

Ellenbogen Comments on the Micron Technologies Draft Scoping Plan

I have some comments on the Draft Scoping Document. I am a former Bell Labs Engineer that worked in their Power Systems Laboratory. My research has been used by the NY State Public Service Commission as the basis of a utility conference to address transmission line loss that resulted in significant energy savings in NY State. I was also the Keynote Speaker at the 2023 Business Council of NY State Renewable Energy Conference.

Issues

The current plans for powering the Micron facility in Clay, NY, while looking good on paper, will in fact increase emissions on energy used to supply the Micron facility, raise Micron's costs above what they could be, and are not achievable in any realistic time frame using renewable energy. Forcing Micron to purchase Renewable offsets may look good on paper but will do nothing for the environment. The reality is that NY State is going to have major difficulties just providing renewable energy for its existing electric load, let alone the predicted additional 16 Terawatt hours (TWh) of the Micron facility. To put that amount of energy in perspective, it is nearly as much as was produced by the 2 Gigawatt Indian Point Nuclear Plant in its last full year of operation.

The New York Power Authority has said that it will provide 140 Megawatts of Hydroelectric Power to Micron, however that Hydropower does not exist, even at night. Any hydropower provided to Micron will force whoever is using it presently to switch to fossil fuel generation. It is an energy "shell game".

The reality is that Micron is going to be powered by Fossil Fuel Generation that is transmitted over long distances, very likely from out of state in Pennsylvania or Ohio that have generation carbon footprints far higher than those in NY State. As GHG emissions are not cognizant of political boundaries on a map, those emissions will end up affecting NY State residents. Additionally, transmitting that much power over those long distances is going to greatly increase line losses. It will also increase the strain on the transmission system in Western and Central NY State, raising costs for that as well. Just a 3% line loss on that amount of energy will result in losses totaling close to 500 Gigawatt hours (GWh) annually. To put that in perspective, Cornell University uses 200 GWh annually to operate the entire University, so just the energy loss getting the power to Micron could operate Cornell for 2-1/2 years. Importing electric power to the Micron facility from off-site is a foolish concept and there are far better solutions. Instead of making Micron look "Green" on paper to satisfy some prescribed number in a document, Micron could be "Green" in reality with far lower holistic emissions and lower operating costs simultaneously. It would be better for the environment, better for the bottom line of Micron Technologies, and better for the economy of Central New York.

Solutions

By adding a 2 GW combined cycle plant on the Micron Property, it would save the 500 GWh of line loss. That is the annual output of a 500 Megawatt solar array and as energy is fungible, eliminating those losses would make that wasted renewable energy available to help green the rest of the state. Further, by siting the Generating Center on the Micron site, the waste heat would be made available to Micron. As they have an enormous thermal load, they could make use of nearly the entire energy content of the combusted gas used to generate electricity. That sized facility is roughly twice the size of the recently built Crickett Valley Energy Center. In 2018, the cost of that facility was approximately \$1.5 Billion.

Adjusted for the recent bout of inflation, that could be \$2 Billion today, making the total cost of a combined cycle facility for Micron approximately \$4 Billion. However, Micron will recoup that money in energy savings and reduced costs, making the site even more attractive for development. As Micron will be expanding over time, the generating center would not need to be built at its full capacity initially. It could be expanded over time and if newer, more efficient technologies were developed, those could be incorporated as part of the later expansion of the energy center..

There are also possibilities for using the CO2 emissions of the generating facility for agricultural purposes, further reducing the carbon footprint of the plant.

Common sense solutions to energy issues have to be adopted if NY State is going to reduce its Carbon Footprint and remain a cost competitive state in which to do business. Blindly following an ideology that contradicts math and physics is not an intelligent way to create a sound environment for either business or the health of NY State residents.