Energy efficiency alofi

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Energy Efficiency covers topics related to energy efficiency, savings, consumption, sufficiency, and transition in all sectors across the globe. Areas of current interest include:Evaluation and modeling of energy efficiency policies and demand-side management programs.Impact of energy efficiency economy-wide across diverse levels of governance. Contribution of energy efficiency to climate change mitigation goals -benefits or multiple benefits of energy efficiency and energy savings, especially health benefits and productivity. Policies and incentives for energy efficiency and demand-side management programs in future electricity markets with high shares of renewables and prosumers.

We are proud to acknowledge that over 50% of the articles published in this journal in 2023 were related to one or more of the 17 Sustainable Development Goals (SDGs).

The aim of this Special Issue is to collect recent information on the exposure of countries and regions to and the policy measures taken to combat the energy crisis triggered by the Russian invasion of Ukraine.

Authors are welcome to suggest suitable reviewers and/or request the exclusion of certain individuals when they submit their manuscripts.

Investments into downsized infrastructure can help enterprises reap the benefits of AI while mitigating energy consumption, says corporate VP and GM of data center platform engineering and architecture at Intel, Zane Ball.

Although AI is by no means a new technology there have been massive and rapid investments in it and large language models. However, the high-performance computing that powers these rapidly growing AI tools -- and enables record automation and operational efficiency -- also consumes a staggering amount of energy. With the proliferation of AI comes the responsibility to deploy that AI responsibly and with an eye to sustainability during hardware and software R& D as well as within data centers.

"Enterprises need to be very aware of the energy consumption of their digital technologies, how big it is, and

how their decisions are affecting it," says corporate vice president and general manager of data center platform engineering and architecture at Intel, Zane Ball.

One of the key drivers of a more sustainable AI is modularity, says Ball. Modularity breaks down subsystems of a server into standard building blocks, defining interfaces between those blocks so they can work together. This system can reduce the amount of embodied carbon in a server"s hardware components and allows for components of the overall ecosystem to be reused, subsequently reducing R& D investments.

Downsizing infrastructure within data centers, hardware, and software can also help enterprises reach greater energy efficiency without compromising function or performance. While very large AI models require megawatts of super compute power, smaller, fine-tuned models that operate within a specific knowledge domain can maintain high performance but low energy consumption.

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