



**COMMENTS BY THE BUILDING PERFORMANCE ASSOCIATION  
BEFORE THE NEW JERSEY BOARD OF PUBLIC UTILITIES  
SEPTEMBER 16, 2019**

**IN THE MATTER OF DRAFT 2019 ENERGY MASTER PLAN  
Public Stakeholder Comments**

As leaders in the residential energy efficiency industry, the Building Performance Association<sup>1</sup> (formerly the Home Performance Coalition) respectfully responds to the June 10, 2019 request by the New Jersey Board of Public Utilities (NJBPU) to provide feedback on the Draft Energy Master Plan and EMP Committee questions. Where a specific question is addressed, we note the number and question. In addition, we appreciate your consideration of our additional comments on the EMP and we place those under the relevant strategies. This response links to several studies and resources to assist the BPU staff.

**Strategy 2: Accelerate Deployment of Renewable Energy and Distributed Energy Resources**

***11) What policy, legislative, or regulatory mechanisms can New Jersey develop to ensure that it can most cost-effectively pursue a 100% carbon neutral power sector?***

Energy efficiency is fundamental to cost-effectively pursuing a 100% carbon neutral power sector. Investing first in energy efficiency reduces demand, lowering the total amount of generation capacity needed and thereby easing the size and speed of investment in renewable energy and zero-emission generation. We are encouraged by the Draft EMP's recognition that "reducing wasted energy is the most cost-effective and cleanest of energy system options" (Section IV, p. 24). Any goals or requirements for renewables should include energy efficiency and opportunities to reduce energy waste.

To ensure that New Jersey can cost-effectively pursue this goal, it is also important that the state review its cost-effectiveness testing framework to ensure the balanced assessment of energy resource cost-effectiveness. In previous comments,<sup>2</sup> we requested that NJBPU review the fundamental principles of the 2017 National Standard Practice Manual (NSPM), [available on the National Efficiency Screening Project's website](#). We believe the NSPM framework and its

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<sup>1</sup> The Building Performance Association is a 501(c)6 industry association dedicated to advancing the home and building performance industry by ultimately delivering improved energy efficiency, health, safety, and environmental performance of buildings. The Association was created to combine the expertise and resources of the Home Performance Coalition, Efficiency First, and Home Energy magazine.

<sup>2</sup> Comments submitted on behalf of the Home Performance Coalition (now the Building Performance Association) in the matter of the New Jersey 2019 Energy Master Plan, October 12, 2018.

step-by-step approach would provide NJBPU an opportunity to determine whether its current cost-effectiveness testing reflects New Jersey’s revised energy goals and policies, including those laid out in the Energy Master Plan. The Building Performance Association recommends that the NJBPU establish a stakeholder process to utilize the NSPM and develop a “New Jersey” test that is based on sound economic principles and best meets the needs and values of the state.

The NSPM builds and expands upon the decades old California Standard Practice Manual and provides current experience and best practices. The NSPM presents accounting procedures for applicable hard-to-monetize costs and benefits, with guidance on a wide range of fundamental aspects of cost-effectiveness analyses and the adequate consideration of all relevant costs and benefits for both the utility system and the non-utility system. The NSPM sets forth broad principles for accomplishing these goals:

National Standard Practice Manual Principles

<b>Efficiency as a Resource</b>	EE is one of many resources that can be deployed to meet customers’ needs, and therefore should be compared with other energy resources (both supply-side and demand-side) in a consistent and comprehensive manner.
<b>Policy Goals</b>	A jurisdiction’s primary cost-effectiveness test should account for its energy and other applicable policy goals and objectives. These goals and objectives may be articulated in legislation, commission orders, regulations, advisory board decisions, guidelines, etc., and are often dynamic and evolving.
<b>Hard-to-Quantify Impacts</b>	Cost-effectiveness practices should account for all relevant, substantive impacts (as identified based on policy goals,) even those that are difficult to quantify and monetize. Using best-available information, proxies, alternative thresholds, or qualitative considerations to approximate hard-to-monetize impacts is preferable to assuming those costs and benefits do not exist or have no value.
<b>Symmetry</b>	Cost-effectiveness practices should be symmetrical, where both costs and benefits are included for each relevant type of impact.
<b>Forward-Looking Analysis</b>	Analysis of the impacts of resource investments should be forward- looking, capturing the difference between costs and benefits that would occur over the life of the subject resources as compared to the costs and benefits that would occur absent the resource investments.
<b>Transparency</b>	Cost-effectiveness practices should be completely transparent, and should fully document all relevant inputs,

	assumptions, methodologies, and results.
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The Building Performance Association and other members of the National Efficiency Screening Project would be pleased to brief the NJBPU or other state Agencies on how a “New Jersey” test could be developed to best meet the needs of the policymakers and ratepayers in New Jersey.

**Strategy 3: Maximize Energy Efficiency and Conservation and Reduce Peak Demand**

The Building Performance Association strongly supports this strategy and applauds the Draft EMP’s recognition that energy efficiency “contributes to greenhouse gas emissions reductions and improved water quality, as well as strengthens grid resilience and improves health and comfort” (p. 59). BPA recommends that the commission review the upcoming NASEO paper that outlines a number of challenges and opportunities to the expansion of Grid-Interactive Efficient Buildings while highlighting the important use cases. The report, to be released shortly after these comments are due, “Residential Grid-Interactive Efficient Building Technology and Policy: Harnessing the Power of Homes for a Clean, Affordable, Resilient Grid of the Future” provides recommendations for both policy and research initiatives<sup>3</sup>.

**Include Smart Technology**

We recommend that the 2019 NJ EMP include smart grid-interactive technologies as part of Strategy 3: Maximize Energy Efficiency and Conservation and Reduce Peak Demand. Smart energy management technologies provide new control and insights to manage and reduce peak demand and make buildings use energy more efficiently at the most cost-efficient times.

As detailed in the Building Performance Association’s 2018 report [Redefining Home Performance in the 21st Century: How the Smart Home Could Revolutionize the Industry and Transform the Home-to-Grid Connection](#) the use of smart technologies in homes is an important way to make the residential sector, and the homeowners and ratepayers who comprise it, a part of the energy grid solution. The first of ten recommendations in HPC’s report calls on states like New Jersey to look at their home performance retrofits programs to recognize the value of adding smart technology. Historically, New Jersey’s home performance programs have focused on improving the thermal quality of the building shell and increasing the efficiency of HVAC and other appliances. Smart home technologies add a third efficiency strategy: better control. In addition, smart home technologies provide extremely valuable byproducts: data and granular level monitoring capabilities. This data and monitoring capability provide an unprecedented ability to conduct near real-time quality control for home improvement installations. Time is money: for the utility anticipating energy savings from home

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<sup>3</sup> BPU staff can contact the lead author of the report at [kara@anndyl.com](mailto:kara@anndyl.com) for an advance copy.

predictions, for the contractor who has to fill out endless forms for evaluations, for the programs that pay evaluators to tell them if their programs are performing to expectations. The NJ BPU should consider utilizing smart tools (meters and home energy management systems) to do near real-time evaluations, address poor performing or over-predicting contractors, and reward contractors with work that exceeds expectations. By reducing evaluation and paperwork costs, programs can reach more customers and have more opportunity to meet energy savings targets. The smart home interface should also be leveraged to connect customers with home performance contractors. For example, local qualified contractor recommendations could be displayed on the customer's home energy management (HEM) app when a problem is detected with equipment in the home, or a voice assistant could contact the contractor directly on behalf of the homeowner.

We urge the commission staff to review the report and its ten recommendations and incorporate smart technologies to strengthen Strategy 3 of the 2019 NJ EMP.

***14) How can the state ensure equitable access to and benefit from energy efficiency programs for all residents?***

The Building Performance Association's 2017 report, [Weatherization and Home Performance: Recommendations for Mutual Success and Collaboration](#), identifies opportunities and barriers in creating a more unified set of cost-effective residential energy efficiency programs for all income levels. As New Jersey aims to maximize energy efficiency, it is important to review the state's low-income weatherization programs and how these can be expanded to help low and moderate-income families reduce their energy consumption, save on their utility bills, and have healthier homes.

We are supportive of ***Goal 3.1.3: Adopt equitable clean energy financing mechanisms that enable greater penetration of energy efficiency opportunities for all customers*** and appreciate the recognition that "programs that target moderate-income customers are important to closing gaps in program affordability" (p. 62). Creating programs for all income levels is important to ensuring equitable access and benefit from energy efficiency. Enacting policies that provide incentives and access to low-cost financing will also help make energy efficiency measures accessible to more households by addressing upfront costs. We discuss low-cost financing further in response to question #28 below.

**Strategy 5: Modernize the Grid and Utility Infrastructure**

The Building Performance Association is encouraged by ***Goal 5.3.1: Strategic and coordinated rollout of Advanced Metering Infrastructure***. In particular, New Jersey should ensure smart meter penetration across the residential sector. As we mentioned in our previous comments to

support the development of the Energy Master Plan,<sup>4</sup> smart meter penetration would allow for data access and data monitoring that could improve the EM&V of residential efficiency programs while opening up policies like time of use rates and demand response programs to allow consumers to engage in reducing their utility bills. AMI interval meter data can also assist in developing load shapes to support energy efficiency and demand response programs. Programs that utilize smart meter data can emphasize savings when power is most expensive or polluting and, thus, energy savings are most valuable. This would also support better integration of renewable energy, energy storage, and grid-interactive technologies. The Building Performance Association urges NJBPU to issue recommendations for utilities to accelerate AMI installation across the residential sector.

We support ***Goal 5.3.2: Develop standards to ensure customers have control of and accessibility to free and standardized energy management data***. Ensuring customers have access to their utility data and can grant third-party access in a free and easy manner is important. Contractors and programs need consumers' energy consumption data for modeling (e.g., calibrating models to actual energy consumption) and EM&V. Monthly billing data is sufficient for many of these purposes, but interval data (e.g., hourly or 15 minute) generated by AMI, as noted above, can help utilities assess the time and locational value of the energy being saved.

We also urge NJBPU to support data standardization in the residential energy efficiency industry by requiring the use of the national open data standard, [Home Performance Extensible Markup Language](#) (HPXML), for all residential energy efficiency programs. Adopting HPXML can reduce transactional costs associated with transferring project data from third-party energy modeling or data collection tools to a program management database. It can also significantly reduce administrative costs by incorporating automated data checks into its program software to validate for program eligibility, energy savings, quality assurance protocols, and more. For example, one year after implementing the standard, the [Arizona Public Service](#) reduced quality assurance administrative labor by 50 percent. Participating Arizona home performance contractors also reduced administrative labor by 31 percent per project, leading to a 50 percent increase in contractor satisfaction with the program.

***22) What best practices should New Jersey consider and which pitfalls should the state avoid regarding data ownership and privacy as it pertains to Advanced Metering Infrastructure?***

The Building Performance Association's 2018 report [Redefining Home Performance in the 21st Century](#) highlights the need to improve data access, data transfer policies, and increase data sharing. In terms of data ownership, the report recommends that customers should be able to securely and easily access—and authorize third-party providers to access—their energy use data and any other data the technology in their homes creates. The Building Performance Association urges NJBPU to enhance the ease and speed of access to digital utility data through

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<sup>4</sup> Comments submitted in the matter of the New Jersey 2019 Energy Master Plan, October 12, 2018.

policies that enable third-party access to consumer data while addressing privacy and security (e.g., establishing “Green Button Connect My Data” as a statewide standard). Additionally, the Department of Energy’s State Energy Efficiency Action Network 2017 report [A Policymaker’s Guide to Scaling Home Energy Upgrades](#) also discusses policy designs for secure data access and standardization and ensuring the protection of consumer data privacy.

Mission:data’s 2017 report [Energy Data: Unlocking Innovation with Smart Policy](#), is also a useful resource that includes guidance for state policymakers on addressing data access, including issues of ownership and privacy. Michael Murray, the lead author of the report, offers these specific recommendations:

In addition to a Green Button Connect mandate state-wide, the BPU must carefully define what data is to be made available to customers and customer-authorized third parties. Experience from other jurisdictions demonstrates that a narrow focus on energy usage data only (i.e., kilowatt-hours of electricity or therms of gas) is inadequate. A range of cost-effective energy efficiency and demand response services also require access to (1) customer account and billing information, including service addresses, in order to attribute energy usage to specific locations, particularly for multi-site commercial customers and (2) any information necessary for participation in, or determining eligibility to participate in, energy efficiency or demand response programs, such as the customer-specific "peak load contribution" value required by PJM Interconnection.<sup>5</sup>

The issue of "data ownership" should be considered carefully. BPA strongly encourages the NJBPU to establish rules for how a customer can exercise their right to access their own utility data information and to instantly and electronically share all of their customer information with any third party of their choosing in a manner that protects their privacy and the security of their data. The rules must also allow utilities access to the data for billing and management purposes. The NJBPU may wish to look to other state utility commissions that have provided this combination of flexibility and ownership. As noted in Mission:data’s comments to the NJ 2019 Energy Master Plan:

In Texas, the legislature in 2005 passed HB 2129 to modify §39.107(b) of the Public Utility Regulatory Act to state, "all meter data including all data generated, provided, or otherwise made available by advanced meters and meter information networks shall belong to a customer, including data used to calculate charges for service, historical load data, and any other proprietary customer information." While Texas stopped short of declaring customers owners of their data, Texas stated that energy data belongs to customers, and the PUC of Texas subsequently developed both formal rules and business processes for customers to grant their consent to utilities to have customer data transferred electronically to any third party (see, e.g., stipulations approved in Project No. 47472 regarding the operation of the Smart Meter Texas web portal).

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<sup>5</sup> Michael Murray, Mission:data Coalition ([www.missiondata.io](http://www.missiondata.io))

Similarly, California, which has had robust access to AMI data since approximately 2016, refers to "the customer's data" with the possessive form of "customer" but does not declare customers as formal owners. Rather, through a series of rulemakings and decisions, the California PUC has outlined how customers should be able to electronically direct utilities to share their data with third parties (see, e.g., decision D.13-09-025 and Resolution E-4868).<sup>6</sup>

### **Strategy 7: Expand the Clean Energy Innovation Economy**

The Building Performance Association applauds the inclusion of ***Goal 7.2 Establish workforce training programs to ensure New Jersey has the local expertise necessary to support a growing clean energy economy and provide support to those in stagnating industries to refine their skills in line with new needs.*** Workforce development and training programs are key to ensuring there are skilled workers qualified to fill open positions in a growing energy efficiency jobs sector and to support the continued growth of the clean energy economy in New Jersey.

We also support ***Goal 7.6: Establish a Clean Buildings Hub to develop workforce training, awareness and education for builders, architects, contractors, engineers, real estate agents, and code enforcers in the most efficient electrification, construction and retrofit building techniques.*** The Building Performance Association partners with local leaders in residential energy efficiency to offer training and workshops, and we urge New Jersey to work with industry and stakeholders in these efforts to increase job training, education, and awareness.

***26) What industry sectors or job occupations are expected to see growth? Which industry sectors and job occupations are expected to need job training support to ensure an appropriate workforce is available to meet the needs of a growing economy?***

The U.S. Department of Energy [2017 United States Energy and Employment Report \(USEER\)](#) found that U.S. energy efficiency employers projected the highest job growth rate (9%) in 2017-2018 in all energy sectors surveyed. The September 2018 [Energy Efficiency Jobs in America](#) report<sup>7</sup> also adds to a growing body of research that puts energy efficiency at the top of the list of job creators in the clean energy sector. According to the report, energy efficiency, as a market sector, employed **2.25 million Americans**, in whole or in part, in the design, installation, and manufacture of Energy Efficiency products and services, and is the fastest growing jobs sector in energy, accounting for half of the entire energy industry's job growth (133,000) in 2017.

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<sup>6</sup> Ibid

<sup>7</sup> Please note that the 2019 Energy Efficiency Jobs in America report is scheduled for release in September 2019, shortly after these comments are due.

According to the [Energy Efficiency Jobs in America](#) report, some 33,815 New Jersey residents were employed in energy efficiency in 2017 – a significant number of jobs in a state with approximately 9 million residents. However, New Jersey is currently underperforming in energy efficiency job creation and ranks 47<sup>th</sup> in the nation among states in per capita employment in this critical clean job creation category (See Exhibit A). State policy can help develop more robust investment levels, entrepreneurial risk taking and small business development in the energy efficiency business sector in an individual state. There is significant potential for growth in the energy efficiency sector as New Jersey implements its goals of Maximizing Energy Efficiency (Strategy 3) and Reducing Energy Consumption and Emissions from the Buildings Sector (Strategy 4) and adopts pro-growth policies and programs.

Importantly, energy efficiency jobs in residential buildings – contractors and installers – are inherently local and cannot be outsourced or exported to foreign countries. New Jersey should target job training support for the residential energy efficiency sector to prepare more workers for these quality local jobs. The industry is also comprised mainly of small businesses. According to the [Energy Efficiency Jobs in America](#) report, 75% of energy efficiency businesses in New Jersey have fewer than 20 employees. Supporting job creation and workforce training for energy efficiency will help these small local businesses grow and bring economic benefits to New Jersey.

As New Jersey finalizes its 2019 Energy Master Plan – two observations should remain top of mind: 1) the market sector with the most energy jobs in the states is energy efficiency; and 2) the policies developed and implemented by states such as New Jersey on energy efficiency can have a profound impact on job growth. Many New Jersey based home performance contractors and small businesses are eager to invest in and expand the state’s energy efficiency industry.

***28) What are best practices, financial tools, and financial infrastructure that New Jersey should consider in supporting the clean energy economy, attracting private investment, and enabling clean energy opportunities to become more affordable for all?***

New Jersey should consider policies and programs that support low-cost funding and financing mechanisms for energy efficiency measures in the residential sector. [A Policymaker’s Guide to Scaling Home Energy Upgrades](#) discusses how policymakers can use incentives and financing to help homeowners manage the upfront costs of residential energy efficiency upgrades— including through on-bill financing and Residential Property Assessed Clean Energy (R-PACE) programs.

Thank you for this opportunity to submit comments. Please do not hesitate to contact me with questions.

Sincerely,

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Vice President of Government Affairs, Policy, and Programs



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## Exhibit A

### US Energy Efficiency (EE) Jobs Per Capita

State	Gross EE Jobs	Population	EE Jobs Per Capita	Per Capita Rank	Gross Jobs Rank
D.C.	12,359	693,972	0.0178	1	38
VT	10,939	623,657	0.0175	2	40
DE	12,372	961,939	0.0129	3	37
WY	7,382	579,315	0.0127	4	45
MA	84,556	6,859,819	0.0123	5	6
RI	12,588	1,059,639	0.0119	6	36
MD	68,981	6,052,177	0.0114	7	11
WI	62,299	5,795,483	0.0107	8	14
OR	41,958	4,142,776	0.0101	9	19
UT	31,077	3,101,833	0.0100	10	25
CT	34,743	3,588,184	0.0097	11	22
VA	76,621	8,470,020	0.0090	12	10
WA	62,519	7,405,743	0.0084	13	13
NH	11,336	1,342,795	0.0084	14	39
MI	84,052	9,962,311	0.0084	15	7
SD	7,313	869,666	0.0084	16	46
NC	84,020	10,273,419	0.0082	17	8
IN	53,963	6,666,818	0.0081	18	16
MN	44,859	5,576,606	0.0080	19	18
MT	8,384	1,050,493	0.0080	20	42
CA	310,433	39,536,653	0.0079	21	1
TN	51,629	6,715,984	0.0077	22	17
OH	79,653	11,658,609	0.0068	23	9
IL	86,916	12,802,023	0.0068	24	5
ND	5,128	755,393	0.0068	25	49
NE	13,024	1,920,076	0.0068	26	35
MO	40,166	6,113,532	0.0066	27	21
IO	19,694	3,145,711	0.0063	28	30
ME	8,312	1,335,907	0.0062	29	43
AL	29,949	4,874,747	0.0061	30	26
AK	4,497	739,795	0.0061	31	51

AZ	41,886	7,016,270	0.0060	32	20
NY	117,339	19,849,399	0.0059	33	3
SC	29,286	5,024,369	0.0058	34	27
CO	32,036	5,607,154	0.0057	35	24
KS	16,628	2,913,123	0.0057	36	31
GA	59,065	10,429,379	0.0057	37	15
KY	24,579	4,454,189	0.0055	38	28
TX	154,565	28,304,596	0.0055	39	2
FL	112,620	20,984,400	0.0054	40	4
PA	65,288	12,805,537	0.0051	41	12
MS	15,055	2,984,100	0.0050	42	32
AR	14,782	3,004,279	0.0049	43	33
ID	8,227	1,716,943	0.0048	44	44
LA	20,839	4,684,333	0.0044	45	29
HI	5,496	1,427,538	0.0038	46	48
<b>NJ</b>	<b>33,815</b>	<b>9,005,644</b>	<b>0.0038</b>	<b>47</b>	<b>23</b>
WV	6,523	1,815,857	0.0036	48	47
NV	10,316	2,998,039	0.0034	49	41
OK	13,403	3,930,864	0.0034	50	34
NM	5,053	2,088,070	0.0024	51	50

Sources: Energy Efficiency Jobs in America published September 2018. Population numbers are US Census estimations for 2017