Committee on Energy and Commerce

Opening Statement as Prepared for Delivery
of
Subcommittee on Energy, Climate, and Grid Security
Ranking Member Diana DeGette

Hearing on "The Role of Artificial Intelligence in Powering America's Energy Future"

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Thank you, Chairman Duncan, and thank you to the witnesses for being here today. Artificial Intelligence has been around for decades. But, since Generative AI's introduction to the public last year, it has been at the forefront of many American's minds. AI continues to rapidly expand and advance, and industries are interested in utilizing this new technology to streamline processes and increase productivity. One prevalent subset of AI is Machine Learning, where AI analyzes large data sets and uses algorithms to recognize patterns and provide insights.

An interesting feature of Machine Learning is that it improves itself through experience and data. The application of Machine Learning began in the energy sector around 2010. It allows for management of large data sets and provides analytics that are unattainable by humans alone. These data sets include information collected from weather forecasts, sensors, consumer patterns, and historical usage. This is useful for anticipating high stress and peak demand periods for the energy grid – key to ensuring energy reliability.

AI also has the potential to predict how much output can be expected from renewable energy sources – potentially unlocking the ability to rely more heavily on these sources of energy and assisting in the transition to clean energy. AI can also assist in monitoring and quickly identifying physical equipment failures. And as we continue to see an escalation in unpredictable weather events because of climate change, any technology to assist our energy grid will be crucial to its safety.

But, I want to highlight that we must proceed with caution because AI also poses many challenges. First, as we all know, ensuring the protection of our energy grid is a priority of this subcommittee. And our grid is already insufficiently secure against cyberattacks. A heavier reliance on AI could expand vulnerabilities and points of attack for cybercriminals, which poses national security concerns. Second, many Americans are just beginning to understand AI technology and the power it has. Integration of AI requires subject matter experts to be proficient in both AI and the specifics of the energy sector, which is a challenging position to fill.

Third, integrating AI into our current energy infrastructure will be challenging. Many companies will need to update their infrastructure to be compatible with new technology. This will be costly for industry across the board, but especially for smaller companies. Fourth, we must consider the "black box" problem. When AI is using its algorithms to learn and improve

outcomes, it is challenging, and in some cases, impossible, for humans to understand how systems make decisions. Many of the creators of new AI systems admit themselves, they are not entirely sure how the AI is reaching its conclusions. This poses serious risk when AI produces unwanted outcomes, and we cannot trace AI's decision-making process.   It is a difficult problem to fix. Using and relying on AI in critical infrastructure when we don't understand how it reaches conclusions is dangerous. One mistake and we risk thousands, and maybe even millions, losing the energy they rely on.

Finally, one more issue I want to touch on is the amount of energy integrating AI into our system will demand. AI technology relies on computer chips and, of course, energy to run. It is difficult to predict the electricity consumption if AI were dispatched at scale across the energy sector. But, if widely adopted, consumption for the energy sector's AI use alone could rival the energy use of some countries. AI has the potential to decrease emissions, increase reliability, and assist with decarbonization. But its implementation will not come without potential unintended consequences that we must be aware of. Which is why we are here to learn more about AI's application in the energy sector. And get a complete picture, both the pro and the con, for its implementation. So, thank you again for being here today, and I look forward to learning more. I yield back.