

From: James S. Ballard <comusmail-ballard@yahoo.com>

To: Councilmember.Riemer@montgomerycountymd.gov <councilmember.riemer@montgomerycountymd.gov>

Sent: Monday, July 13, 2020, 11:12:56 AM EDT

Subject: ZTA 20-01, the July 6, 2020 T&E Committee Work Session, and the July 10, 2020 PHED and T&E Joint Work Session

Dear Mr. Riemer,

As a retired, 23-year FERC-experienced electrical engineering subject matter expert (still professionally licensed in MD, PA and VA), and after viewing the July 6, 2020 T&E Committee Work Session, and the July 10, 2020 PHED and T&E Joint Committee Work Session, I am compelled to ensure that you, county staff and others are not misinformed and misinforming as you all discuss the technical basis and potential physical and economic impacts of ZTA 20-1 with the other committee and council members, county staff and the public.

Are you not aware that:

1. Formulating successful climate and energy policy requires complete, competent, honest and transparent dialogue and sharing of information, and accounting for any proposal's strengths, weaknesses, opportunities, and threats, from economic, climate change, and electric grid operation perspectives.
2. The decision to propose ZTA 20-01 while the Montgomery County Climate Action Work Groups were in the midst of forming plans to ensure the county has the best chance to achieve its climate objectives has added unnecessary impedance to the county's ability to achieve those goals. It has set well meaning people against one another, all of whom have the same goal of addressing the climate emergency.
3. It is important to understand the electric grid operation physics and economics in order to coherently debate the merits of proposed energy projects. You cannot change the laws of physics, so know what they are and ensure they are used properly in your evaluation. There is no free lunch when it comes to energy policy. Incentives, subsidies and any errors or unaccounted for costs are paid for by all ratepayers of the electric system and should be needed, reasonable, and justified before implemented.
4. To correctly evaluate the costs of energy proposals, you need to compare the delivered costs of service, not installation costs. It has been my professional experience that competent implementation of higher initial cost options almost always result in better performance, leading to lower delivered cost over the life of an energy project.
5. Your county staff expert participating in the July 10, 2020 PHED and T&E Joint Committee Work Session does not understand that distributed, Behind-the-Meter (BTM) solar power generation directly benefits every user of the electric grid, not just the electric consumer responsible for the install, but that Utility Grade (UG) (for the purposes of this discussion, this is not a size-related nomenclature, it means solar generation that is not behind the meter at the point of energy consumption) increases costs for all users on the electric grid, not just for the electric consumer responsible for the install.
6. When evaluating the costs and potential installation lead time of solar power generation as contemplated in ZTA 20-1, you must completely account for all costs, including land acquisition, substation construction and physical security costs directly associated with the physical install, along with costs related to electric grid studies to understand and physically mitigate (through infrastructure investment) the true impacts of individual, potential grouping of installations and for the entire solar capacity potential that is being proposed for an area that has sparse electric service to begin with. There are no such costs or construction lead times associated with distributed BTM solar power generation.
7. When evaluating the benefits of solar power generation as contemplated in ZTA 20-1, it is important to understand that it is actually physically impossible to net-meter customers of UG solar installations. If net metering of solar power generation as contemplated in ZTA 20-1 is permitted (it does not matter what the MW capacity of the solar installation or regulatory rules are), the energy costs of all rate payers in a solar power generator's service territory will subsidize the increased costs that are absorbed by the electric system, while receiving no benefits. This is why in December 2019, FERC issued an order seeking to end net metering and other ratepayer and bulk grid funded subsidies for solar power generation similar to that as contemplated in ZTA 20-1. As subsidies dry up, future customers of UG solar installations will be

subjected to full costs of operation, which will make them much less competitive with BTM solar generation which provides residual benefits to all system customers.

8. Much of the electric system in the Agricultural Reserve (AR) is not well suited for interconnection of solar power generation as contemplated in ZTA 20-1. Most electric lines running through this area of the county are single and two phase circuits that are not large enough to accommodate interconnection and operation of solar power generation as contemplated in ZTA 20-1. In all likelihood, Potomac Edison, Potomac Electric, and Baltimore Gas and Electric will need to increase the capability of the distribution system (perhaps through eminent domain) at the expense of their rate payers who will not directly benefit from the interconnected solar power generation. If the power companies do not increase the capabilities of their distribution systems, all of their rate payers will suffer the consequences of paying for increased electric system losses due to the addition of large sources of energy on a power system that was not designed to be used in such a manner.

9. When contemplating proposed changes in energy policy that have potential for large negative impacts on rate payers (as described above) and county residents (such as loss of farming related jobs) it is important to ensure that the need for that policy change is demonstrated by facts and due diligent study.

10. The driving impetus behind the ZTA as stated by you in the July 6, 2020 T&E Committee Work Session was that the study being done by the State Commission shows we need 10,000 acres of solar power in order to achieve the County's climate goals is not correct. This value is an input assumption, not an output of the report. So the report makes no such finding. The NREL data that this 10,000 acre figure comes from actually shows that there is also enough urban acreage in Maryland to fulfill its renewable energy needs.

11. The quickest way to add solar to the AR without any of the above mentioned costs is to increase the AR solar capacity limit to the current 120% of the location's maximum energy demand, rather than 120% of a location's annual energy usage. Implementation of Maryland's net metering 200% annual energy usage limit would likely allow netting of all energy produced. Capping the AR solar installation capacity to 120% of a location's maximum demand will ensure no negative impacts on the AR power system customers, since the system is designed to power, whether it is provided by the power company or by BTM solar generation. I would estimate that the AR's potential solar capability will immediately increase over 50% (assuming a 65% customer demand factor, $1 \div 0.65$ equals 1.53).

12. Energy storage, not renewable energy production is the biggest hurdle that must be overcome in order for the county to meet its climate goals. Montgomery County needs to develop enough energy storage to deliver up to 100 hours of its energy needs to achieve 80% annual energy consumption from renewable energy resources. To achieve 100% annual energy from renewable resources, Montgomery County needs to develop enough energy storage to deliver up to three months of its energy needs. If you do not take advantage of the Dickerson plant location to develop county-base energy storage, you will not meet the county's climate goals. In addition, the site is ideal for utility grade interconnection of solar power generation facilities that will have absolutely none of the above mentioned negative impacts on rate payers and county residents.

I respectfully thank you for considering my input to this process and am available to fill you in with any additional information if you would like. To be clear, I am a solid proponent of increasing the counties solar power generation capacity. I would just like to accomplish the county's climate goals at least cost and using the most probability path to success for county electric rate payers and residents. ZTA 20-1 is not the answer.

Sincerely,

James S. Ballard, P.E.