

## Caiazza Comments on the Micron Technologies Draft Scoping Document

I have some comments on potential significant adverse impacts that should be addressed in the Draft Scoping Document. I am a retired air quality meteorologist and live less than seven miles from the White Pine Commerce Park. I recognize the tremendous opportunity that this project affords this area and provide these comments in that context. I recommend that Section 5.3 – Methodologies for Technical Analyses include recent permitting requirements related to proposed disadvantaged community guidance. I suggest two co-generation alternatives be analyzed in the Draft Environmental Impact Study (DEIS). The associated benefits and adverse impacts of co-generation relative to the benefits and adverse impacts using electricity from the grid and natural gas only for thermal load requirements on-site should be considered in the environmental analyses. In the short-term because natural gas apparently is going to be used for process applications and heat, I believe a natural gas fired combined cycle combustion turbine (CCGT) should be included to support process applications and heat as well as provide electricity for the facility. In the long-term I believe that the facility should be designed so that a small modular nuclear reactor could be built to replace the CCGT when the technology is proven and available.

### **Disadvantaged Community Requirements**

There is a [draft permitting requirement](#) that should be considered in the Technical Studies section of the DEIS. The New York State Department of Environmental Conservation (DEC) recently proposed a new policy that will require an analysis of impacts on disadvantaged communities (DACs) as part of most environmental permitting actions. The draft policy, DEP-23-1: *Permitting and Disadvantaged Communities*, [was proposed](#) by the Division of Environmental Permits on September 27, 2023. While this is a draft policy it will be in place by the time the DEIS is complete. My initial reading of this policy suggests that it is so comprehensive that it would not surprise me that, even though the facility is not in or adjacent to a disadvantaged community, that it still could be a consideration.

### **Co-Generation Alternatives**

Section 4.3 Alternatives to be Analyzed in the DEIS should include options for co-generation. In brief, I believe there is a compelling argument that the proposed facility is so large that its energy use has ramifications not only to the facility but also New York State policy.

On Page 18 in the discussion of project locations the rationale for this location was described:

While all four New York State sites were among the most expensive in terms of construction costs, personnel, water and wastewater, and real estate and personal income taxes, the New York State sites had a competitive advantage on electricity and natural gas costs. On balance, the study concluded that New York State led all competitors in terms of the capacity, capability, and probability of delivering a meaningful incentives package.

There may be a competitive advantage today for electricity and natural gas costs today but when the electric grid is transitioned to “zero-emissions” in the future electricity costs will increase dramatically. The likelihood of the complete buildout improves if energy costs are kept low and that would be best accomplished if Micron contains costs by on-site generation. Furthermore, I suspect, but do not know,

that natural gas will have to be used anyway for system processes and heating. If that is the case then this option is a pragmatic energy-efficient solution.

According to the information provided so far, the amount of electric power required by Micron if everything is built will be equivalent to the electric power used by Vermont and New Hampshire. An [article by James Hanley](#) at the Empire Center that describes potential ramifications:

Computer chip manufacturer Micron has revealed that by the 2040s its Onondaga County factories are going to be sucking up enough electricity to power [New Hampshire and Vermont combined](#). Put another way, in a single year Micron will use enough energy to power the city of Buffalo for more than six years.

All of it is supposed to come from renewable energy—but to date, despite offering Micron \$6.3 billion in taxpayers' money to move to New York, the state has no plan for providing that much renewable power.

Micron predicts it will use over [16,000 gigawatt-hours of electricity annually](#). To get a sense of how much that is, a gigawatt-hour is roughly the amount of energy produced by a single large nuclear reactor in one hour. Micron's expected demand is almost exactly what the two reactors at the Nine Mile Point nuclear plant produce each year.

But since their factories will allegedly use 100 percent renewable energy, the big question is where it will come from.

Micron will need to draw 1.85 gigawatts of power from the grid continually, 24 hours a day, to power its operations. The New York Power Authority has offered Micron [140 megawatts](#) (0.14 gigawatts) of hydropower. It may not have that much to spare, except at night when statewide electricity demand drops. But even if it can steadily provide Micron that much power, that's just over 7 percent of the company's needs.

Micron has also signed a [178-megawatt](#) (0.178 gigawatt) onshore wind power agreement. That will produce less than 467 gigawatt-hours annually, a mere three percent of Micron's needs. Add those together, and 90 percent of Micron's power demand remains to be determined. Even before Governor Hochul bribed Micron to come to New York, the state faced a [10 percent deficit](#) in its energy supply by 2040, creating a risky future of [probable blackouts](#) due to insufficient power production.

The danger is caused by the state's climate policies. As consumers are mandated to buy electric cars, and households are forced to switch from natural gas to electric heat, electricity demand is expected to as much as [double](#) by midcentury. And 70 percent of that future electricity demand must be supplied by renewable energy.

Because hydropower output will not increase significantly, solar and wind power must increase from their current output of approximately 7,600 gigawatt-hours to as much as 185,000

gigawatt-hours by 2050. When Micron is added to the mix, the need will rise to almost 200,000 gigawatt-hours of wind and solar, a 2,600 percent increase from today.

That's a challenge New York simply has no real plan for achieving, because the state's renewable and clean energy goals are based more on wishful thinking than hard-headed analysis about the technical challenges of radically restructuring the state's power system.

Richard Ellenbogen submitted [relevant comments](#) to the New York State Public Service Commission (PSC) "[Order initiating a process regarding the zero-emissions target](#)". Ellenbogen argued that natural gas-fired combined cycle power plants are a viable alternative during the transition. He makes a persuasive case that the huge electricity load of the proposed Micron chip fabrication plant should include a combined cycle co-generation plant that would provide both electricity and heat for the facility.

He explains:

With regard to Micron Technologies, one could be built on-site that would eliminate 500 GWh of line loss while also providing Micron easy access to high temperature thermal energy. The Energy on Demand aspect of the generating plants also eliminates the need for trillions of dollars of battery storage. It is not a perfect solution, but it is a far better solution than "ideal" solutions that can't be executed because of the previously documented issues.

I recommend that the DEIS include the option for a co-generation facility. If small modular nuclear reactors were a proven technology, then using that approach would provide long-term zero-emissions consistent with the Climate Leadership and Community Protection Act. Unfortunately, reality is that this technology is not available but neither is all the technology necessary for an electrical grid dependent upon wind, solar, energy storage, and a dispatchable emissions-free resource that the New York Independent System Operator, the Climate Act Integration Analysis, and the aforementioned PSC order all agree is necessary. Therefore, to ensure that this vitally important project has the affordable power it needs to come to fruition, natural gas co-generation is a logical option that should be included. The DEIS should consider phasing in sufficient co-generation to provide the on-site electricity and thermal load requirements as the facility expands. The DEIS should also assess an alternative with a project layout that could eventually enable deployment of a nuclear option.

### **Personal Background**

I have extensive experience with air pollution permitting and regulatory analysis with over 40 years' experience in the sector. The opinions expressed in these comments do not reflect the position of any of my previous employers or any other company I have been associated with, these comments are mine alone.

Roger Caiazza

[Pragmatic Environmentalist of New York Blog](#)

[NYpragmaticenvironmentalist@gmail.com](mailto:NYpragmaticenvironmentalist@gmail.com)

Liverpool, NY