Subject: Highlands Power
March 29, 2023

Since the recent Duke Energy power outage shut down the Highlands grid, I have had a number of suggestions and questions about the issue. Let me respond to several of these items as best I can.

Since the outage, our town manager, public works director, and I have reviewed many power-related issues with a Duke Energy representative. In fact, we routinely converse with Duke Energy concerning operations and the administration of our wholesale contract with them.

Some folks continue to ask why the town does not restart operations of our generating plant that was built in 1929. In the coming weeks, I will address this question in more detail on my website, AskmayorPat.com, but for now, let me give you a few high points of that matter.

The original power building and equipment are in shambles and are now the property of the US Forest Service. It would take years of studies and permitting to reinstate the Federal Energy Regulatory Commission (FERC) license and millions of dollars to build a new system. In terms of output, the best the original power plant could do was to generate 1 megawatt at maximum efficiency. Our town engineer estimates a new hydro plant, using the same water system to generate about 1 megawatt, would provide electricity to power the downtown street lights and maybe a little more.

Currently, we are using 10 megawatts in town on light-demand days, and on high-demand periods almost 15 megawatts can be used. With the trends toward electric heat and cars, the demand will continue to expand.

The national trend is to move away from using hydro generation and to complicate matters, every environmental organization in WNC would challenge a new hydro project as a green energy initiative. So, would I.

As for Duke Energy, there will continue to be isolated periods when their power grid is down. As a wholesale customer, Highlands has a power loss when Duke does. Some people have said we need an additional transmission line from another source to guarantee power to Highlands. That would cost millions of dollars to build, and you can surely imagine any new transmission right-of-way would face tremendous resistance from residents near its path. As an example, just look at the tall, brown metal utility poles Duke Energy has on US 64 coming in from Cashiers. It was a major construction project for Duke Energy to install those supply lines.

Another option would be to use solar energy as either an alternative to the current system, or as a way of reducing peak demands, or as a backup in the case of town power loss. In optimal conditions -- and the Highlands typography is not optimal -- it takes 10 acres of solar panels to generate one megawatt of power. To fully power our grid with the present technology, it would take about 100 to 150 acres of solar arrays. To support the solar grid, the town would also need to have a battery storage system, another costly investment.

These options could be explored, and the first step would be to find the 100 acres or so of south-facing land for the solar field. It might be in the future that Highlands can design and finance such a system.

A battery system could be built to back up our existing Duke Energy power system, but would only provide a few hours of supply. One consideration here must be at what price do we invest to avoid a few hours of power loss.

The town will review options before the Duke Energy contract is up for renewal in 2028. Who knows what will be decided?

In the near term, if someone just can't afford the loss of power for any period, a generator is the best option. Sallie and I have lived here for 24 years without a generator. There have been some periods with bad storms where we lost power for a day or so. We have always viewed it as being a part of living in this isolated mountain area.