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New Jersey Board of Public Utilities
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Via Electronic Delivery

Comments from New Jersey Resources Corporation on the 2019 Draft Energy Master Plan

New Jersey Resources Corporation (NJR) is a diversified energy provider headquartered in Wall Township, that serves over 550,000 natural gas customers through its main subsidiary, New Jersey Natural Gas. NJR maintains a strong, long-term commitment to sustainable business practices, and respectfully submits these written comments to further inform and raise awareness of key issues impacting our customers, employees and business units as part of the New Jersey Board of Public Utilities' 2019 Draft Energy Master Plan (EMP).

NJR and its representatives provided public testimony at two of the 2019 EMP public hearings to address the following topics within the scope of the EMP:

- Energy Infrastructure Resiliency and Service Reliability (Thursday, September 12)
- Reducing Energy Consumption and Energy Efficiency Policies (Thursday, September 12)
- Building Sector Decarbonization Solutions, including Cross-Technology Carbon Reduction Innovations in the Natural Gas System and Low-Carbon Fuels (Thursday, September 5)
- Clean and Renewable Power and the State's Policies Affecting the New Jersey Solar Industry (Thursday, September 12)

The public hearing process provided NJR with an opportunity to reiterate our support for Governor Murphy's clean energy agenda, and to share recommendations and issues that NJR believes are critical to meeting shared carbon reduction goals in a realistic and achievable way, that also balance service reliability and affordability for utility customers.

NJR is submitting this summary, along with full testimony from the public hearing sessions where company representatives participated.

NJR Testimony Overview – Shared Goals for a Clean Energy Future

New Jersey Resources fully supports Governor Murphy's clean energy goals to help combat climate change by significantly reducing carbon emissions by 2050.

NJR has taken meaningful steps to further clean energy efforts and environmental sustainability in New Jersey for many years, and remains committed to these efforts in the future. NJR is:

- A lead solar provider, with projects in all of New Jersey's 21 counties representing more than $800 million invested in both residential and commercial projects.
- A leader in energy efficiency (EE) programs, with one in ten of its natural gas customers participating in EE programs to reduce their energy use and protect the environment.
- The first natural gas utility in New Jersey to fully replace cast iron pipes to reduce methane leaks.
- Committed to sustainable operations, having reduced its own company emissions by more than 20 percent with changes to pipelines, buildings and fleet vehicles.

With this strong commitment to a clean energy future as a backdrop, NJR's testimony reflects its support for public policies and a New Jersey Energy Master Plan that: embraces innovation in carbon reduction solutions; balances costs and service reliability for customers; leverages best practices to achieve energy efficiency goals; and, prioritizes stability and predictability in the existing solar and emerging distributed energy markets.

As an energy provider, NJR must keep its focus on our customers during this transition to a clean energy future by understanding and meeting their energy needs in a cost-effective way.

Customers want and expect reliable, affordable and clean energy. They want their heat to reliably turn on in the winter. They want their energy bills to remain low. And, they want their appliances to be efficient to help save them money and to help protect the environment.

Meeting these customer expectations is NJR's top priority. During this transition, it must be a shared priority for all of New Jersey and reflected in policies that are not only ambitious, but grounded in these principles.

The full testimony of New Jersey Resources representatives delivered on September 5, 2019 and September 12, 2019 follows.

Natural Gas Infrastructure Resiliency and Service Reliability; Reducing Energy Consumption and Energy Efficiency Policies

New Jersey Natural Gas (NJNG) is the main subsidiary of New Jersey Resources (NJR), operating nearly 7,500 miles of natural gas transportation and distribution infrastructure to serve more than 550,000 customers. Most importantly, this utility service includes our obligation to provide these customers reliable, affordable natural gas service each day, especially for their heating needs on the most frigid days.

As a lifeline service provider, we are mandated to prudently plan for and deploy the necessary resources to ensure these millions of residents are reliably served. To do that, NJNG annually completes a Design Day study, which projects how much natural gas supply we will need to ensure 100% reliability to our customers under the most severe weather conditions that we have seen.

Given the fact that 75 percent of New Jersey's households rely on natural gas for home heating, ensuring reliable supply has implications for the more than 6 million people across the state who rely on natural gas to heat their home.

The primary issue for NJNG and other natural gas utilities in New Jersey remains that we are unable to acquire additional firm supply from the five existing interstate pipelines serving the state due to those pipelines being fully subscribed. Planned infrastructure projects that would help provide critical access to additional supply to fulfill our service mandate are currently stalled, and our natural gas market is constrained.

NJNG commissioned independent analyses of pipeline capacity and operations and those studies confirm that, to ensure 100% reliability to customers, additional interstate pipeline capacity is necessary.

The obligation to serve our customers is a core value of NJNG and every one of its employees. It is not only our job to keep New Jersey families warm in winter, it is our privilege to do so.

NJNG fully supports the carbon reduction goals of the state and is committed to working diligently with the BPU to do our part to ensure the least cost path for consumers. There are real innovations such as Renewable Natural Gas, hydrogen and carbon capture that can play a meaningful part in this journey. NJNG firmly believes that New Jersey should explore all options that can help achieve these goals, while helping to keep our state competitive and a great place to live and work.

Importantly, we note that our commitment to meeting our customers' expectations for reliable home heat is not the only thing we do. We are incredibly proud of the work we have done – in partnership with regulators – to reduce emissions and keep energy costs affordable by helping our customers save energy and using it wisely.

Since our energy efficiency programs launched in 2009, we have helped more than 56,000 customers significantly reduce their energy bills

This work has been done collaboratively with New Jersey's Clean Energy Program. Today, our programs help all customers including low-to-moderate income customers – working families whose savings can make a real difference in their daily lives.

We know that energy efficiency needs to be significantly expanded to make the path to a clean energy future more affordable. NJNG is ready to meet our obligation as required under the Clean Energy Act.

However, we also believe firmly that if utilities are going to be held accountable for meeting the Clean Energy Act goals, utilities themselves should have significant control over the development and administration of programs in their respective service territories.

New Jersey's utilities have a long track record of working together and have proven they can create consistent, complementary energy efficiency programs statewide. As a further proof point, it must be noted that leading states in energy efficiency rely upon the utilities to run the energy efficiency programs with oversight from their state regulatory agency.

We believe the State Office of Clean Energy should play the critical role of independently setting strategy, approving programs and reviewing utility performance with the utilities delivering programs and reporting progress.

We thank you for the opportunity to provide our input today.

Building Sector Decarbonization Solutions, including Cross-Technology Carbon Reduction Innovations in the Natural Gas System and Low-Carbon Fuels

New Jersey Resources (NJR) fully supports Governor Murphy's clean energy goals to help combat climate change by significantly reducing carbon emissions by 2050.

We are a diversified energy provider with a strong, long-term commitment to sustainable business practices.

NJR has taken meaningful steps to further clean energy efforts in New Jersey for many years, and is committed to continuing to build on these efforts:

- We are a lead solar provider with projects in all of New Jersey's 21 counties, with more than 800 million dollars invested in both residential and commercial projects.
- One in ten of our natural gas customers participates in energy efficiency programs, reducing their energy use and protecting the environment.
- We are the first natural gas utility in New Jersey to fully replace cast iron pipes to reduce methane leaks.
- In the past decade, we have reduced our own company emissions by more than 20 percent with changes to our pipelines, buildings and fleet vehicles.

New Jersey Resources believes environmental sustainability is an imperative. Just as importantly, our company has been a leader since the early days of New Jersey's solar market. We are confident we can once again lead and produce positive results in the clean energy economy if we work together.

The State's success in achieving the ambitious clean energy goals outlined in the draft Energy Master Plan will involve embracing innovation, and acknowledging that we will need multiple solutions and technologies to fully achieve an affordable, reliable transition to a low carbon future by 2050.

The reality is that clean energy technology is changing at a rapid pace. The need for a multi-solution approach that embraces these advances is clearly recognized in the current draft Energy Master Plan.

Specifically, the draft plan notes the following for the transportation sector:

> "Clean vehicle technology, such as electric, hydrogen, or renewable natural gas, all have the potential to further improve net greenhouse gas and air pollutant impacts.
>
> As part of an overarching clean fuel strategy, the state should explore introducing the idea of fuel flexibility to achieve an affordable and scalable pathway to decarbonization."

NJR supports this multi-solution strategy, understanding that this approach is the most effective path for all sectors of the economy that must lower emissions – including the state's building sector.

Conversely, in the draft Energy Master Plan, there is just a single solution for the building sector – aggressive electrification – despite the fact that the rapidly evolving decarbonization solutions for the building sector are much broader than just electrification.

A low carbon fuel standard – generally focused on transportation fuels – and dedicated efforts to decarbonize pipeline gas are examples of solutions that should be considered for New Jersey.

These types of complementary measures are common in carbon-constrained markets including California, Europe and British Columbia.

There is an untapped opportunity to leverage renewable natural gas from waste streams to reduce and reuse harmful methane emissions.

Based on an independent study commissioned with ICF, Renewable Natural Gas has the potential to account for 20 percent of total residential and commercial gas distribution system volumes in New Jersey.

A new study presented by SoCalGas in California shows that replacing less than 20 percent of the traditional gas supply with Renewable Natural Gas, captured from sources such as wastewater treatment plants and landfills, can achieve emissions reductions equivalent to converting 100 percent of buildings to electric-only by 2030.

And, using a mix of Renewable Natural Gas coming from in state and out-of-state is 3 times more cost-effective in reducing emissions than an all-electrification pathway.

Similarly, the development of Power-to-Gas technology to create green hydrogen also has great potential. It is gaining momentum like solar did a decade ago.

As the amount of electricity generated each year by wind and solar increases, the intermittency of these sources will pose major seasonal imbalances between load and generation.

Power-to-Gas technologies can leverage any overproduction of electricity to separate hydrogen from water in a process called electrolysis. That hydrogen, created by green, renewable energy sources, can be used directly in cars and buildings.

It can also be blended in the natural gas distribution system to reduce the carbon content of natural gas or be mixed with carbon dioxide to create carbon-neutral synthetic fuels.

The Rocky Mountain Institute, which is helping to lead the Board of Public Utilities clean energy pathways efforts, made the following observations:

> "Hydrogen is the new kid on the block of low-carbon alternatives, with applications in mobility, industrial processing and heavy transport.
>
> It can also be used to provide electricity and heat; and can be blended with natural gas to help decarbonize existing natural gas grids."

RMI went on to state: "This is not winner-take-all. The energy transition will be a blend of alternative fuels and electrification."

We couldn't agree more.

Likewise, in Bloomberg's 2019 Study "Hydrogen: The Economics of Production from Renewables; Costs to Plummet," the following statement is made:

> "If the world is serious about decarbonization, it will need hydrogen.
>
> Electricity provided just 19 percent of final energy demand in 2017, and although this could increase... in a deeply decarbonizing world, there are many sectors of the economy that electrons cannot serve.
>
> Hydrogen offers a solution to lower emissions in hard-to-decarbonize sectors – such as: industry, heavy transportation and buildings – at moderate additional costs."

Depending on the approach taken with New Jersey's climate change policy, the existing natural gas infrastructure can play a dramatically different role, with dramatically lower cost implications, in the State's energy future. Under a low-carbon fuel scenario, the natural gas transmission and distribution systems would remain valuable assets, with efforts made to decarbonize – or lower the carbon intensity of the fuel moved through the existing infrastructure – to meet the State's goals.

Maintaining the long-term value of these assets, which the State's residents and businesses have already invested billions of dollars in, will ultimately help drive down clean energy costs our energy customers pay.

Estimates provided in the ICF study referenced earlier clearly show that a low carbon fuel strategy combined with targeted electrification can result in significant savings for home heating customers in the long run.

The draft Energy Master Plan recommends an interagency task force be developed, "To work in close coordination with relevant stakeholders to establish a roadmap through 2050 that transitions existing building stock away from fossil fuels."

Given the opportunities to utilize Renewable Natural Gas and green hydrogen, we strongly recommend that the task force broaden the clean energy solutions it reviews for the building sector beyond just electrification.

As stated in the Energy Master Plan, "Given how much of New Jersey is already developed, significantly electrifying the building sector will take a few decades."

NJR supports public policies that embrace a combination of carbon reduction solutions that will both reduce measurable greenhouse gas emissions and help ensure that these goals balance cost and reliability.

New Jersey Resources welcomes the opportunity to discuss the role alternative fuels can play in meeting our 2050 goals.

Supporting as many solutions as possible as new technologies advance will afford all of us with a lower cost path to a clean energy future.

New Jersey Resources Clean Energy Ventures (NJRCEV) Testimony Addressing Clean and Renewable Power, and the State's Policies Affecting the New Jersey Solar Industry

New Jersey Resources Clean Energy Ventures (NJRCEV) has invested more than $800 million in 275 MW of solar projects in New Jersey, comprising about 10 percent of solar installed in the state.

- NJRCEV has projects installed in all of New Jersey's 21 counties – these include 75 MW from 8,000 residential customers and 200 MW of commercial installed capacity.
- These investments provide enough clean energy to power 26,600 homes per year, saving nearly 270,000 metric tons of CO2 emissions.

NJRCEV's investment in New Jersey's solar market is consistent with our strategic commitment to provide affordable, reliable and clean energy solutions to customers, and to support the State's 2050 carbon reduction goals.

The Energy Master Plan (EMP) acknowledges the considerable success the State has had in attracting over $12 billion in private capital to drive growth in the sixth largest solar market in United States. In fact, nearly 3 GW has been installed at over 100,000 facilities and has created more than 6,000 in-state jobs.

As the solar market has grown, costs have substantially declined. A 10kW residential system that cost $80,000 ten years ago costs less than $30,000 today.

That same project, which needed an SREC incentive of $500 for 15 years in 2010, now only needs slightly more than a $100 SREC. In addition, rates and typical bills for New Jersey electric customers have been held stable.

The EMP also rightfully recognizes that there is much work to be done if solar is to grow beyond its current share of the generation mix – which today is 5 percent.

We applaud the EMP's recognition of the value of in-state resources like solar to grow sustainable local jobs, develop the economy, benefit the environment, improve grid resiliency and reach low to moderate income and environmental justice communities. The plan's expressed preference for in-state resources, as opposed to out of state energy facilities, will help New Jersey reach our clean energy goals.

We agree with the EMP that the benefits from these local distributed resources – including environmental, avoided capital costs, and peak energy savings need to be more explicitly recognized in cost-benefit analysis, rate design, and in the compliance with cost caps contained in the Solar Act. Each of these aspects must be recognized and accounted for in order to properly determine the true cost-benefit of in-state solar.

We agree with the EMP's call for more streamlined interconnection and permitting processes, and the need to address the constraints to market growth given the increasing problem of closed or constrained distribution circuits.

The EMP's commitment to resolving these issues must be a high priority for follow-up actions by the BPU in order to achieve its goals.

Among the goals set out by the EMP for New Jersey's solar future, perhaps nothing is more important in our view than the solar market transition currently underway which will result in the closure of the current SREC market, and the transition to a long-term successor incentive program.

NJRCEV has actively engaged in the BPU's solar market transition stakeholder process, and today will focus on what we see in the EMP which is most relevant to the transition proceeding.

NJRCEV, along with many solar industry advocates, has expressed our concerns that the BPU's method of closing the SREC market creates significant risks of long-term SREC oversupply, with the potential for material, adverse financial impacts to investors as well as public and private owners of solar installations. This is contrary to the statutory mandate of the Clean Energy Act for an orderly transition.

Greater regulatory risk makes it more difficult to raise capital at reasonable costs, works against the goal of reducing incentive costs to ratepayers, and undermines the confidence critical to attracting the billions in capital required between now and 2050 to meet the state's clean energy goals.

The EMP's aggressive goal to reduce annual energy consumption by 2 percent annually and, by 21 percent in total between 2020 and 2030, further compound these oversupply risks.

While NJRCEV supports the energy efficiency goals, the pursuit of this policy by the state will significantly reduce retail sales, which are the basis on which the demand for SREC's determined. Year-to-year fluctuations in retail sales are risks that are reasonable for investors to assume. In contrast, aggressively reducing retail sales as a deliberate and beneficial policy undertaken by the state needs to be reconciled with the implications of that policy in markets like solar in which retail sales is a foundation of the compliance market structure.

In raising these issues in the stakeholder process, we appreciate the recognition and stated commitment of the BPU President, Commissioners and staff to maintaining a stable and balanced SREC market, and their respective acknowledgment of the risks posed to market investment, now and in the future.

We believe it is essential that the BPU follow up with ongoing engagement with stakeholders to develop an approach to operationalize the State's commitment to a stable and balanced SREC market. We reference the closure of two SREC markets in Massachusetts as a model worthy of evaluation and consideration by New Jersey policymakers.

The goals of protecting investor value and compliance with the cost caps are not incompatible. We believe there are numerous strategies for achieving these caps consistent with the goals of the EMP, and that with further stakeholder engagement, policymakers and stakeholders committed to clean energy growth can find solutions.

As it relates to the successor incentive program, we believe this need to be coupled with the EMP's endorsement of a long-term solar goal. Codifying such a goal to 2030 would be consistent with similar goals for offshore wind, battery storage, and energy efficiency. Connecting this overall goal explicitly to the successor solar incentive program will provide business continuity, and installation-based milestones enabling market participants and program administrators to plan and prepare for program changes.

NJRCEV believes that a goal of 400MW a year is reasonable, achievable and consistent with the pace of annual solar installations over the past several years. It also aligns with the 50 percent renewables by 2030 goal and the preference for in-state resources – and, we are pleased to see that the Integrated Energy Planning process is assuming a 400MW annual solar goal in its 2030 modeling.

NJRCEV appreciates the opportunity to comment on the EMP.