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Via Email: [emp.comments@bpu.nj.gov](mailto:emp.comments@bpu.nj.gov)

### Re: NJ 2019 Energy Master Plan – Reducing Energy Consumption

Thank you for this opportunity to provide stakeholder input on the NJ 2019 Energy Master Plan.

MaGrann Associates is a for-profit energy engineering and consulting small-business firm established in 1982 and based in Mt. Laurel, New Jersey. Throughout the life of New Jersey's Clean Energy Program, as well as preceding and current independent programs operated by New Jersey's electric and gas utilities, MaGrann Associates has provided energy rating and modeling, engineering design, verification, certification, commissioning, monitoring, training and program implementation services for New Jersey's residential builders, developers, contractors, design professionals, building owners and managers.

In general, we applaud the reinvigoration of the EMP and the industry enthusiasm that has been generated by this process, and we look forward to supporting the initiatives that we anticipate will be implemented as a result.

The following comments relate specifically to the "Reducing Energy Consumption" component of the EMP, and respond to those discussion points raised in advance of the September 14<sup>th</sup> stakeholder meeting on which we feel we have constructive input to offer:

#### General

1. What energy efficiency, peak demand reduction, and demand response programs and systems will assist in helping keep energy affordable for all customer classes, especially as technology advances in areas such as electric vehicles or heating and cooling, which will potentially increase electric energy usage?

*Electrification in combination with efficiency has the potential to produce the greatest benefit in terms of both carbon and cost reduction and should be encouraged through programs aimed at supporting low load buildings coupled with conventional or mini-split heat-pumps, VRF/VRV systems in multifamily buildings, etc. These very high efficiency electric technologies that can perform optimally in New Jersey's climate can be used in both new and existing construction applications. In combination with new construction protocols such as Passive House, overall building loads can be reduced to the extent that on-site renewable generation (PV) can realistically and cost effectively cover total annual consumption and produce a true Net-Zero operating outcome. In existing construction such as older multifamily buildings, these technologies may provide a viable alternative to highly inefficient existing systems such as electric baseboard heating. Both scenarios are particularly relevant to affordable/lower income housing.*



2. With the coming requirement that all commercial buildings over 25,000 sq. ft. be benchmarked through EPA's Portfolio Manager, what programs should be created to help with benchmarking and reduction strategies?

*Consider mirroring New York's LL87 requirement for an energy audit every 10 years, assigning an easily comprehensible and comparable grade as the performance indicator. However, we believe it is important to ensure that a minimum standard is set for the conduct and content of the required audit (so that the information is accurate and consistent), and that incentives are available to move owners to actually implement recommended actions, rather than just checking off the box upon completion of the audit. Audits without action save no energy, and in the absence of "sufficiently high" energy prices or a price on carbon, few improvements will be made without incentives. Programs should offer a meaningful carrot and not just the stick of punitive penalties (such as those associated with NY LL87).*

3. What are the key non-energy benefits associated with energy efficiency? How can their value best be considered in cost-benefit analyses?

*The health and safety benefits of energy improvements in both new and existing construction are well documented. In addition, we believe it is important to emphasize (and, where possible, quantify) the positive impacts on increased housing affordability and lower operating cost. Both of these benefits reduce the disproportionate percentage of income spent by lower income households on housing, and increase the proportion available for food, clothing, healthcare and discretionary income. This in turn creates the effect of stabilizing communities when homes and buildings are improved rather than abandoned or demolished, and owners or tenants who can stay in their homes for the long term and become rooted in a neighborhood.*

4. What should the role of ratepayer funded programs, whether state or utility run, be in achieving reduction strategies?

*Ratepayer funded programs are most likely to produce the desired outcomes when they are predictable, consistent and flexible, with streamlined participation processes and effective, market based delivery. Short term commitments to programs and incentives, and complex administrative processes create barriers to entry that artificially limit participation instead of encourage it – frequently eating up incentives that would otherwise go towards truly offsetting the cost of upgrades.*

5. What type of educational outreach is needed to advance energy efficiency throughout New Jersey?

*Marketing in support of programs and incentives (awareness), and funding for market based service providers to offset time and resources for customer education. It is not enough to simply install new technologies and walk away, when realization of savings depends on the comfort and understanding level of consumers, facility personnel or contractors who then interact with those systems on a daily basis. This is true for everything from smart thermostats in homes, to large scale, internet connected systems in multifamily or commercial buildings.*

### **Technology**

6. What advances in technology should be considered as part of a strategy to reduce energy consumption? What technologies could complement and advance existing energy efficiency efforts?

7. What are the intermediate timeframes and pathways to these new or enhanced technologies and energy efficiency and demand response systems?

*For both #6 and #7, we encourage state sponsored programs to support market based development and deployment of pilots that can demonstrate the application and effectiveness of new technologies. However, it is critical that such pilots be judged on the lessons learned and measured impacts, and not on achievement of a specific energy savings goal. Funding should not be dependent on the quantified outcome, but rather the qualitative value of the information garnered (what are the most effective applications, the least effective, market potential, customer experience, etc.).*

8. How do we best utilize data analytics for energy efficiency?

*In our opinion, the most critical data need at this time is easier access to unit level energy consumption information ("bill histories") such as can be obtained through initiatives such as "green button". Such information should be obtainable in spreadsheet or API format and transferable upon appropriate authorization.*

9. What is the role of block chain, IoT, big data, 5G, and other specific technologies in energy efficiency?

*Access to real-time data through sensors, monitoring, building/energy management systems, connected control devices (such as smart thermostats), and metered energy consumption (see #8), will enable the energy efficiency industry to transition from predicted (modeled) performance to actual/measured performance, and to provide an increasing range of services around responding to performance outcomes and fluctuations in real time.*

### **State Policy**

10. How can the state play a strong role in reducing its energy consumption?

*Effective enforcement of codes and standards (see below); Education and awareness.*

11. Which strategies should be state-led, and which ones should be advanced by the private sector? What other players are important leaders in energy efficiency?

*Market based implementation is critical to effective market transformation and long term sustained savings; utilities need to be seen as sponsors and partners in the development and deployment of programs as they have the existing relationship with the customer and are a credible source of information; and the state can exercise its unique position as arbiters of fair practice, as well as ability to establish statewide initiatives and leverage state agencies toward common goals.*

12. Should the state require energy efficiency in particular projects receiving state incentives?

*Yes – in combination with incentives. For example, find ways to mirror the energy performance elements of affordable housing funding in market rate construction. This approach facilitates tangible and long lasting market transformation by incorporating and progressively rewarding performance criteria. Additionally, we would like to stress the importance of requiring compliance with recognized protocols, standards and certifications, not just "designed to" or "equivalent to". Projects that do not incorporate the compliance and verification steps intrinsic to certification and labeling cannot be relied upon to deliver the performance and savings expected by the owners, occupants or program sponsor.*

13. Should the state play a role in encouraging pilots of different “next generation” buildings? How could the state foster the implementation of net zero or passive buildings projects? How could that impact and restructure redevelopment efforts?

*Yes, particularly within the private sector. See comments under #7 with respect to support of pilots.*

14. What Treasury design standards or procurement policies should be updated to reflect and encourage energy efficiency in state building designs or protocols?

*Reduce administrative burden; ensure expedited turn-around times on incentives; rely on market based verification; allow master metering/sub-metering in combination with high performance and net-zero strategies.*

### **Codes and Standards**

17. What type of zoning changes or incentives should be considered related to green infrastructure?

*Include water efficiency in whole-building program strategies and incentives.*

18. What are some examples of existing or potential advanced building energy standards or metrics? (Examples include: net zero energy, Passive House, Living Building Challenge, etc.) How could these be implemented in New Jersey to accelerate greenhouse gas emissions reduction in new and existing residential and commercial buildings?

*See comments under #12, noting in particular the need to ensure compliance and not just “equivalence”; examples successfully demonstrated elsewhere include tax abatements linked to high performance certification, etc.;*

19. Are there barriers to implementing new energy efficiency codes for building inspectors? How can potential code updates be made less burdensome for inspectors in order to increase compliance and uniformity?

*Allow greater use of third party verification by appropriately credentialed building energy professionals; increase education opportunities for code inspectors to help them stay abreast of high performance technologies and practices, new code compliance paths, etc.; add funding and resources for code compliance.*

### **Economic Growth and Workforce Development**

22. What new or expanded manufacturing could be developed related to energy efficiency?

*Offsite construction of buildings, modular elements and building components.*

### **Environmental Justice**

26. How can the state be responsive in helping keep clean energy affordable in communities that are disproportionately impacted by the effects of environmental degradation and climate change? How can the state play an active role in improving the condition of older building stock and encouraging energy conservation measures in communities that are disproportionately impacted by the effects of environmental degradation and climate change?

27. What efforts are most successful towards making clean energy and energy efficiency measures affordable and accessible to all?

28. How can the state play a role in ensuring that disproportionately impacted communities receive opportunities and benefits connected to the clean energy economy?

*With respect to all three questions in this category, ensure programs or the program portfolio are adaptable to include all building types, sizes, etc. For example, benchmarking currently includes only certain larger buildings and ignores large swaths of the market; include more income levels on the cusp of income qualification ("lower income" vs. "low income").*

Thank you again for this opportunity to provide input. Our team at MaGrann would be happy to provide any additional information or clarification that would be helpful in evaluation of these comments.

Sincerely,



Ben Adams  
Vice President, Program Development