Comments on New Jersey's Draft Energy Master Plan

Submitted on behalf of the New Jersey Environmental Justice Alliance, the Center for the Urban Environment of the John S. Watson Institute for Public Policy of Thomas Edison State College, and the Environmental Research Foundation

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Introduction

The New Jersey Environmental Justice Alliance (NJEJA), the Center for the Urban Environment (CUE) and the Environmental Research Foundation welcome the opportunity to comment on New Jersey's Draft Energy Master Plan. The environmental justice (EJ) community in New Jersey has worked extensively on fine particulate matter (PM) and climate change policy and recognizes that energy policy is critically related to these issues.

The Draft Energy Master Plan states that its ultimate goal "is to ensure that New Jersey has a reliable supply of energy, at a reasonable price, produced and used in a manner that meets the state's environmental needs."[1] It appears that "environmental needs" refers primarily to reducing emissions of greenhouse gases (GHG) since later in that paragraph environmental threats linked to GHG emissions[2] are discussed and later in the plan it is asserted that all future energy generation policies will be evaluated to make sure they are consistent with the state's 2020 and 2050 GHG emissions reductions targets.[3]

We urge the state to reframe the ultimate purpose of the Energy Master plan to include several additional goals and constraints. The additional goals should be: 1) all energy generation policies should be evaluated to ensure they that yield significant reductions in emissions of fine PM[4] and its gaseous precursors, nitrogen oxides and sulfur

[1] Pg. 15 of Draft Energy Master Plan.
[2] The paragraph goes on to say: "When growing energy demand is met by an increase in the use of fossil fuels, the resulting greenhouse gas emissions threaten to exacerbate the higher temperatures, higher sea levels, and more frequent and more severe floods and droughts that we have experienced in New Jersey." *at* pg. 15.
[3] Pg. 84 of draft Energy Master Plan.
[4] Fine particulate matter is all airborne particles less than or equal to 2.5 μm in diameter. Godish, T. 1997. Air Quality, Third Edition, Lewis Publishers, New York, *at* pg. 60.

dioxide[5], and that they are consistent with other efforts by the state to reduce emissions of these pollutants; and 2) energy conservation techniques and renewable energy sources should be used extensively in urban areas as a mechanism to economically revitalize inner city neighborhoods by providing employment, and other career and economic opportunities, to local residents. Additional constraints should be: 1) no new nuclear power plants should be constructed within the state; and 2) no new coal power plants should be constructed within the state and existing coal power plants should be assigned firm retirement dates.

Each of these additional goals and constraints are discussed in more detail below and a process is also suggested that could produce a new Energy Master Plan that would be consistent with these newly recommended goals and constraints.

Additional Goals And Constraints

Additional Goal: All energy generation policies should be evaluated to ensure that they yield significant reductions in emissions of fine PM and its gaseous precursors, and that they are consistent with other efforts by the state to reduce emissions of these pollutants.

The reason behind the environmental justice community's desire to use energy generation policy to help reduce fine PM concentrations is the unfortunate reality that this deadly pollutant is wreaking havoc with the health of New Jersey residents, particularly in urban areas. Particulate matter air pollution may cause as many as 50,000 premature deaths in the United States annually[6] and 500 – 1,000 premature deaths in New Jersey

[5] Nitrogen oxides and sulfur dioxide can undergo chemical reactions after they are emitted into the atmosphere and form PM. They can also condense onto existing particles. See Godish, *supra*, note 4, pp. 59-65 and 38.

[6] See Madsen and Mottola. 2003. The Public Impact Of Air Pollution In New Jersey, NJPIRG Law and Policy Center, December 2003, 38 pp., *at* pg. 11.

each year.[7] It has also been linked to an array of illnesses such as cardiovascular disease,[8] cardiopulmonary disease[9] and lung cancer.[10] Fine PM is an EJ issue because not only are concentrations generally highest in urban areas,[11] but also within urban areas concentrations may peak in neighborhoods with the highest percentages of low income and Of Color residents.[12] These facts inexorably drive one to the conclusion that fine PM is causing death and illness among people Of Color and low-income residents at disproportionate rates. These facts also cause EJ advocates to believe that reducing concentrations of fine PM in urban areas of New Jersey is just as, if not more, important than reducing concentrations of carbon dioxide.

However, it is not an either/or proposition and energy generation policy should be constructed so as to reduce concentrations of both greenhouse gases and fine PM. Energy generation policy in New Jersey should be just as concerned with the state's "fine PM footprint" as it is with the state's carbon footprint. And just as the state is utilizing

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[7] New Jersey Department of Environmental Protection. 2003. The New Jersey Comparative Risk Study, pg. 202 of appendix 4. The entire report is available at http://www.state.nj.us/dep/dsr/njcrp/.

[8] Pope, C., Burnett, R.T., Thurston, G.D., Thun., M.J., Calle, E.E., Krewski, D. and J. Godleski. 2004. Cardiovascular Mortality and Long-Term Exposure to Particulate Air Pollution, Epidemiological Evidence of General Pathophysiological Pathways of Disease, *Circulation* 109:71-77.

9 Pope, C., Burnett, R.T., Thun., M.J., Calle, E.E., Krewski, D., Kazuhiko, I. and G.D. Thurston. 2002. Lung Cancer, Cardiopulmonary Mortality, and Long Term Exposure to Fine Particulate Air Pollution, *JAMA* 287:1132-1141; Pope, C.A., Thun, M.J., Namboodiri, M.M., Dockery, D.W., Evans, J.S, Speizer, F.E. and C.W. Heath, Jr. 1995. Particulate Air Pollution as a Predictor of Mortality in a Prospective Study of U.S. Adults, *Am. J. Resp. Crit. Care Med* 151:669-774; Dockery, D.W., Pope, C.A., Xu, Xiping, Spengler, J.D., Ware, J.H., Fay, M.E., Ferris,B.G. and F.E. Speizer.1993. An Association Between Air Pollution And Mortality In Six U.S. Cities, *NE J Med* 329(24):1753-1759.

[10] Pope et al. (2202), *supra*, note 9 and Dockery et al., *supra*, note 9.

[11] EPA. 2005. Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information, Office of Air Quality Planning and Standards, December, 2005, see Figure 2-16, pg. 2-42, which presents the composition and concentration of urban and rural fine PM from seven different areas of the country. In each area the urban concentrations were higher. The data came from Schmidt, M., Mintz, D., Rao, V. and L. McCluney. 2005. U.S. EPA Memorandum to File. Subject: Draft Analyses of 2001-2003 PM Data for the PM NAAQS Review. January 31, 2005.

[12] See EPA pg. 5-41, *supra*, note 11 *citing* Schmidt et al., *supra*, note 11.

multiple mechanisms to reduce carbon emissions[13] it should similarly utilize multiple mechanisms to reduce fine PM emissions. At a minimum these mechanisms should include policies contained in the Fine PM State Implementation Plan, climate change strategies embodied in the global Warming Response Act and the Regional Greenhouse Gas Initiative, and energy generation policy delineated in the Energy Master Plan. It should also be noted that New Jersey had to create a State Implementation Plan for fine PM because 13 of the state's 21 counties were found by the U.S. Environmental Protection Agency to be in violation of the federal annual fine PM standard.[14]

A good first step toward utilizing energy generation policy to reduce emissions of fine PM and its precursors would be to calculate the reductions that would be achieved by the policies proposed in the current Draft Energy Master Plan. This type of calculation is performed in several instances in the current Draft Plan for carbon dioxide emissions reductions[15] but no similar calculations are included for fine PM and its precursors. If fine PM emissions reductions calculations were available they would be one factor that could be used to prioritize implementation and utilization of specific energy generation policies.

The Draft Energy Master Plan also "recommends a series of polices and measures to reduce greenhouse gas emissions associated with electricity and heating fuels"[16] and ultimately the Draft plan should also recommend a series of energy generation policies and measures that will reduce emissions of fine PM and its precursors.

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[13] Pp. 20 and 21 of the Draft Energy Master Plan contain short discussions of Executive Order No. 54, the Global Warming Response Act and the Regional Greenhouse Gas Initiative; all of which are intended to reduce GHG emissions.

[14] The counties are Bergen, Burlington, Camden, Essex, Gloucester, Hudson, Mercer, Middlesex, Monmouth, Morris, Passaic, Somerset and Union. See the EPA website.

[15] For examples *see* pp. 77, 78 and 84 of the Draft Energy Master Plan.

[16] Pg. 21 of the Draft Energy Master Plan.

Additional Goal: Energy conservation techniques and renewable energy sources should be used extensively in urban areas as a mechanism to economically revitalize inner-city neighborhoods by providing employment, and other career and economic opportunities, to local residents.

The Draft Energy Master Plan sets a goal of providing 20% of New Jersey's energy needs through renewable energy sources and reducing demand for energy in the state by 20% by utilizing energy conservation techniques, by the year 2020.[17] The Plan recognizes the critical role that energy conservation and renewable energy can play in future energy generation and reducing GHG emissions but does not say enough about their ability to also reduce emissions of fine PM and its precursors and help economically revitalize urban areas. Because they can significantly benefit several critical areas of our society such as public health, the environment, and the economy, we urge that the energy conservation and renewable energy goals be reexamined with the intent to establish, and reach, more aggressive targets. There are other knowledgeable advocates who believe more aggressive goals are viable[18] and in a section below we suggest a process for establishing these new goals.

We also urge the state to view energy conservation and renewable energy as a potential vehicle for economic revitalization of New Jersey's urban areas and to develop a plan that will make our cities centers for their innovation and utilization. By utilizing energy conservation and renewable energy extensively in urban areas, jobs, careers and entrepreneurial opportunities could be created for local residents. Creating these opportunities would probably necessitate linking our primary and secondary educational institutions to these efforts so urban high school students will be prepared to enter jobs in

[17] See pp. 22 and 23 of Draft Energy Master Plan.
[18] See letter submitted by Environment New Jersey et al. concerning the Draft Energy Master Plan that recommends more aggressive energy conservation and renewable energy goals.

these fields immediately after graduation, participate in union apprenticeships or job training programs that specialize in these areas of employment, or attend college to prepare for careers in these industries. Universities and colleges in our urban areas should be prepared to educate local students in the fields of energy conservation and renewable energy and also conduct innovative research that is connected to, and will benefit, local communities.

Although the Draft Plan does not present a coherent program that would ensure that energy conservation and renewable energy sources are used extensively in our cities there are several ideas contained in the document that could be worth developing. For example, community-based solar programs[19] might prove to be a workable method of switching inner-city neighborhoods to solar power and of providing jobs, career and entrepreneurial opportunities in the process. Or perhaps the Edison Innovation Fund[20] can provide incentives for renewable energy firms to locate in urban areas and provide jobs to local residents. The Draft Plan also says the state is searching for a building that could serve as a model for renewable energy technology.[21] Instead, the state should search for a city, or preferably cities, that can serve as models.[22] One idea the Draft Plan does not include that could help jump-start the use of renewable energy sources in urban areas is that of building Abbott Schools equipped with solar technology. The legislature recently

[19] See pg. 64 of Draft Energy Master Plan.
[20] See pg. 73 of Draft Energy Master Plan.
[21] Pg. 79 of Draft Energy Master Plan.
[22] The Center for the Urban Environment is a policy center in the John S. Watson Institute for Public Policy of Thomas Edison State College. The Watson Institute also houses the Urban Mayors Association, which brings together 26 urban mayors around policy issues. The Watson Institute could certainly help the state identify cities that would be willing to participate in a model energy conservation and renewable energy program. The Watson Institute, the Center for the Urban Environment and the New Jersey Environmental Justice Alliance could also help design such a program.

committed a significant amount of money to Abbott School construction[23] and the state should find the necessary funds to have the schools equipped with solar technology and to work with trade unions such as IBEW to train local residents, including interested local upper-class high school students, to install and maintain the equipment. But most importantly the state needs to develop a comprehensive, concrete policy that will result in energy conservation and renewable energy being used extensively in urban areas in a manner that will foster economic development for inner-city neighborhoods and their residents.[24]

Additional Constraint: No new nuclear power plants should be constructed within the state.

There are at least three well-known issues that cause opposition to the construction of new nuclear power plants: 1) the chance of a catastrophic nuclear accident; 2) the extremely toxic waste that is produced by the plants; and 3) the inextricable connection between civilian nuclear power and nuclear weapons proliferation.[25] Another emerging issue is the cost effectiveness of nuclear energy when it is compared to several of its competitors, such as combined heat and power, for example.[26]

While all three issues certainly pose valid concerns perhaps the most troubling aspect of the support that exists for nuclear energy in some areas of our society is the

[23] Press Release, Office of Jon Corzine, July 9, 2008, Governor Signs Legislation Approving Funding For School Facilities Projects.
[24] Part of this coherent plan should be a study that assesses job, career, entrepreneurial, and research opportunities in New Jersey within the energy conservation and renewable energy fields.
[25] For an article that discusses aspects of all three of these issues *see* Montague, P. 2002. Our Nuclear Achilles' Heel, Rachel's Environment & Health News #749, August 8, 2002. More specific citations can be furnished upon request.
[26] See for example Lovins, A.B., Sheikh, I. and A. Markevich. 2008. Forget Nuclear, Rocky Mountain Institute, April, 28, 2008

willingness to use an energy source that produces waste that is so virulently toxic almost the only method of long term disposal is deep underground burial. We would hope that one of the lessons learned from the global warming crisis is the need to use methods of energy generation that produce waste that can be easily managed or, better yet, needs no management. When humans began utilizing fossil fuels for energy we were unaware of the ecological toxicity of carbon emissions. We cannot claim the same concerning nuclear waste.

At this point in time we believe the consideration of new nuclear construction is misplaced. The state should expand its renewable energy industries and technology, and use them in combination with energy conservation to meet its future energy requirements.

Additional Constraint: No new coal power plants should be constructed within the State and existing coal power plants should be assigned firm retirement dates.

The Draft Plan argues persuasively against an undue future reliance on coal powered energy generation plants. However, the ambivalence towards coal appears to be based primarily on their significant carbon emissions. But coal powered plants also emit particulate matter, nitrogen oxides and sulfur dioxide[27] and therefore contribute to death and illness among New Jersey residents. Furthermore, coal mining is ecologically destructive, and coal combustion wastes are not only polluting our planet's atmosphere but also have a history of polluting groundwater.[28] For these reasons the state should not construct any new coal powered plants and should set firm dates for the retirement of the

[27] Miller, P.J. and C. van Atten, North American Power Plant Air Emissions, Commission for Environmental Cooperation of North America, 87 pp.
[28] See EPA, Office of Solid Waste. 1997. Coal Combustion Waste Damage Case Assessments, July 9, 2007, 70 pp.

five existing plants that currently operate in New Jersey. In lieu of retiring the existing coal powered plants another option might be to convert their power source to renewable energy or natural gas.[29]

We also advocate for a just transition for the employees of the coal-powered plants that would lose jobs when the plants are closed or converted to another power source. This would entail, at the minimum, new job training, and the continuation of health care benefits and living wage packages for up to two years, or until a new job is found, whichever comes first. The state would have to negotiate with unions representing such workers on more specific details of job training, healthcare and wage agreements.

A Process To Produce An Energy Master Plan Containing The Additional Goals And Constraints

In all probability the two additional constraints we have suggested will cause more objections than the additional goals because some people might doubt that New Jersey can meet its future energy needs without coal plants and additional nuclear plants. In practical terms we are advocating for a more aggressive use of energy conservation and renewable energy than the present Draft Plan contemplates. We are also open to discussing the continued utilization of natural gas co-generation and combined heat and power plants.

Over the past decade a number of people have said[30] that we need a prominent visionary leader to step forward and make a commitment concerning our energy future much like the one President Kennedy made in the 1960's regarding placing a person on

[29] While the EJ community is not actually advocating for natural gas plants it is at least willing to discuss utilizing natural gas co-generation or combined heat and power plants. See Wiger, C.W. 2003. Cleaner Air, Healthier Minnesota: Converting Coal Power Plants to Natural Gas, Press Release, September 18, 2003, for an example where conversion of coal plants to natural gas was advocated by a Minnesota State Senator.
[30] The Board of Public Utility's own Chris Huan was one of them.

the moon. Governor Corzine and the state of New Jersey should make that commitment. The state should commit to an energy future that will meet energy needs at a reasonable cost, eliminate global warming, and improve the health and economic well being of its residents without resorting to energy sources that produce extremely toxic waste streams.

We propose the following process to produce a new Energy Master Plan that fulfills that commitment:

- The Board of Public Utilities (BPU) should convene a conference of invited and public participants where it announces the following parameters that must be met by the new Energy Master Plan: 1) fulfill energy needs at a reasonable price; 2) reduce our carbon and fine PM footprints; 3) economically revitalize urban areas; 3) set firm retirement dates for existing coal plants and commit to no additional plants; and 4) no construction of additional nuclear plants. The conference could also serve to begin a conversation and exchange of ideas concerning how to achieve these objectives and national experts from outside the state could be invited to participate, perhaps as consultants. At the end of the conference the BPU should invite proposals that will satisfy these parameters.

- The BPU should form a committee consisting of representatives from industry, government, the environmental community, the EJ community and the general public that will choose the most viable proposal and, if it chooses to do so, create its own proposal. This proposal, or these proposals, will be forwarded to the BPU for its consideration.

- The BPU will recommend a proposal that meets the parameters stated above to the Governor, which will then be publicly debated. The BPU will not be bound by the recommendations of the committee. It can choose any of the proposals submitted or create its own. However, the proposal, or proposals, recommended by the committee will be made public.

We understand that the thought of creating a new process to produce yet another Draft Energy Master Plan may be daunting to some but this process would have several beneficial aspects. Once New Jersey announces publicly that it will be the first state to aggressively use conservation and renewables to replace coal on a set timetable and, furthermore, that it will not construct new nuclear plants, we believe

the most knowledgeable and capable people in the energy field both locally and nationally will compete to help the state attain its goals.

The media attention caused by the state's commitment should also capture the imagination of the general public and therefore present the "energy" community with the opportunity to achieve previously unattainable energy conservation goals by involving everyday citizens in conservation efforts. Regular New Jersey residents that before had only felt connected to energy issues through its growing cost might now feel part of a visionary commitment that includes reaching out to, and actually empowering, a variety of people to create a viable Energy Master Plan. This would be especially true in urban areas where EJ advocates could enthusiastically support a Plan that would reduce death and illness in inner-city neighborhoods by decreasing fine PM concentrations and provide jobs to local residents by targeting these same neighborhoods for energy conservation programs and renewable energy projects.

In short, the groundbreaking commitment and process that is proposed here could bring New Jersey residents together around an innovative common purpose instead of causing the bitter divisions and feelings that an energy plan which calls for additional nuclear plants will certainly engender.

We also think it appropriate that an energy generation plan of the type advocated here that eschews new nuclear and coal plants, and sets firm retirement dates for existing coal plants, should have concrete benchmarks which, if not met, might initiate a more traditional alternative approach to energy production.

Conclusion

We have suggested that the state's Energy Master Plan should include several additional goals and constraints. The goals include creating and implementing energy generation policies that will reduce emissions of fine PM and its precursors, and utilizing energy conservation and renewable energy sources extensively in urban areas in a manner that will promote economic revitalization. The constraints are a commitment to refrain from building additional nuclear and coal plants, and to assign firm retirement dates for existing coal plants. We also suggested a process to produce a new Draft Energy Master Plan that would contain the additional goals and constraints, and capture the attention and spark the imagination of the public while doing so. Ideally, both the process and substantive recommendations would be adopted but if creating a new Draft Energy Master Plan seems excessively onerous we hope the substantive recommendations will still be seriously considered. We also hope that some of the ideas and concerns expressed in these comments are reflected in the critically important portion of the Draft Energy Master Plan that will address the transportation sector but has not yet been released.[31] Of course, the environmental justice community stands ready to discuss any of the suggestions contained in these comments and any other issues connected to the Draft Energy Master Plan and energy future of New Jersey.

[31] Pg. 7 of the current Draft Energy Master Plan states that the transportation sector will be addressed in a forthcoming separate report.

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