Building Science Innovator’s Recommendations to Improve Entergy New Orleans’s 2015 Integrated Resource Plan and Planning Process

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**Executive Summary**

Building Science Innovators [BSI] is submitting, for review by the New Orleans City Council [NOCC], this executive summary of a critique of Entergy New Orleans’ [ENO] 2015 Draft Integrated Resource Plan [IRP] and elaborated recommendations designed to enhance both the result and process used to get that result. This document contains just the executive summary. It is derived from two exhibits BSI specially prepared for this intervention: i) *BSI’s Critique of the Core Assertions of ENO and Intervenors within the 2015 IRP* [BSI’s Critique] and ii) *BSI’s Recommendations for an IRP for ENO*. They depend upon BSI’s *Inverted Demand Compliant Construction,* *a Key to a Sustainable Energy Future* talk to EEBA’s September 2014 national conference, *The Energy Hawk*, as well as cited references.

How should CCNO engage City of New Orleans [CNO] ratepayers and the construction industry to rapidly and economically reduce peak demand in sufficient size and speed?

BSI believes any of the these three methods *CAN* displace 300 MW of peak demand in 5 years.

1. Incentivize robust demand-side management [DSM] by utilizing the means briefly listed in the critique of the 3rd assertion within BSI’s Critique and more fully explained in *BSI’s Recommendations for an IRP for ENO. [[1]](#footnote-1)*
2. Incentivize and provide legislative support for Community Solar in two ways:
	* Promote a system of small, 50 to 100 KW solar farms with 150 to 300 kWh of integral battery storage on most “key lots” of the city.
	* Promote much larger solar farms at distressed property found all around the city.
3. Incentivize the installation of battery energy storage systems [BESS] in every building.

BSI considers all of the above, as well as Demand Response, forms of DSM.[[2]](#footnote-2),[[3]](#footnote-3) The CCNO should not pick the winner, allocate or segregate resources among these ways to reduce peak demand, but instead, create the following mechanisms. Here is a *carrot and stick* approach that applies graduated charge increases and rebates to engage and transform the marketplace.

1. Install smart meters throughout the ENO building stock. Each should have the ability to report consumption every 5 minutes. Residential customers can be the last to get them.
2. Change the *demand charge* found in all but residential customers bills to a *utility peak demand charge* from what the customer had been paying as a demand charge by equal steps each year for five years until $20/KW/month. *Utility Peak Demand* for a building is the maximum measured KW consumption rate during any consecutive 15-minute period within the utility’s 3 to 6 hour peak demand time of any day for a month of readings.[[4]](#footnote-4)
3. Customers earn a 50% demand charge discount if they buy into a solar farm or install a rooftop system sufficiently large to displace at least 30% of their annual consumption.[[5]](#footnote-5)
4. kWh’s generated at a solar farm cannot be banked for future use; energy not consumed in a five-minute generation period is used to discount bills for low-income ratepayers.[[6]](#footnote-6)
5. Facilitate solar farms on key lots and/or economically distressed real estate.
6. “↓peak watt for 10 years” = 10-year average demand drop during utility peak hours.
7. Provide a $1.5/“↓peak watt for ten years” rebate for an energy efficiency retrofit that saves 10% of bills; CNO retains ownership of associated White Certificates [WC].[[7]](#footnote-7),[[8]](#footnote-8),[[9]](#footnote-9),[[10]](#footnote-10)
8. Provide a $0.75/“↓peak watt for ten years” rebate for purchasing part of a PV system; the CNO retains ownership of the associated Renewable Energy Credits [REC].[[11]](#footnote-11),[[12]](#footnote-12)
9. Provide a $0.50/“↓peak watt for ten years” rebate for any purchase of part of a BESS.[[13]](#footnote-13)
10. Provide a $0.20/”↓peak watt for ten years” rebate for any other kind of retrofit.[[14]](#footnote-14)
11. Provide a mechanism whereby any ENO customer can sell power quality services, i.e., spinning reserve and/or frequency regulation, to ENO or MISO at competitive rates.[[15]](#footnote-15)
12. Customers eligible for rebates, discounts or power quality sales have smart meters.[[16]](#footnote-16)
13. Accept RESNET certified Home Energy Raters as certified 3rd party verifiers.[[17]](#footnote-17)
14. Mandate that Real Estate Multi-listing services publicize energy ratings if available.[[18]](#footnote-18)
15. Invite input by educational institutions, other industries or NGO’s to propose regulatory changes or rebates that can invite their services or further lower ENO’s DSM costs.

What should ENO do while waiting for these peak demand programs to have their full effect?

1. ENO should continue to satisfy unmet peaking energy needs with power from MISO.[[19]](#footnote-19)
2. Stop adding generation resources to the rate-base now and for the foreseeable future.[[20]](#footnote-20)
3. Break this chain of logic at every link: ENO makes more profit only by building more generators[[21]](#footnote-21); DSM cannot displace the need for new generation[[22]](#footnote-22); DSM is under ENO’s control. [[23]](#footnote-23)

What should CCNO do to ensure that this IRP process and future IRP processes find optimal results?

1. Pay intervenors when they effectively contribute to a regulatory decision that saves money in a manner similar to the program that works in California.[[24]](#footnote-24)
2. Fund the Center for Excellence in the Built Environment [CEBE] by paying intervenors. [[25]](#footnote-25)
3. Pay a third party consultant to set up a website to help:
	1. Publicize what, how, when and where key assumptions are made and how they can be changed;
	2. Improve public confidence, input, input effectiveness, collaborative process and result finding;
	3. Publicize examples of effective input by the public and, thereby, facilitate it happening again; and
	4. Encourage the public to work with intervenors.[[26]](#footnote-26)
4. A third party expert chooses IRP software, input data, issues to model and present. [[27]](#footnote-27)
5. Vet third-party consultants to assure that motivations are not compromised by self-interest or on-going relationships with any utility, business, industry, or government policy purveyor.[[28]](#footnote-28)
6. Pay a third-party consultant to choose and implement the IRP modelling software employed.[[29]](#footnote-29)
7. Select from among pre-certified IRP modelling software to confirm its competence to:
	* Fully handle demand, supply and storage options located on either side of the meter,
	* Perform automated, what-if analyses on the broadest range of issues — including risk,
	* Warn against classes of input errors and inappropriate interpretation of results.

**Bill for Services Rendered**

BSI knows that the City of New Orleans does not pay for the services of intervenors. However, that is not a good thing. In fact, California has been paying intervenors in utility rate cases for many decades.

<http://www.cpuc.ca.gov/NR/rdonlyres/A0BD21F9-7644-477E-94F4-85B504D43F66/0/UpdatedIntervenorCompensationProgramGuide.pdf>

Because BSI normally charges $200/hour for consulting time for its clients and this project has taken over 100 hours, the normal billed cost of the report would be $20,000.

BSI hopes that the City of New Orleans will institute a process similar to the one utilized in CA and make this invoice retroactively acceptable.

Of course, BSI does not really expect to be paid unless the City Council of New Orleans agrees that

1) It should pay for the quality efforts of intervenors in utility rate cases,

2) The decision the City Council made was significantly swayed by BSI’s arguments, and

3) The resulting decision saves the ratepayers more money than BSI’s consulting fee.

BSI believes that it has special expertise and experience in the matter of Integrated Resource Planning, the historic and present condition of utility regulation, the building stock of New Orleans and the profession of Energy Performance Design and retrofit contracting. As such, BSI has taken steps to prepare this document, but in the future, if such efforts are not properly met with economic remuneration, BSI will not be able to afford to provide this help in the future. However, should BSI get this economic help, it plans to hire researchers and authors to augment this work into the future.

BSI is not the only intervenor who should be paid for its historic efforts in utility regulation. The most notable example of an unpaid public servant is the Alliance for Affordable Energy. Its efforts have contributed to avoiding many hundreds of millions of dollars since 1985 when it was first formed. The Alliance is a public servant and deserves public funds according to the same California process BSI recommends to the City Council of New Orleans.

Sincerely,

Myron Katz and Norman Witriol.

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1. <https://www.tep.com/doc/planning/2014-TEP-IRP.pdf> TEP’s 2014 IRP predicts a 40 MW drop in peak demand from their energy efficiency program every year until 2020. Why? Because the state of Arizona mandated it. [↑](#footnote-ref-1)
2. In a private communication on August 12, 2014, Joananne Bauchman, Business Development and Sales Manager of Vermont Energy Investment Corporation, expressed her opinion that classical DSM artificially separates — allowing rebates for in energy efficiency investments but not for solar or batteries; that is why DSM is renamed in NY. [↑](#footnote-ref-2)
3. Demand response (also known as load response) is a temporary reduction to the electricity usage in response to power grid needs or shifting the electricity usage during periods of peak demand or other grid constraints.  [↑](#footnote-ref-3)
4. This does not need to create an *increase* in demand charge because some buildings like churches will see a drop in this charge; conversely, some homes that operate like a commercial building should be required to pay this fee. [↑](#footnote-ref-4)
5. California’s utilities commonly have this discount. — Private communication, B Ward, Solar City executive, 8/15. [↑](#footnote-ref-5)
6. Washington D.C.’s utility regulator applied this approach for solving the non-participant test for solar farms. [↑](#footnote-ref-6)
7. BSI believes that performance-based rebates can easily outperform price-based if there is good quality control. [↑](#footnote-ref-7)
8. $1.5/W was chosen because the *BSI Critique* showed that ENO has been paying $1/W for DSM but is willing to pay $5/W for a plausible PV system in its IRP; the PV system was picked as most economical in one scenario. [↑](#footnote-ref-8)
9. <https://en.wikipedia.org/wiki/White_certificates>; some regulators require their IOU’s to buy and trade WC’s. [↑](#footnote-ref-9)
10. By demanding a minimum 10% reduction in consumption, *low-hanging fruit* cannot be the only fruits of success. [↑](#footnote-ref-10)
11. This has highest priority; this one should be implemented yesterday, since most solar tax subsidies end in 2016. [↑](#footnote-ref-11)
12. <http://www.epa.gov/greenpower/gpmarket/rec.htm>; EPA’s recent *Clean Power Plan* will make this lucrative. [↑](#footnote-ref-12)
13. BESS can be more cost-effective than PV and has a much greater ↓peak demand potential per dollar invested. [↑](#footnote-ref-13)
14. E.g., putting timers on electric water heater that keep them off between 6 AM and midnight; this is too cheap. [↑](#footnote-ref-14)
15. A BESS in a home, sized to provide emergency back-up power for a week, can earn $150/month with this tariff. [↑](#footnote-ref-15)
16. This helps to generate a desire for smart meters and a back-up means of quality control for rebates. [↑](#footnote-ref-16)
17. Why reinvent the wheel? RESNET’s rating providers are required by their industry to provide quality control. [↑](#footnote-ref-17)
18. This idea was already implemented in Gainesville, FL for their utility — zero cost and engages the marketplace. [↑](#footnote-ref-18)
19. Currently, before Michoud is shut down, ENO buys power from MISO because it is cheaper than making electricity with the low efficiency generators within Michoud. ENO did not show in its IRP that a healthy contribution of DSM like proposed above could not decrease demand faster than ENO could build a new generator. No convincing evidence shows that ratepayers will be paying less for energy in 2019 (the earliest possible time that a new generator can come on line) with a new generator instead of more investment in DSM. [↑](#footnote-ref-19)
20. ENO’s IRP did not consider installing batteries to decrease the needed size of the alternative PV system by a factor of four; but it did show that if that PV system capital cost were one-fourth as much as modelled, it would have been deemed the lowest cost alternative in every scenario. BSI has shown that BESS storage without PV is more cost effective than PV without BESS and BESS added to PV can change the percentage of usable “on peak” output of a PV system from the 25% ENO assumed to two to six times that amount. [↑](#footnote-ref-20)
21. Decoupling the incentive for the utility to only make a profit by building new generators is supported by BSI. [↑](#footnote-ref-21)
22. As long as the current, coupled profit motive persists, ENO will want its DSM to fail to avoid the need for a new generator. Thus if ENO runs the IRP study, it will be inclined to make choices that preclude consideration of a better DSM. [↑](#footnote-ref-22)
23. As long as ENO runs the DSM it can be expected to discourage improvements in its effectiveness. [↑](#footnote-ref-23)
24. Since its inception in 1985, Alliance for Affordable Energy, has major impact upon electricity policy and rates — probably with an impact measured in hundreds of millions of dollars. It deserves more support. California figured this out. We do not have to reinvent the wheel. However, the Alliance has been joined in the last few years by Green Coast, the Solar Industry group and now BSI. Quality input costs money. Pay for what you get and you’ll get more and better at decreased consulting costs with increasing ratepayer benefit. [↑](#footnote-ref-24)
25. The CEBE was conceived and promoted by the New Orleans Energy Policy Taskforce [NOEPTF] and was asserted near the top of its recommendations as published within the *The Energy Hawk* of 2007. The NOCC has already taken many of the recommendations of that document including using an IRP process and actually endorsing CEBE in every way except by providing funding. BSI, the initiator of the CEBE idea and leader among those who guided the CEBE idea though the NOEPTF’s deliberations, will volunteer to provide the startup staff for CEBE. Please compare quality and content of this document to the stated goals of CEBE as described in the *Energy Hawk*. See pages 12 and 13. [↑](#footnote-ref-25)
26. It is grossly ironic and counter to the public’s best interest that the CCNO is overworked and does not have the time to get into the weeds about utility regulation while at the same time there are intervenors who have the time and want to listen to the public but do not have the financial backing to support those communications. All the while there is more than enough cash-flow from missed economic opportunities to support these intervenors. [↑](#footnote-ref-26)
27. BSI strongly endorses going to Power Systems Engineering [PSE] for such expertise. During 2014, BSI worked for almost half a year with Steven Fenrick, their chief economist. He and PSE provided services for free in an effort to support a grant application to DOE to help get more BESS installed in buildings. These are good citizens. Such companies, not ENO, should be running the IRP process — from choosing the software all the way to explaining and presenting results. [↑](#footnote-ref-27)
28. DOE’s recommendations can be suspected to be less than optimal. Thus a company that pushes too hard to advocate for any kind of solution or means toward an end should be considered dubious. [↑](#footnote-ref-28)
29. BSI found multiple short-comings in the quality of the use of the Aurora software that ENO chose to handle the IRP process. This included the lack of any consideration of batteries and no automated risk analysis — both of these issues were key aspects of the problems with conclusions. Less obvious was a problem with another assumption: ENO made the unjustified assumption that a PV system could not go on line any sooner than 4 years after it was approved. ENO also biased interpretation of its results by omitting the best graphic that showed how much better a PV system than its competitors would be in the “Generation Shift” scenario. ENO also biased the modelling to help it argue that Combustion Turbine [CT] generation option had the best chance of making the cut by including it with three other mixes of renewable energy. ENO did not do a similar modelling for Combined Cycle Gas Turbines [CCGT]. [↑](#footnote-ref-29)