

Ms. Sherri L. Golden RMC
Secretary of the Board
New Jersey Board of Public Utilities
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January 12, 2024

RE: Docket No QO22050327

In the Matter of the Implementation of New Jersey's Clean Energy Program: New Construction Program

Dear Ms. Golden

Thank you for the opportunity to comment on the above referenced docketed matter. We appreciate all the time and effort that the BPU staff and their contractors have put into developing this Compliance Filing for the new New Construction Program. The comments below are intended to assist in the ongoing process to help BPU develop and implement the revised New Construction Program (NCP).

The BPU staff and their consultants should be commended for the revisions to the March 2023 New Construction Program compliance filing over the proposed July 2022 draft. These revisions will significantly advance the goals of the 2019 Energy Master Plan for the building sector and begin the transition to actually building net zero energy homes. The compliance filing recognizes the continuum that New Jersey needs to be starting on to transform the New Jersey new construction building market to 100% net zero energy.

General comments

While the revised compliance filing is a significant upgrade over the initial draft, the following comments are intended to assist in the transition to 100% net zero energy in the new construction market in New Jersey. The comments empathize the need to move the current clean energy programs into a more coordinated and integrated approach to energy use and not just separate energy efficiency (EE), renewable (RE) or electric vehicle (EV) programs. The 2019 EMP was an integrated energy plan (IEP) and New Jersey need to move to a more integrated approach.

It is clear, in evaluating the changes in the overall energy market, that several energy sectors that were once separate programs including EE, RE and EVs are now converging at the building level. This convergence is being accelerated by the advance of grid communication technologies. The distribution grid customer can now have a more efficient two-way communication with their local distribution grid in the same manner that central power plants and large electricity users have been able to do so for years with the transmission grid and the grid operators. The availability of cost-effective grid communications is a game changer.

In general, all the New Construction pathways should be expanded to include the objectives of Grid-Interactive Efficient Buildings ("GEB") to advance flexible load management as described in the USDOE guidance "A Roadmap for Grid-Interactive Efficient Buildings." Grid-Interactive Efficient Buildings or GEB are defined as an energy efficient building with smart technologies characterized by the active use of distributed energy resources (DER) to optimize energy use for grid services, occupant needs and preferences and cost reductions in a continuous and integrated way.

It is important, in order to lower grid modernization and distribution upgrade costs to the ratepayer, that the public utilities include GEB in their distribution planning. Likewise in order to

lower energy costs to the energy consumers the public utilities need to include a whole building approach in their Triennium 2 programs that includes GEB as well. But it is equally important to require GEB in building energy codes.

GEB will be a part of the next IECC and ASHRAE building energy code update after 2024. Since the NCP is the leading edge in implementation of the next generation building energy code in New Jersey, the BPU needs to lead this transition to include GEB in all the NCP pathways.

While a vastly better proposal, the revised NCP is still basically an energy efficiency program. The proposed NCP incentivizes energy conservation measures (ECM) but should start to include the management of all clean energy incentives to the NC customer under one program.

Passive home guideline are primarily energy efficiency guidelines. They address renewables including on-site solar but only indirectly address on-site storage, EV, EV charging or GEB. The DOE Zero Energy Homes guidelines have a similar focus on EE measures that includes on-site solar. The DOE ZEH requires solar ready, it does not require actually onsite solar installation.

The DOE ZEH guideline emphasizes the need to have southern exposure (180- or 0-degree azimuth), clear roof space at 45-degree tilt and with a solar input of 5 kWh per m² per day. It is clear that distributed solar in New Jersey is cost effective at 90 degrees and/or 270 degrees azimuth even on a 0-degree flat roof. New Jersey's solar input is around 4 to 4.5 kWh per m² per day and still highly cost effective at that solar input. The PHIUS zero specifications also follows the DOE ZEH guidance on solar ready only and does not require on-site solar or on-storage installations. Likewise, the HERS rating system does not include on-site solar PV or on-site storage in their overall rating system. In fact, adding EV and EV charging would lower the overall HEWRS score.

The DOE ZEH, the Energy Star High Performance and ASHRAE 90.1 2019 Energy Modeling pathways and guidelines do not directly require, EV, EV charging or GEB. Adding EV and EV charging to a passive home, ZEH, an Energy Star, or ASHRAE Energy Performance Modeled building adds electric energy to the total load without a credit or offset for the avoided gasoline and oil usage. These guidelines do not address GEB for flexible load control and management. The revised NCP needs to address building energy usage in a more integrated manner that combines EE, RE, EV and GEB incentives in one place. The revised NCP program should include a credit for including EV and EV charging. The revised NCP should include GEB requirements.

The revised NCP is a good start that provides for the optional development of on-site solar, on-site storage EV, EV charging and GEB. To complete this program one additional pathway in the revised NCP should added. This additional pathway should be a fully clean energy integrated and holistic approach that requires and mandates the installation of all of the following technologies and not just energy ready:

1. High efficiency shell measures – above code;
2. Building electrification – above code;
3. On-site solar;
4. On-site storage;
5. EV;
6. EV charging; and
7. GEB.

This pathway does not have to be a large segment of the revised NCP. It could start with one or two development projects with a few dozen homes as a smart neighborhood pilot. Basically a

neighborhood microgrid approach. But it needs to start sooner than later. The BPU needs to move from an approach that manages clean energy incentives in separate siloed strategies to a more integrated whole building approach. An integrated approach at the neighborhood level. The most cost effective and efficient way to do that is to start with new construction.

This would include all the separate clean energy incentives managed collectively in one place or it could provide one combined incentive to cover the addition of EE, RE, EV and GEB in one design and application. This integrated approach would not increase or change the current solar, storage, EV or EV charging incentives but package them up in one application to the NC customer. Streamlining the integration of all clean energy incentives in a one stop shopping approach is just more efficient and effective for the NC customer.

It is clear in the NCP requirements that the NCP applicant cannot double dip in other NJ Clean Energy Programs incentives. They cannot get both the NJBPU NCP incentive and the public utility EE incentives. The same provision could be in place so that new construction developers, in this integrated clean energy pilot, could only get the combined NCP incentive for all the technologies noted above or the individual clean energy, not both.

It is important to start to have contractors and developers think about building energy in a more holistically and integrated approach. The more effective and efficient way for New Jersey and other states to actually achieve their 100% clean energy goals is to address clean energy in a holistic and integrated manner. The most cost-effective way to start that integrated energy approach is in the NCP.

1. Bundling Pathway

This pathway should require, at a minimum, one non-ECM. This pathway should include the requirement for the installation of a GEB technology that may include a smart thermostat, lighting controls, daylighting or other wireless sensors and controls and/or building automation systems.

2. Streamlined Pathway

This pathway should require, at a minimum, one non-ECM. This pathway should include the requirement for the installation of a GEB technology that may include a smart thermostat, lighting controls, daylighting or other wireless sensors and controls and/or building automation systems.

This pathway should actively manage all clean energy program incentive delivery for the NC customer. This would include all solar registration requirement, storage incentives and EV and EV charging incentives on a one stop clean energy shopping program approach.

3. High Performance Pathway

This pathway shall mandate the use of non-ECM. This pathway shall mandate the requirement for the installation of a GEB technology that may include a smart thermostat, lighting controls, daylighting or other wireless sensors and controls and/or building automation systems.

This pathway should actively manage all clean energy program incentive delivery for the NC customer. This would include all solar registration requirement, storage incentives and EV and EV charging incentives on a one stop clean energy shopping program approach.

4. DER

The NCP is a building decarbonization program that initiates the movement away from fossil fuel heating and thermal energy systems to electrifying the building sector powered by clean and renewable electricity. Managing the thermal loads in building, especially in campus settings, is an important component of the State's progress to a 100% clean energy future.

The DER program needs to develop and implement a thermal energy storage and phase change material incentive programs – especially for campus settings.

The DER CHP program needs to enhance the CHP and FC incentives for renewable fuels and lower the incentive for non-renewable fuels to assist in the progress away from fossil fuel thermal systems. The CHP and FC incentive should not be the same level for fossil fuel powered systems and renewably fueled systems. This differential incentive should also be developed for the feasibility study incentives. The fossil fuel feasibility study incentives should be lower and the renewable fuel feasibility study incentives should be higher. In addition, the DER program should provide an incentive to gasify organic waste to generate renewable natural gas to fuel the CHP or FC systems.

The BPU needs to begin to manage all DER under one program. This includes the current DER solar program and the DER storage program that is currently under development as part of the storage incentive program (SIP). It is a more cost effective and efficient approach to manage all DER in one program and to integrate that DER into a larger and holistic whole building approach.

5. NCP – Garden State Challenge Pilot.

The Garden State Challenge Pilot project award must specifically include high efficiency shell measures, building electrification technology and equipment, on-site DER solar, on-site DER storage, EV, EV charging and GEB in a holistic and integrated approach.

Thank you for the opportunity to provide comments on this very important clean energy issue. We appreciate all the time and effort that the BPU staff put into developing the new New Construction Program. The above comments are submitted to assist in advancing the State's progress towards the 2019 EMP goal of 100% clean energy by 2050. Please feel free to contact me on any further follow-up.

Very Truly Yours

Michael Winka

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