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**From:** David Victor [mailto:DGVictor@law.stanford.edu]

**Sent:** Friday, April 25, 2008 11:16 PM

**To:** Haun, Chris

**Cc:** Fox, Jeanne

**Subject:** Re: NJ Energy Master Plan File

Dear Jeanne and Chris

Many thanks for the opportunity to review the Draft NJ Energy Master Plan. I have reviewed the April draft of the main report and have looked through the reports on modeling and implementation strategies in lesser detail than they deserve.

While you note in the main report that the whole idea of a "master plan" is becoming an anachronism, it is clear from the draft that there is great value in laying out a gameplan for the state to address its energy challenges.

I have a few main comments that may be helpful in revision.

--> The document is strikingly silent on the federal government. I would think that addressing some of the issues that confront New Jersey--such as the need for an adequate natural gas infrastructure, smart electric power delivery system, and investment in low-carbon power sources--depends much more on federal action than on anything inside NJ. Yet if your congressional delegation pick up this document it offers them no guidance on what really matters for the state. I assume that perennial topics such as extension of the wind production tax credit are high priorities. But so, too, are smart incentives for new nuclear power (such as what's in EPAAct 2005 and more beyond that). A federal price for carbon would strike me as essential (some of the modeling runs make this assumption, which effectively supplants the low carbon price in RGGI--but that's a big assumption for which real federal policy is needed). And the whole report side-steps the question of advanced coal in ways that I think are unhelpful--more on that below, but the requisite actions on that front also hinge on federal action to some degree. It might be useful for your team to identify a list of important federal actions and drop those into the implementation strategy and then add the necessary language in the main report--for example, I would think that a strong paragraph at the end of "challenge 3 (on page 10) would be needed to underscore where NJ needs serious federal action. In this same vein, there is a lot about the possible need for more gas-fired generating capacity in action item #3 of goal #4 (pp. 71-72) yet silence in that section on LNG infrastructure--LNG makes a cameo appearance elsewhere in the report, with the passing comment that NJ must keep abreast of market developments. If you are going to rely on local generation and a lot of wind, with an uncertain role for nuclear, then I would think that implies the need for a lot of gas and perhaps a lot of LNG.

--> The report has a schizophrenia about the role of electricity imports and exports, and in general it seems to argue that NJ should be an island. It contains negative comments about the role of interconnectors to Long Island (p.35) and it suggests, in several places, that if NJ doesn't deal with the carbon problem on its own (with demand-side measures and local generation) that it would need to rely on dirtier imports from the west (notably on p.45, where the report boldly claims an "imperative that we avoid planning an energy future based on increased imports of coal-based electricity...." Yet in other places it notes that non-NJ power is cheaper, which implies that robust interconnections to the outside market are important (e.g., p.38, third full paragraph). On balance, the report has a flavor of "NJ is an island, or should be." These assumptions sit behind the entire analysis, and I suspect they narrow NJ's options needlessly. Wouldn't it be better for NJ to explore a wider range of low-carbon options, especially for generation? On the current trajectory your generation options are basically solar (which will be marginal and really expensive), large-scale wind (which will be hard to site, possibly costly, and seems to drive your very high RPS numbers)

and a hypothetical new nuclear plant (on which the plan just advocates a dialogue about future options rather than a clear gameplan). If someone builds advanced coal with carbon storage in Pennsylvania and sells the power under contract to NJ isn't that just as good (or even better since someone else has the power plant in their back yard?). Keeping that option alive seems to be dismissed, elliptically, in the report, and that contributes to the report's lack of attention to how actions in other states and at the federal level will affect outcomes (see comment above).

--> Throughout the main report it was hard to get a sense of practical priorities. The implementation report offers some more detail, but even after looking at all the documents it was hard for me to understand exactly what should be done--which policies (adopted by which parts of the NJ government) are most pivotal? This may reflect that I don't have pivotal experience in New Jersey, so perhaps for folks on the ground it is all clear what should be done.

--> Further to the point just made, there are some areas where getting serious about global warming, in particular, would imply some possibly big changes in policy strategy that might be drawn out in more detail--so that folks know what's at stake. One is the PJM capacity market (p.39). The lead time for RPM should be set according to the lead time for building new capacity. At present it is about 3-4 years. If NJ (and other PJM states) get serious about low-carbon generation then perhaps the RPM needs to be rewritten completely--to reward investors who build low-carbon capacity, which would require much longer lead times and a special capacity market that is restricted just to low-carbon? I have not looked at that issue in any detail, and perhaps there are a zillion reasons why that is a stupid idea, but those kinds of policy implications might be drawn out a bit more. These issues reappear on p.69 (3rd to 4th full paragraphs) but in an elliptical way, noting that power plants sufficient to meet the state's needs may not be built and there may be a need for new contracts--but exactly what would be needed or best is hard to fathom.

In addition to these main comments, a few detailed comments follow:

--> Many of the figures are nearly impossible to decipher in black & white printout.

--> The capex assumptions for the model (p.32) strike me as way off base. IGCC numbers are surely higher (at least the max) and the nuclear numbers might max at 2x or more your assumptions. All this may not matter much because the alternative scenario seems to hinge on limiting demand rather than pursuing new generation (and especially new generation of the high capex variety), but it may be worth scrubbing those numbers. Indeed, it was very hard for me to understand whether/how the model outcomes depend on the high capex assumptions, notably for nuclear.

--> The statement about oil prices at the bottom of p.9 is not quite right. Oil prices are rising for a variety of reasons--the weak dollar, turmoil in some oil producing regions, continued strong demand for oil from all world regions (notably the blockbuster economies in Asia) and the fact that most of the world's oil reserves are controlled by countries that are unable or unwilling to put additional supplies on the market in an orderly fashion. These high oil prices have also helped to lift the prices of all energy commodities, notably gas where prices depend on an array of factors, including in part the price of oil.

--> the report notes correctly that the price of coal has doubled over a year (p.45). But it may be useful to underscore that there is wide disagreement on the future of coal prices--some analysts think that prices will eventually settle back to earlier, lower levels while others see a fundamental shift to a tight world coal market with sustained high prices. You cite a Forbes.com article that is just one view of the matter and that view is focused on just the near term (1-2 years, I think).

--> The wording on the "alternative scenario" is very hard for me to figure out. In the special report on modeling seems to underscore that the alternative scenario isn't the "Master Plan." But the main report is more elliptical and seems to point to the alternative scenario as evidence of what can be achieved if the Master Plan is implemented. So which is it?

Some caveats: I have not sifted through every assumption and detail in the report. And much of the analysis seems to rest on a balance between bottom-up statements about particular policies (notably on renewables and efficiency) as well as the analysis in the alternative scenario of the model. I am not a modeler so my value on that front is limited, but the assumptions in the modeling strike me as really important and hard to evaluate. In particular, I have not evaluated the assumptions about cost and implementation feasibility for the myriad of demand side measures that you propose; I am a bit concerned that the report is so dependent on demand side measures that it will be extremely important to be sure those assumptions are robust. (For example, the report points to cutting peak demand in 2020 by 5.7 GW, which seems like a huge response for a total system whose BAU peak will be 25.6GW, according to table 2.) The modeling work makes some effort to evaluate the sensitivity of the results to the assumptions about demand response (which is just one area of demand-side measures), but it is very hard to get a feel for whether the sensitivity analysis spans the range of plausible actual outcomes for demand response. These kinds of details really matter because so much is riding on what happens on the demand side. I have not evaluated these details, but someone should be sure they are robust.

with best wishes

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