

The background of the entire image is a deep blue space scene. On the left, the curved horizon of the Earth is visible, showing a thin layer of white atmosphere and a dark, textured surface. The rest of the background is filled with a dense field of small, bright white stars of varying sizes, creating a starry night sky effect.

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George Farah is a veteran of the Mid-Atlantic region's robust energy industry, having served a variety of roles over the course of his 30-plus-year career. Currently the Vice President of Utility Services for a major regional electric utility, he has held several generating plant operations, project management and engineering positions, including leadership roles at a West Virginia power station and for gas, coal and hydroelectric plants in Pennsylvania, Maryland and Virginia. Farah earned a bachelor's degree in mechanical engineering from the University of Pittsburgh and a master's in business administration from Indiana University of Pennsylvania.

Are You Ready?

It almost seems like magic. What other commodity comes to mind that:

- you don't need to think much about?
- is available whenever you want it in whatever quantity that you'd like?
- whose quality doesn't vary?
- the cost of which hasn't changed significantly for decades?
- is essential to maintain our lifestyle?

sectors, all add to the challenges of getting this product to the exact right place at the exact right time.

Some have a desire to change the system very quickly. There may be good reasons to do so, but we all need to realize that the technology to fundamentally change the electric system is simply not yet fully available, and it will take time and money to transform it – a lot of time and a lot of money. Generation changes affect

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Electricity is more important to us than it has ever been. Sometimes we don't appreciate the integrated and complex supply chain that works in harmony – the production of the product, the transmission of it, the transformation of its voltage and the delivery of it – for our use in industry, commercial facilities and in our homes. Most times, the public never realizes that it cannot be stored in bulk and must be manufactured on demand. Growing demand for electricity in data centers, reduced demand in other places due to energy-efficiency programs, smart technology, and changes in demand regionally for industrial, commercial and residential

the transmission and distribution systems. Many pieces of our economy will be affected – some positively and some negatively.

Renewables are an important piece of the future, and we should all be interested in effectively incorporating them over a period of time. Utility-scale solar is being built in Ohio, Virginia, Pennsylvania and Kentucky. Solar panel and electric vehicle and battery manufacturing is expanding in Ohio, as is wind energy. Maryland has a program in place that authorizes utilities to build electric vehicle charging stations and batteries. West Virginia has some wind and has opened the door for

utilities to build some solar. Aside from technical challenges, there are legal and public perception challenges. Getting all of that coordinated is a big job, and there is more interest in dealing with those challenges in some places than others.

Electrification of more parts of the economy (such as transportation) is happening – but are we ready to increase electrification during the transition to a system with an increasing dependence on renewables?

- Without the ability to store massive amounts of electrical energy, renewables cannot completely replace dispatchable, on-demand generation sources such as fossil-fueled and nuclear plants.
- Without significant upgrades, the grid is not designed to take in-and-out flows from countless small sources when the wind blows and the sun shines.
- Without sufficient, fast-charging stations, electric vehicles cannot be broadly deployed effectively.
- Without a comprehensive strategic plan of all of the above, we risk a haphazard transition and an unknown cost and economic impact.

This society deserves strategic planning, incentives and policy that will help government, corporations and workers to transition effectively with a real understanding of the costs and impacts associated with major changes on such an important system.

“Hope” is not a strategy, but I do hope that when I buy an electric vehicle, I can find a fast-charging station without worry. I hope I can continue to have affordable electricity all day and all night in summer, winter, spring and fall. I hope our leaders will work together to develop a reasonable transition plan so that our economy thrives. I hope that our reliable electric grid can handle all that is being thrown at it, and I hope that the clock doesn’t strike midnight on this magical system just because we haven’t planned well enough for an effective transition. ▼

