



Written by **Alisha Christina McBeth**  
Exclusive for [transformer-technology.com](http://transformer-technology.com)

# Investing in Energy-Efficient Smart Technology Amidst America's Transformer Shortage



Alisha Christina McBeth is an aspiring book author who has been contributing to various international publications for the last decade. Aside from working on her manuscript, she spends her time traveling with her family and three dogs.

The ongoing transformer shortage crisis has led to the disruption of productivity across the country. It has affected energy use in private residential areas and delayed projects in large-scale industries such as construction. This is exhibited by a pause in infrastructure work due to the lack of usable power.

Electrical grids continue to supply power, but this is essentially unusable without transformers to adjust the high voltages into consumable energy. These machines are also tasked with safely distributing electricity to communities and power restoration after calamities. The insufficient amount of transformers, paired with high energy demands, causes intense pressure on the grids. This strain is the primary source of electrical shortages and failures.

This looming threat presents many issues and challenges, but there are ways to mitigate its effects. Specifically, we can turn to new technology for solutions. In this case, smart technology may be the best way to adjust how we use energy and mitigate the transformer shortage.

**Electrical grids continue to supply power, but this is essentially unusable without transformers to adjust the high voltages into consumable energy.**

### What is smart technology?

Smart technology refers to devices typically connected to the internet and made to be controlled digitally. These come in the form of handheld gadgets, household appliances, or heavy machinery. They have been integrated into modern life, with over 60% of American adults owning some variation of smart technology.

Their smart features include advanced systems that allow them to improve machine efficiency and reduce energy waste. Since they are easily accessible, they allow for interconnectivity and flexibility. Users can conveniently monitor and manage their appliances effortlessly no matter where they are. They have been adapted for use in both commercial and residential spaces.



Photo: Pexels, Shutterstock

## How can they help with the transformer shortage?

The most important benefit of going with smart technology is the ability to reduce energy consumption. With the help of such appliances, users can improve their power management and lessen unnecessary electrical demand. This is made possible in different ways.

### The most important benefit of going with smart technology is the ability to reduce energy consumption.

First, most smart technology comes with **energy-saving features**. Electronic devices with this benefit perform the same task using less energy. This is perfectly demonstrated by home robot vacuums that only use around 60-90 watts of power when operated, compared to traditional upright vacuums, which consume up to 1600 watts. It accomplishes the same task without the high energy costs and amount of maintenance. There are also smart versions of dishwashers that can automatically stop their wash cycles when they detect clean dishes. This feature decreases both water and energy use.

Their accessibility also allows smart devices to be **automated via mobile applications**. This is shown by smart light switches that can be programmed with daily schedules so that they can turn off on their own once there's no need for them. Their illumination strength can also be dimmed on the app so that they require less electricity when they're on. There are also smart ceiling fans that can be switched on and off with one tap on the phone. These kinds of fans have lower energy costs than regular fans, and these can still be reduced by decreasing the fan speed using the app.

This sort of adjustment feature is significant because weather and heat play a vital role in energy consumption. Heating and air conditioning make up half of a household's energy usage. This **temperature regulation** is influenced by seasonal changes and location. Depending on how high the temperature difference is, heating systems end up consuming even more energy to combat it.

To address this, there are smart thermostats that have sensors that can detect temperature and adjust the heating or cooling accordingly without human intervention. Thus, people have the convenience of a comfortable home while enjoying lower energy costs.

### Heating and air conditioning make up half of a household's energy usage. To address this, there are smart thermostats that have sensors that can detect temperature and adjust the heating or cooling accordingly without human intervention.

What makes it even better is that all these aspects are available for **monitoring**. Smart devices store data and present them in a way that is understandable by their owners.



**EXPERT OPINION:  
ENERGY-EFFICIENT  
SMART TECHNOLOGY**

These can usually be found in the partner apps that accompany the appliances. They provide meters that measure rates of use, energy consumption, and other important information that would benefit consumers. Not only is it handy, but researchers have also discovered that such smart meters can influence behavioral changes positively. By observing their consumption patterns and how they affect their expenses, people become more motivated to continue reducing their energy use.

Thus with the help of smart technology, there can be a collective change in how much energy is consumed. Through these, the consequences of the transformer shortage can be alleviated or even avoided.



