

PREPARED STATEMENT BY FRANKLIN NEUBAUER
NEW JERSEY ENERGY MASTER PLAN HEARING, SEPTEMBER 14, 2018

I am Franklin Neubauer of Core Metrics. I am a consultant in energy efficiency planning, energy modeling and forecasting. Thank you to the EMP Committee for this opportunity.

As the lowest cost and cleanest source of energy, energy efficiency offers tremendous benefits to the power system and the state. There are essential differences between energy efficiency and energy production, which have held back previous administrations from saving more energy. There is no meter to measure how much energy we are saving, at least not at the state level. That poses a challenge. Despite that, we will still need to estimate savings for new portfolios of utility programs, for new approaches to building design, for financing programs, and policies that put a price on GHG emissions. Economic theory tells us we should expand carbon pricing beyond just the power sector to other sectors of the economy.

So far, New Jersey has only skimmed the surface of what is possible with energy efficiency. Now the state must pursue energy efficiency more purposefully, achieving deep savings to displace fossil fuels and their emissions. Fortunately, West Coast states have been showing how to do that since the 1980s.

Soon, New Jersey will conduct a research study to estimate potential energy efficiency savings statewide. In addition to that, there are opportunities to conserve energy that do not make anything more efficient, but simply cut down on waste. New Jersey should track progress across all fronts. The way to reach the goals is to develop forecasts of New Jersey's energy consumption and update them periodically, so that when we revisit this plan 3-4 years from now, we can make direct comparisons and there are milestones to mark accomplishments along the way.

Improvised ways of measuring energy efficiency progress have hurt New Jersey before. In the 2011 Energy Master Plan, the Christie Administration changed how it measured progress in the power sector

so it could eliminate an energy savings goal. The recession also had a big impact on the size of the cuts. In 2011, the EMP cut plans to save energy by 12,700 GWH, roughly 2½ times bigger than its cut to the RPS target. Many environmentalists did not realize that energy efficiency programs were hit harder, and they focused on renewable energy instead. The public's attention was diverted by what they could see (that is renewables), and away from what they could not see (energy savings).

Another way that energy efficiency is different from energy production is how analysts add up savings. New Jersey will have a wide range of programs in the future. There are bound to be businesses and households who are affected by several programs at the same time. In those conditions, analysts should be on the lookout for double counting of energy savings. To avoid double counting, the EMP team may benefit from specific end-use research. Occasionally, savings estimates need to be scaled back to avoid double counting.

The new Energy Master Plan will need energy demand forecasts that represent Business as Usual (business as it was in 2017). In order to track GHG emissions, forecasts are needed for petroleum products and natural gas, the generation mix in the electric power sector, and leakage from imports of electric power. Those forecasts would enable modelers to establish a base case. Scenarios showing how New Jersey can reach the Administration's goals should include energy savings targets or milestones on our way to 2050. The point of milestones is to assure progress in energy efficiency and GHG reductions, and to assure the accountability of state government.

I suggest using a simple, transparent method like trend-extrapolation in the Business as Usual forecast in order to help create a reliable EMP process. If you think extrapolation is just too simple, and you want to consider forecasting that you think is more accurate, I would be glad to discuss alternatives afterwards. I would be glad to explain my reasoning. The best examples of reliable energy planning processes that I know are in the Pacific Northwest, where I used to work, and RGGI. Those are regional energy planning efforts and they put a premium on transparency, which contributed to their long-term success. Next June's plan will be updated 10 times before 2050, so reliability of the planning process is important.

The subject of best practices came up last week, so I want to address how to interpret the term "best practices". In 2009, Northeast Energy Efficiency Partnerships (known as NEEP) presented the Corzine Administration with an energy efficiency strategy that was filled with best practices; I was a big fan at

the time. That does not mean the strategy was a good fit for New Jersey. Organizations like NEEP and ACEEE select best practices mainly on engineering and administrative criteria, which they can judge. They cannot judge the political, economic and institutional circumstances in the state. Those factors need to be judged by elected officials and their staffs. So when I hear that something is “best practices in energy efficiency” I think great, but judgment calls still have to be made about whether those practices are likely to work in New Jersey.

I know that the caliber of economic analysis provided to decision-makers on energy policy can be improved. I am speaking about analysis for the EMP and what may come later. For renewables and other supply-side planning, power system models are very helpful, but for energy efficiency and demand-side planning, most big models are of limited value. There are exceptions, and I was fortunate to work on one such project for the Bonneville Power Administration using its Conservation Policy Analysis Model. Smaller models and tools are often useful for demand-side economic analysis. Analyzing economic impacts to program participants and to distribution utilities requires a broad perspective, one that includes the average cost of energy savings, utility rates, customer bills, and conservation supply curves.

Societal benefits of energy efficiency are far reaching. Priority must go towards reducing environmental externalities. Some benefits can be quantified reliably, and measurement should be rigorous, never improvised. Cost-benefit analysis of clean energy is a highly specialized area in economics, and the discipline imposed by economic analysis can ensure that non-energy benefits are measured objectively. Objectivity and a disciplined approach will pay off because public funding is involved, so public support is essential.

Now I want to highlight five policy options that harness market forces, which the EMP should consider. These will provide opportunities to save money and lighten any upfront costs of the plan.

#1) Targeted financing. When financing programs are targeted at specific barriers to energy efficiency, like PACE, they can be very effective.

#2) Demand response. As BPU staff has noted, these programs are voluntary and provide effective price signals to consumers who want to save energy and money.

#3) Time varying rates. Opportunities to shift loads to off-peak hours can hold down costs and emissions.

#4) Benchmark buildings. Benchmarking is intended to disclose key information about a building's energy consumption, so that markets can be more efficient at valuing individual properties. The new clean energy law is a partial step in that direction.

#5) Put a price on carbon. Participating in RGGI will facilitate cooperation with like-minded states. RGGI states are exploring policies for deep decarbonization using the grid.

Another group of states formed the Transportation and Climate Initiative, which has explored pricing carbon in the transportation sector

Even broader approaches to carbon pricing have been proposed by state legislatures. At one time, Massachusetts, Rhode Island and Connecticut were all looking at similar carbon tax legislation.

Opportunities to cooperate on carbon tax plans should be explored.

Before I conclude, I want to offer a perspective on past BPU hearings where energy efficiency was on the agenda. The hearings I remember from several years back seemed somewhat contentious and unnecessarily so. They framed energy efficiency as just another expense without tangible benefits to the power system. The cost advantages of energy efficiency are not fully recognized by the BPU. I believe demand-side resources have been handicapped relative to new generation and other BPU priorities. There may be administrative remedies to this imbalance.

Originally, I intended to offer much more input on the subject of forecasting. However, there are time limits. I decided public comments are not the best forum for that, at least not at this time. I am receptive to presenting that material I prepared on slides in another setting.