted via a regional service hotline as well as by fax, app or by post.

Vonovia has a workforce of approximately 12,000 employees and its CEO is Rolf Buch.

About Stromnetz Berlin

As the owner of Berlin's electric power distribution grid and its associated systems, Stromnetz Berlin GmbH ensures a secure and reliable power supply throughout the German capital. Its grid supplies electricity to around 2.4 million households and businesses. Stromnetz Berlin GmbH provides the required connections to electricity customers and grid access to power suppliers. Around 12.5 billion

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kilowatt hours of electricity flow through Berlin's power grid every year. Stromnetz Berlin is owned by the State of Berlin. www.stromnetz.berlin

About decarbon1ze

decarbon1ze is a Berlin start-up that develops and operates Germany's first nationwide virtual balancing area. It facilitates the individual metering and billing of flexible electricity consumers, including behind-the-meter consumption. decarbon1ze aims to incentivise households and businesses to provide flexibility-based systems that facilitate load shifting and the storage of fluctuating renewable energy. To do so, decarbon1ze runs a virtual balancing platform for the simple transaction-oriented management of flexibilities even beyond the boundaries of the grid area. Info: www.decarbon1ze.com

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