Written Responses to Questions for the Record
From Sreedhar Sistu, VP of AI Offers, Schneider Electric
U.S. House of Representatives, Committee on Energy & Commerce
Subcommittee on Energy, Climate, and Grid Security
Hearing Titled, "*The Role of Artificial Intelligence in Powering America's Energy Future*"

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Questions from Ranking Member DeGette:

How can Congress best address AI's carbon footprint in forthcoming legislation?

- Continued adoption of Artificial Intelligence (AI) is estimated to increase power demand by two to three times that of current overall data center power demand. To mitigate the carbon impacts of this increased demand, various efficiency measures can be implemented that ensure energy use is optimized, and AI is a key enabler of this. For instance, AI supports the enhanced role of renewable resources through improved forecasts and resource deployment optimization. To this end, we encourage Congress to invest in energy efficient, clean data centers to reduce power consumption and carbon emissions. Similarly, Congress should consider investments to strengthen the domestic supply chain for the technologies that ensure data centers in the U.S. are prepared to meet the AI challenge efficiently and cleanly.

What energy resources present the greatest opportunity for powering AI in a way that does not contribute to increased emissions?

- AI machine learning is a valuable tool for enhanced use of renewable energy and reduced emissions through improved accuracy of renewable resource forecasting that maximizes the financial value of renewable energy and allows for easier integration into the grid. Thus, AI improves the grid's overall ability to receive, store, and deliver renewable power efficiently regardless of the specific renewable resource in question. As a result, energy providers can leverage these tools across a range of generation sources.
- This also demonstrates how AI can play a pivotal role in the expansion of renewable energy broadly. In order to demonstrate that renewable sources are capable of supplying energy as more fossil fuel generation is phased out, it will be necessary to show that renewables can be quickly ramped up to reliably satisfy demand. In a growing number of scenarios and use cases, AI is helping to make that case increasingly viable.

Are there any applications you have seen that effectively power AI with renewable energy?

- There has been an increase in the use of renewable energy, energy storage, microgrids, and other innovative technologies to power data centers, effectively reducing grid strain and optimizing consumption. Today, renewable energy sources, including solar, wind, hydroelectric, and biomass, make up approximately 20% of the total electricity generated in the U.S. The use

of AI in the clean energy sector increases the availability and accessibility of clean energy, making it a more viable and cost-effective alternative to traditional energy sources.

How can AI utilize renewable energy without putting greater stress on the grid, or using energy that would have otherwise gone toward people's everyday energy needs?

- As AI evolves and matures, the different types of AI loads will have mounting impacts on the technology's power needs. However, there are a suite of emerging optimization tools that are being adopted to reduce overall demand including scheduling computing load, synchronizing server capacity and load, reducing cooling dependencies, and optimizing space usage. Furthermore, AI allows for a deeper and fuller understanding of consumption patterns to help enable the use of digital technologies like virtual power plants (VPPs) and microgrids which reinforce the grid and ensure power is available when its needed.