6/20/22 - Comments from the NJ 50x30 Building Electrification Team[[1]](#endnote-1):

The New Jersey Clean Energy Program Fiscal Year 2023 Proposed Comprehensive Resource Analysis, Budgets, and Programs,[[2]](#endnote-2) Dockets Q022020112 and Q022020113

Thank you for the opportunity to provide comments on the above FY23 proposal.

We note that the BPU is doing a good job in regard to advancing Electric Vehicles (EV) consistent with transportation strategies, as set forth in the 2019 EMP and the EV Act. The BPU’s FY23 budget allocated $67,000,000 to assist in reaching the EV goals. This is appropriate given that the transportation sector is the largest percentage of New Jersey’s greenhouse gas emissions.

However, while the commercial and residential building sector is the second largest percentage of New Jersey’s greenhouse gas emissions and yet there is no mention of “cold climate heat pumps[[3]](#endnote-3) [[4]](#endnote-4)” anywhere in the Division of Clean Energy’s FY23 Comprehensive Energy Efficiency and Renewable Energy Resource Analysis (CEERERA) and Funding Levels. This gap is despite the fact that the 2019 EMP strategy 4.2 calls for incentives for the transition to electric heat pumps, hot water heaters and other electric appliances. In addition, the 2019 Integrated Energy Plan cites EV and heat pumps as the key technologies to assist New Jersey in reaching its 100% clean energy goals. The recommendations below are what we see as a first step in implementing the 2019 EMP strategy 4.2.

1. **As part of the FY23 proposal, the BPU needs to set an initial goal of 100,000 new and retrofit residential building units electrified by 2025 and 800,000 by 2030 as steps toward the NJ EMP goal of 90% electrification by 2050. And provide the requisite annual budget support to meet these goals.[[5]](#endnote-5)**

Why? New Jersey currently has no mandate objectives nor laws nor roadmap that require any degree of Building Electrification and/or use of heat pumps by any given year. This gap exists despite an NJ executive order that calls for 50% reduction in greenhouse gas emissions by 2030, and a 2+ year old EMP whose models rely to some degree on building electrification. Per 2019 NJ statistics, the residential (heating) and commercial buildings generate 25.4 MMT (million metric tons) of greenhouse gas pollution per year – about 29% of New Jersey’s total. Without any Building Electrification mandated objectives, laws or roadmap, little to nothing regarding either Building Electrification or heat pump deployment is likely to occur, and thus the 50x30 goal is effectively already greatly jeopardized unless the BPU and NJ take immediate action to rectify this gap.

Consistent with the 2019 EMP strategy 4.1 - Start the transition for new construction to be net zero carbon, we request that as part of TRC’s Program Administration’s compliance filing and budget, the BPU should include specific goals for the installation of cold climate heat pumps. We also ask that only cold climate heat pumps be approved for all new residential construction incentives within the Energy Star, Zero Energy Ready Homes (ZERH), ZERH plus Renewable, Energy Star Multifamily High Rise (MFHR) and the Energy Star Multifamily New Construction (MFNC) programs.

Regarding Comfort Partners, when a failed or failing heating and/or cooling system is being replaced the replacement should be a cold climate heat pump system. Further if a fuel oil heating system is being replaced that cannot be served by the DCA Weatherization Assistance Program (WAP) such replacement should be a cold climate heat pump.

All future projects with the Division of Property Management and Construction (DPMC) should be designed to maximize the use of cold climate heat pumps. DPMC should work with BPU to redesign all projects not yet installed to use cold climate heat pumps.

We recommend that the BPU design and implement an incentive, as part of the Comfort Partners program, that provides the homeowner with an operational incentive to cover the incremental additional electrical heating needed during exceptionally cold weather.

1. **As part of the FY23 proposal, the BPU needs to establish an aggressive building electrification roadmap by the end of 2022. A roadmap is needed for any sensible clean energy investments.**[[6]](#endnote-6)

As part of the FY23 Division of Clean Energy (DCE) Program Description and Budget, the BPU should add a newly funded program for the development of a Building Electrification Roadmap. This could be a standalone budget item for the DCE within its EE budget or additional funding within the BPU Planning and Administration line item – specifically Program Evaluation/Analysis for Rutgers Center for Green Building to assist in the development of the Building Electrification roadmap.

We also recommend that the NJIT Learning Center budget be increased to assist in providing training for building designers, developers and HVAC contractors in cold climate heat pump technology and installation.

The BPU should increase the DCE FY 23 Planning and Administration budget for marketing, CEP website and Outreach and Education to ensure that all residents and businesses are aware of the cold climate heat pump programs and incentives

1. **As part of the FY23 proposal, the BPU needs to ensure that the 3300 affordable housing units that Gov Murphy has proposed including in the NJ budget are built to Zero Energy Building standards, including cold climate heat pumps for space heating and cooling and water heating, EV charging, and, to the extent possible, solar with battery storage.**

Gov Murphy’s proposed budget would subsidize the construction of 3300 new affordable housing units using $305 million of federal COVID rescue funds. Building to all-electric, Zero Energy Building specifications would eliminate the need for conversion later and avoid stranded assets, consistent with the 2019 EMP’s strategy 3.3.4, “Build state-funded projects and buildings to a high-performance standard.” This approach also leverages the EMP strategy 4.1.2, “Partner with private industry to establish electrified building demonstration projects” and furthers EMP strategy 6 as well.

The BPU should use its residential Energy Efficiency and Comfort Partners programs funding to pay for the small incremental cost of the Zero Energy Building standards.

Clean, electric appliances improve air quality and safety in our communities, lower energy bills, and use local clean energy resources, particularly important in low-income communities and communities of color. Fully electrifying these new affordable housing units can showcase NJ’s commitment to its climate mitigation goals and be a proof-of-concept that building electrification using the latest technology is possible while providing energy cost savings to residents.

1. **As part of the FY23 proposal, the BPU needs to establish far stronger incentives for NJ building electrification, especially for the installation of cold climate heat pumps and building weatherization for energy efficiency.[[7]](#endnote-7)**

In order to meet the “getting started” goal of 100,000 residential units electrified by 2025 (see 1. above), it is essential that the NJ BPU establish incentive budgets for new and retrofit residential units that guarantee at least 34,000 units electrified with cold climate heat pumps in 2023, i.e. a minimum of 17,000 new units and 17,000 retrofit units. Again, without aggressive action by the NJ BPU and state of NJ, the climate goals of 2030 and beyond are at great risk.

It is recommended to establish an additional incentive of at least $1000 for each newly constructed residential unit for cold climate heat pump installation via either upfront rebates and/or clean energy credits with 10-year payback. This incentive is intended in addition to existing proposed incentives outlined in each of the approved electric utility EE programs[[8]](#endnote-8).

It is recommended to make the needle move by establishing an incentive of $5000 for each retrofit of an existing owned residential unit for cold climate heat pump installation via either upfront rebates and/or clean energy credits with 10-year payback, with an equivalently appropriate amount for owner occupied or tenant occupied multi-family housing with collective HVAC. And add even more incentives if electric panel work is required. This incentive is intended in addition to existing proposed incentives outlined in each of the approved electric utility EE programs[[9]](#endnote-9).

Consistent with the 2019 EMP strategy 4.1 to start the transition for new construction to be net zero carbon, we request that as part of TRC’s Program Administration’s compliance filing and budget, the BPU should include an additional $1,000 incentive for the installation of cold climate heat pumps for the Energy Star, Zero Energy Ready Homes (ZERH), ZERH plus Renewable, Energy Star Multifamily High Rise (MFHR) and the Energy Star Multifamily New Construction (MFNC) programs, in addition to the current incentive schedule.[[10]](#endnote-10)

Ensure that owners receive their incentives directly, and not via third parties given the concern that third parties may merely raise prices to absorb these incentives themselves.

Incentives should also be established to deal with a comprehensive Building Electrification picture, including specific budget line incentives for each of cold climate heat pump HVAC installer training, retrofit and new construction electric appliances such as water heating heat pumps, induction cooktops, heat pump dryers, and electric panel upgrades, while also considering the electric panel’s ability to support Electric Vehicle growth and the added need for EV charging.

Massachusetts has even a far larger heat pump rebate[[11]](#endnote-11). Today’s New Jersey electrification incentives are clearly just a small fraction of the upfront cost of electrification including the cost of installation of “cold climate” heat pumps. New Jersey must do much better. The existing appliance incentives are small compared to the need, vary by utility, are administered by the utilities, and thus seem subject to the whims of the utilities without any obvious state control, consistency, or incentive to actually drive the necessary electrification.

1. **The BPU needs to eliminate all natural gas equipment incentives in the FY 23 CEERERA and Funding Level Budget. Sadly, these still exist in the face of rapid global warming.**

Reductions due to eliminating natural gas incentives for new and retrofit installations should be immediately diverted primarily to incentives for cold climate heat pumps, but also other Building Electrification incentives and priorities.

1. **The FY23 budget needs to ensure that no funding is diverted from the Clean Energy Program for other state purposes.**

This unfortunate diversion is unacceptable when the need is so great to immediately address climate change. These other state purposes must stand on their own, and not take from the essential NJ Clean Energy Program (NJCEP). Note that the $92 million for other state purposes listed in the FY23 budget[[12]](#endnote-12) is an amount approaching the ballpark to potentially address the proposed Building Electrification incentives in 3. above; about 20% of the proposed NJCEP.

We recommend that the re-allocated State Energy Initiative budget of $92,674,000 should be used for the above recommended increases primarily for cold climate heat pump incentives, but also for Building Electrification roadmap development, other Building Electrification incentives, marketing, website design, outreach/education, and green job development

1. **The BPU needs to set strong building electrification residential and commercial building codes for new construction, retrofitting and remodeling. At a minimum, adopt the ICC 2021, 2024 and 2027 building energy codes with no weakening amendments.[[13]](#endnote-13)**

The FY23 budget should include a specific budget amount to evaluate and incorporate residential and commercial Building Electrification for new construction and retrofits into these codes.

We recommend that the BPU increase the funding to Rutgers Center for Green Building to evaluate the costs and benefits, including non-energy benefits (NEB), of increasing the energy building codes to advance Building Electrification.

1. **As part of the FY23 proposal, BPU needs to develop and prototype a Green Jobs program to manufacture millions of cold climate heat pumps in New Jersey. Millions and millions of heat pumps are needed worldwide. Push New Jersey to be the world leader in cold climate heat pump deployment and manufacturing.**

New Jersey can partner with leading manufacturing companies to bring heat pump manufacturing Green Jobs to NJ and promote factories in economically depressed areas. New Jersey could reach out to the federal government and New Jersey congressional representatives and senators for assistance in establishing this program.

Massachusetts, New York, and Maine among others have aggressive heat pump deployment programs, and there has been recent discussion of tens of millions of heat pumps for Europe to solve its severe energy problems[[14]](#endnote-14). Texas has the largest United States HVAC factory[[15]](#endnote-15); why not New Jersey when the need cries out?

The FY23 CEERERA and Funding Level allocates $28,928,500 for Offshore Wind. We recognize that Offshore wind is a key technology in achieve 100% clean energy – defined as 100% carbon neutral electricity – by 2050. Likewise Building Electrification is a key and essential strategy to achieve the 2019 EMP goals. Thus, we recommend that the BPU increase the FY 23 Budget for the NJ Economic Development Authority (EDA) in order to attract HVAC manufacturing with focus on cold climate heat pumps. In competing with other States to acquire Green Jobs it is important to get to the market first. This has been key in offshore wind Green Jobs. The same should be made true with cold climate heat pump manufacturing Green Jobs. Increasing EDA’s funding in this regard could assist New Jersey in being first in this market.

And New Jersey could sponsor a joint discounted bulk cold climate heat pump purchase agreement on behalf of NJ state, county, local and school buildings, and perhaps other entities, which in turn would help scale up cold climate heat pump volume in New Jersey and potentially lower costs.

1. **Urgency is Entirely Missing at the NJ BPU & the State of NJ to Reduce Greenhouse Gas Emissions Immediately and Rapidly[[16]](#endnote-16) [[17]](#endnote-17)**

Also see prior comments regarding the missing Building Electrification objectives, roadmap and weak incentives; urgent since the 2019 EMP. Action is needed after decades of global warming warnings, not further delay, and the omission of significant Building Electrification objectives, roadmap and funding in prior and proposed FY23 budgets is just another stunning example of this lack of urgency and lack of concern on the part of NJ BPU & the State of NJ.

A further example of this tardiness is demonstrated by an extract from the BPU filings for this budget comment process.[[18]](#endnote-18) The BPU is just now “assessing cost-effectiveness of heat pump adoption in various scenarios, with an eye toward prioritizing electrification of oil- and propane-fueled buildings”. To our analysis oil and propane replacement with heat pumps has obviously already been cost effective for years, and is prioritized in the 2019 EMP. The BPU also indicates “….discussions are underway….”. When will these endless 2+ year old discussions stop and the BPU actually come up with real Building Electrification dates, incentives, and roadmaps? What needs to be done immediately is to address the huge polluting natural gas consumption – over 80% of residential space heating emissions - which is not even mentioned in the referenced paragraph, and instead replace this huge source of global warming carbon pollution with a strong and urgent Building Electrification program for retrofit and new residences (and where applicable in the commercial sector) built on electric air (or ground) source cold climate heat pumps as well as applicable electric appliances such as heat pump water heaters, heat pump dryers and electric induction cooktops.

Comments along the same lines as the input here are NOT new to the BPU; see reference further demonstrating the NJ BPU’s continued failure to significantly address this area.[[19]](#endnote-19)

These inputs on Dockets Q022020112 and Q022020113 are authorized 6/20/2022 by the “NJ 50x30 Building Electrification Team”

1. The “50 x 30 Building Electrification Team” is a volunteer group of NJ residents, HVAC business owners, and present and retired managers of NJ regulatory agencies, who are collectively members of various NJ environmental organizations. We would like to acknowledge team members and especially Robert Erickson, Chief Writer, and Mike Winka for their contributions to this document. [↑](#endnote-ref-1)
2. NJ BPU webinar 6-9-22 & NJ BPU 6-3-22 email: The New Jersey Clean Energy Program Fiscal Year 2023 Proposed Comprehensive Resource Analysis, Budgets, and Programs [↑](#endnote-ref-2)
3. <https://rmi.org/its-time-to-incentivize-residential-heat-pumps/> [↑](#endnote-ref-3)
4. <https://www.energy.gov/eere/buildings/articles/cold-climate-air-source-heat-pumps-innovative-technology-stay-warm-winter> [↑](#endnote-ref-4)
5. [5/2/2022 Letter to NJ Governor Murphy](https://climate.smiller.org/REF/2022-5-2MurphyBuildingElecLetterMerge.pdf) from NJ 50 x 30 (50% GHG reduction by 2030) Building Electrification Team [↑](#endnote-ref-5)
6. [5/2/2022 Letter to NJ Governor Murphy](https://climate.smiller.org/REF/2022-5-2MurphyBuildingElecLetterMerge.pdf) from NJ 50 x 30 (50% GHG reduction by 2030) Building Electrification Team [↑](#endnote-ref-6)
7. [5/2/2022 Letter to NJ Governor Murphy](https://climate.smiller.org/REF/2022-5-2MurphyBuildingElecLetterMerge.pdf) from NJ 50 x 30 (50% GHG reduction by 2030) Building Electrification Team [↑](#endnote-ref-7)
8. Table 6, Appendix A, page 72 [https://njcleanenergy.com/files/file/1/FY23%20Program%20Administrator%20(TRC)%20Filing%20RB%20(MI).pdf](https://njcleanenergy.com/files/file/1/FY23%20Program%20Administrator%20%28TRC%29%20Filing%20RB%20%28MI%29.pdf) [↑](#endnote-ref-8)
9. Table 6, Appendix A, page 72 [https://njcleanenergy.com/files/file/1/FY23%20Program%20Administrator%20(TRC)%20Filing%20RB%20(MI).pdf](https://njcleanenergy.com/files/file/1/FY23%20Program%20Administrator%20%28TRC%29%20Filing%20RB%20%28MI%29.pdf) [↑](#endnote-ref-9)
10. Table 6, Appendix A, page 72 [https://njcleanenergy.com/files/file/1/FY23%20Program%20Administrator%20(TRC)%20Filing%20RB%20(MI).pdf](https://njcleanenergy.com/files/file/1/FY23%20Program%20Administrator%20%28TRC%29%20Filing%20RB%20%28MI%29.pdf) [↑](#endnote-ref-10)
11. Massachusetts has up to a $10,000 whole home heat pump rebate as of this writing. <https://www.masssave.com/en/saving/residential-rebates/heat-pump> [↑](#endnote-ref-11)
12. Table, Page 7, [https://njcleanenergy.com/files/file/1/Comprehensive%20Resource%20Analysis%20(CRA)%20FY23%20clean.pdf](https://njcleanenergy.com/files/file/1/Comprehensive%20Resource%20Analysis%20%28CRA%29%20FY23%20clean.pdf) [↑](#endnote-ref-12)
13. Letter to NJ Governor Murphy from NJ 50 x 30 (50% GHG reduction by 2030) Building Electrification Team, 5/2/22 [↑](#endnote-ref-13)
14. <https://www.bloomberg.com/news/articles/2022-05-06/heat-pumps-are-the-ultimate-climate-techno-fix-but-not-a-silver-bullet#xj4y7vzkg> [↑](#endnote-ref-14)
15. <https://www.goodmanmfg.com/about/plant-locations> [↑](#endnote-ref-15)
16. Delaware River Keeper verbal presentation at NJ BPU rate payer study meeting 3-25-22 [↑](#endnote-ref-16)
17. 12:38 PM verbal presentation at NJ BPU rate payer study meeting 3-25-22 [↑](#endnote-ref-17)
18. Extract from Division of Clean Energy compliance filing May-June 2022 associated with The New Jersey Clean Energy Program Fiscal Year 2023 Proposed Comprehensive Resource Analysis, Budgets, and Programs 6-9-22 webinar:
“EMP Goal 4.2 focuses on starting the transition to electrify existing oil- and propane-fueled buildings. The BPU is assessing cost-effectiveness of heat pump adoption in various scenarios, with an eye toward prioritizing electrification of oil- and propane-fueled buildings. […...] In addition, discussions are underway among the BPU, Rate Counsel, and the investor-owned utility companies about expansion of rebates and incentives to support this transition that could be offered as part of utility EE programs for existing buildings. ….” [↑](#endnote-ref-18)
19. <https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1242659> [↑](#endnote-ref-19)