TOPIC SERVICE

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Artificial intelligence – a blessing or a curse for global climate action?

An opinion piece by Dennis Ueß, Head of Regulations & Frameworks at ClimatePartner.

In the fight against climate change, companies are increasingly relying on artificial intelligence (AI) as a powerful ally. AI has the potential to be an important tool on the journey to net zero emissions. At the same time, the immense energy requirements for ever more powerful data centres are leading to major challenges and increasing greenhouse gas emissions. This is a dilemma that can only be solved by the increased use of renewable energies, efficient devices and the conscious use of AI applications.

AI offers unparalleled opportunities for optimising energy use in homes, commerce, industry and transport by adapting behaviours and processes. For example, AI algorithms can analyse large amounts of data to better control heating, cooling and lighting in buildings, significantly reducing energy consumption. In the transport sector, AI is helping to reduce fuel consumption and emissions in logistics and traffic management.

Furthermore, AI can play a crucial role in the integration of renewable energy sources into the power grid. By predicting energy production from solar and wind sources and optimising energy storage and distribution, it can help balance supply and demand more effectively. This can not only improve the reliability of renewable energy, but also accelerate the energy transition. The potential of AI applications for global climate action is matched only by the challenges posed by the ever-increasing energy consumption of the data centres that run these applications.

In 2022, the estimated global electricity consumption of data centres was 240-340 terawatt hours (TWh), which is about 1-1.3% of the global final energy consumption.

Data centres and data transmission networks are responsible for about 1% of energy-related greenhouse gas emissions. Despite efficiency improvements and the increased use of renewable energies by IT companies, energy consumption has increased by 20-40% per year in recent years due to the increasing workloads in large data centres.

The growing demand for energy means that providers are increasingly having to address the question of where the electricity for their data centres will come from in the future. This has led to controversial discussions in some cases, as the recent case of Microsoft has shown. The company had announced that in the future it would also rely on nuclear power to satisfy the energy needs of its

own data centres. To this end, it recently signed a 20-year power supply contract. The plan is to reconnect to the grid a nuclear power plant in the US that was shut down after a severe nuclear disaster. Why nuclear power? The reason is almost grotesque: to achieve its own climate targets in this way.

This example shows that providers of powerful AI applications are called upon to develop the most efficient technologies possible to reduce energy demand as much as possible from the outset. In addition, they must fulfil their responsibility to help expand renewable energies in order to cover the energy consumption of their data centres as much as possible with these energies.

It is safe to assume that AI applications will be used much more in the future than they are today. ChatGPT is a nice pastime for many, but more and more people are also using the new possibilities in their daily work, whether it is to formulate texts, do research or generate ideas. The fact that NVIDIA, a company that manufactures chips for AI computers, is the world's most valuable company, clearly shows that we are only at the beginning of the AI era.

That is why we, as users, should also use AI technologies wisely. After all, every request to a chatbot triggers energy-intensive computing operations, and the energy demand for this will continue to increase in the future. A few years ago, the prompt 'Think before you print' appeared at the bottom of many e-mails, which was intended to help raise awareness of the environmental impact of our paper consumption. We need a new slogan that promotes awareness of the need to use AI applications mindfully: 'Think before you prompt.'

About ClimatePartner

ClimatePartner supports companies on their way to Net Zero. For around 20 years, the pioneer has been developing concepts for its customers that enable them to make a voluntary commitment and anchor climate action in their corporate strategy in the long term. With its flexible approach of software, consulting and reduction solutions, ClimatePartner helps its customers to make an active contribution to climate action both within and outside their own value chain - regardless of whether companies are just starting out or are already at an advanced stage of their individual Climate Action Journey. ClimatePartner's industry-specific solutions cover the entire process, from CO_2 accounting to the definition of reduction targets and the implementation of reduction measures. ClimatePartner also supports its customers in financing global and regional climate projects and in communicating their overall commitment to climate action in a detailed and transparent manner. This includes labelling that confirms the holistic and strategic approach of a company's voluntary climate protection measures. To this end, ClimatePartner's experts work every day on practical and sustainable approaches to contribute to the global Net Zero target by 2050.

ClimatePartner was founded in Munich in 2006. Around 500 employees from Barcelona, Berlin, Boston, Essen, Frankfurt, London, Milan, Munich (HQ), Paris, Stockholm, The Hague, Vienna and Zurich support more than 6,000 companies from 60+ countries.

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