

A new and increasing concern is that the expansion of AI (artificial intelligence) centers has become an overwhelming burden on our national power grid. There have been numerous warnings that our country's headlong race to electric vehicles (EVs) is already taxing our existing power grid. New electrical production is not coming online fast enough to offset the increasing use of electricity. Among other problems, there are groups opposed to many types of increased production of electricity including nuclear, coal, wind farms, fossil fuels and even solar power. What has been a concern in recent years is now getting worse. The consumption of electricity by AI is driving an expansion of fossil fuel use. While we may be moving to EVs, our electric generation could be expanding with less-than-clean power sources.

The administration's push to sell more EVs had some preliminary success, presumably because businesses and public agencies decided to get on the green bandwagon. However, once that initial rush was over, sales of EVs have declined because the average American is not interested. Although, the sale of hybrid cars, where you can refuel instead of recharge, has continued.

In the bus industry there still is a strong movement from diesel to battery-electric buses. However, we are already seeing the start of a trend in another direction. People have noted the problems in locating the materials needed for batteries and the pollution caused by their manufacture. Lithium ion battery fires keep making the news and reflect negatively on EVs. The New York City Fire Department has stated that lithium ion batteries are now the most likely cause of fires, replacing cigarettes. There are some bus operations that have moved away from battery-electric because of concerns with lithium ion battery fires.

Europe has already seen the start of a movement to hydrogen fuel cell power for buses. Among other things, hydrogen fuel cell technology provides a greater range for coaches that can make it more practical than battery-electric power. Hydrogen fuel cell power is already making inroads in the United States in buses.

There have been warnings that our movement to electric vehicles is taxing the national power grid. Those involved suggest that we need to improve our power grid infrastructure and increase our production of clean electricity before moving ahead at full speed to EVs. While there are numerous projects seeking new sources of electricity, they are not bearing fruit fast enough. In similar fashion, there are projects and plans to increase traditional sources of electricity, but they are failing to come online faster than the demand is increasing. The recent rush to develop AI data centers is only making the situation worse.



AI and the Power Grid

by Larry Plachno

There are increasing concerns that we have failed to build up our power grid infrastructure and clean energy before moving headlong into electric vehicles and AI centers. In many areas, power generation companies are continuing coal fired plants and building natural gas plants instead of clean energy to keep up with electrical usage. The result is that moving to electric vehicles could cause more pollution rather than less. GREY85PIXABAY.

The tech giants are racing each other to develop AI data centers. They already have warehouses or underground bunkers packed with racks of servers that power the Internet. As the tech giants fight in a global AI building race, a frenzy of building data centers is taking over the country and the globe. This involves a greater number of

computers that are more complicated, faster and require substantially more electricity. A large data center in the Midwest uses as much electrical power annually as seven million laptops running eight hours a day.

According to the International Energy Agency, a ChatbotGPT search consumes

nearly 10 times the amount of electricity as a conventional search on Google. Some computing campuses are eating up as much electrical power as a modest-size city. One source suggests that there are more than 2,700 data centers around the United States and much of this is requiring a return to fossil fuel power.

Bear in mind that AI is extremely competitive so the tech giants are racing each other to develop data centers and stay ahead of the other guys. As a result, the use of electric power and avoiding pollution may be secondary considerations. Some of these centers claim they are “going green” because they have contracted for clean nuclear or hydroelectric power.

What they are not telling you is that because they have locked in a significant part of the power available, the local electric companies have little choice but to increase electric production for their other customers by less-clean alternatives including retaining coal-fired and natural gas power plants. To a large extent, the ability of the AI centers to find electric power today will determine the winners and losers in the AI development race. As a result, we are left with numerous places where there are significant delays in retiring fossil fuel electrical generating plants.

In addition, some of these tech giants are claiming that they are developing alternative power sources that will help generate electrical power in the future. Microsoft is working with partner Helion to develop fusion power plants. Bill Gates has his own nuclear power company called TerraPower.



The mad rush to AI data centers by the tech giants may be consuming more clean energy than we can provide. One source says that there are more than 2,700 data centers in buildings and bunkers that can require as much electrical power as a small city. This demand for electricity is causing a return to fossil fuel power. DIGITAL ARTIST AT PIXABAY.

Altman is talking about building small nuclear plants adjacent to the AI centers. So far, most of this has been just talk. The Gates solution has been held back because they cannot get the type of enriched uranium they need.

Some AI companies suggest that advancing AI could prove more beneficial to the environment than reducing the consumption of electricity. Others say that AI

is making the power grid smarter and opens the door for the arrival of new technologies. Google wrote that it is speeding up climate action by using AI. However, what is left unsaid and unmentioned is the necessity of continuing fossil fuel electrical generating plants that have become necessary to assure the supply of enough electricity.

Noteworthy is that just outside of Salt Lake City, Meta is building a \$1.5 billion data campus that will reportedly use as much electrical power as what is generated by a large nuclear reactor. Meanwhile, Google is planning to build on 300 acres located nearby. As a result the retirement of a large coal generating plant has been pushed back to 2042, a full decade, while another plant closure has been delayed until 2036.

Recent increases in tech energy requirements in Georgia have caused the expansion of fossil fuel use that includes continuing a 50-year-old coal plant in Mississippi. Microsoft’s expansion in the Milwaukee suburbs will delay the retirement of coal plants while expanding gas power facilities. Google and Meta plants in Omaha will delay the closing of a coal generating plant from 2022 to at least 2026.

An interesting side note is that there have been several people with negative opinions on AI. Does it really make sense to replace humans with computers, particularly since the mid-year 2024 report showed that unemployment was increasing? Some of the groups and people watching the development of AI have strong concerns.

Research suggests that a ChatbotGPT search consumes nearly 10 times the amount of electricity as a conventional search on Google. The result is a power requirement that has become a problem for the electrical grid that is not prepared to supply clean electricity. Additional power usage is causing a movement back to fossil fuels. YEIFERR AT PIXABAY.



Recently, MRC Free Speech America had its researchers ask Google's Gemini AI questions about America. The AI chatbot refused to say that Americans should celebrate the Independence Day holiday. It accused the American National Anthem of being offensive. In addition, it said it was difficult to identify who were the good guys in World War II. When asked whether the Communist Manifesto is more important than the Dec-

laration of Independence, the chatbot said it depended on one's perspective. There are legitimate concerns over whether electric power should be used to develop AI if this is where it is going.

A recent study by Goldman Sachs may be cause for concern. It shows that by 2030, data centers will require eight percent of all electricity produced in the United States.

While new solar and wind farms can meet about 40 percent of this, much of the remainder will have to come from expansion of power from natural gas. This expansion of natural gas use will create emissions equivalent to adding 15.7 million more gas-powered cars to our roads.

Hence, we are faced with the fact that even if we convert to battery-electric buses and cars that are zero-polluting when operating, they will require power generated with pollution equivalent to putting gasoline-powered cars back on the road. How can this be classed as "going green?"

The only way to solve this problem is to improve our power grid infrastructure and increase power generation from non-polluting sources before we move ahead with AI data centers and EVs. □

In some cases, The AI data centers are locking in power from clean sources including hydroelectric, nuclear and wind power. However, this then requires the power companies to revert back to coal or natural gas to serve their owner customers. Shown here is the nuclear plant at Byron, Illinois. NBT.



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The result of all of this is that moving to electric cars and buses could be increasing pollution rather than reducing it. In the headlong rush to move to electric power to reduce pollution, everyone forgot to make sure that the power grid has the infrastructure and the clean power to handle the load. Sadly, there have been warnings about this for many years, but no one seems to be paying attention. BYD.