

**BEFORE THE
COUNCIL OF THE CITY OF NEW ORLEANS**

IN RE: REVISED APPLICATION OF ENO NEW ORLEANS, LLC FOR A CHANGE IN ELECTRIC AND GAS RATES PURSUANT TO COUNCIL RESOLUTIONS R-15-194 AND R-17- 504 AND FOR RELATED RELIEF	DOCKET NO. UD-18-07
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**BUILDING SCIENCE INNOVATORS, LLC
REPLY BRIEF**

Building Science Innovators (BSI) submits this Reply Brief to the New Orleans City Council (Council) in the captioned proceeding.

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INTRODUCTION¹

BSI proposes Council adoption of Customer Lowered Electricity Price (CLEP) rates and tariffs across all customer classes and all ratepayers.²

To the average customer, CLEP simply means: buying electricity when it is less expensive and then getting paid almost all the avoided costs of the utility that this generates.

This simple but powerful message has been deemed important enough by our local Sierra Club to receive the following endorsement:

The Delta Chapter New Orleans Group, Excom, voted two years ago to support CLEP and I have been involved with the CLEP team for two years and I spoke at the rate case evidentiary hearing. The CLEP Desktop software demonstrates that CLEP will reward customers who shift usage to off peak hours. It provides an incentive to customers, at no cost to ratepayers, for customers to make investments in devices that reduce peak demand. I describe it as a sophisticated time of use rate, which has been successful in other states. The CLEP model would be able to be introduced in New Orleans because we are already doing AMI and our customer market is under half a million. The upside to CLEP is that it could lead the country to a reduction in the need for peaking plants, with significant CO₂ reductions, and develop a market for behind-the-meter batteries (which could be the batteries in our EVs) which will improve the reliability of our electric grid and further reduce CO₂ emissions.

CLEP gives Louisiana a chance to be 1st and not 49th as usually is the case for everything. It doesn't cost the ratepayers and can lead to improved grid reliability.

—David Stets, Delta Chapter Chair, August 1, 2019

¹ The reader is advised to read the computer version of this document instead of a print-out, in order to avail himself of hyperlinks, found at all underlined texts, and in the table of contents which connect to fuller explanations elsewhere in the document if in Word format use click or CTRL click if in PDF click works.

² Point 8 of the BSI Initial Post Hearing Brief complements the description of CLEP found in BSI's Direct Testimony.

Originally introduced into the 2015 ENO Integrated Resource Planning process to fix the badly flawed IRP, CLEP is no longer a nascent idea. Unlike the CLEP proposals of 2016 and ENO's tiny AMI deployed base at that time, CLEP now benefits from both ENO's projections of full deployment of AMI by 2020 and CLEP's 2019 redefinition, documentations, and explanatory tools, encompassing a myriad of TED talks, real and animated videos, professional conference presentations including a full slide deck as well as access to the full set of BSI's submissions to the **UD-18-07** Evidentiary Record.³ Moreover, unlike 2016, CLEP is applicable to all customer classes. Unlike the proposal of 2016, CLEP is supported by a fully formulated simulation, the CLEP_Dashboard.⁴ This allows ratepayers, the utility, the Council and even perhaps the most technical of expert utility consultants to "play the simulation" to learn all that they might need to know to more than adequately understand and confidently predict where, why and how the money moves in a myriad of situations—where most are quite easy to change, and all are cost-effective customers' or utility regulators' choices. The professional-grade CLEP_Dashboard uses 2018 wholesale prices from Midcontinent Independent System Operator, Inc. (MISO)'s database.⁵

CLEP incorporates and builds on modern, currently-used kWh-saving or CO₂ reducing innovations including: energy efficiency (EE), time-of-use (TOU) rates, renewable energy (RE), net energy metering (NEM), integrated resource planning (IRP), distributed resource planning (DRP), distributed energy resources (DER), electric and thermal energy storage, electric vehicles (EV), microgrids, and demand response (DR), all of which serve to flatten the utilities peak demand curve.

Driven by ratepayers' self-interests and CLEP's simple rate formulations, CLEP empowers

³ <https://www.BuildingScienceInnovators.com/align-by-design.html>

⁴ For a test-drive read Exhibit 4 within BSI's Reply to ENO's 1st Interrogatory. However, a full, hands-on experience of CLEP via the Dashboard has been available since the end of March 2019 and can be provided by a Zoom video conference on very short notice and is free to anyone.

⁵ <https://api.MISOenergy.org/MISORTWD/lmpcontourmap.html>

ratepayers to take control of usage on their side of the meter, and optimally orchestrate the use of these myriad innovations. By simply focusing upon lowering their energy bills and/or improving reliable access to electricity on the customers' side of the meter, CLEP customers collectively generate market transformation, rapid job growth, enhance utility profit, ameliorate utility reliability issues and another important and intended goal: lowering our carbon footprints—which is urgently needed in New Orleans.

Merits of CLEP: from Customer's, Rate Case, then Earth's perspectives

CLEP lowers Customers' economic, societal and environmental costs.

CLEP provides a new and very important innovation to allow Customers to lower energy bills, cost-of-energy, cost-of-service, need for peaking plants, carbon footprint, cross-subsidies, economic and life-threatening effects of power outages, et cetera—all in a synergistic fashion.

CLEP best matches the needed transition from old-school to modern Rate Making.

CLEP provides a new and very important tool in a Rate Case, that rapidly fosters smart use of: Distributed Energy Resources (DER), microgrids, batteries, electric vehicles, renewable energy, energy efficiency all in a manner that can easily be mutually beneficial to all parties and issues including diverse customers within customer classes, different customer classes, access to electricity resources that do not easily fit into the “energy is separate from capacity” rate-making approach, accommodates the rapidly dropping price of renewable energy and batteries that are creating myriad stranded assets, and how to handle dispatch when there is too much renewable energy.

CLEP provides a rational and uncompromising approach to substantially help ameliorate the Global Warming and Sea Level Rise problem

These goals are reached at no cost to anyone, and a profit to all by simply empowering energy consumers and prosumers with the tools to make decisions in pursuit of their self-interests.

The Council should appoint a *Load Flexibility and Time-of-Use Rate-Design Working Group*

Given the growing recognition across the country of the importance of expanding the flexibility of electric loads, and the potential for significant cost savings for both utility customers and utilities, it is imperative that work begin immediately in designing and implementing CLEP's innovative, customer-based approach to capturing cost savings, efficiencies, and improved system reliability. This [article](#) by David Roberts at Vox.com illustrates how important load flexibility and time-of-use (TOU) pricing incentives are for both cost savings and improving system reliability.

In response to several comments and observations by parties expressing concerns and/or opposition to moving forward with CLEP, we respectfully suggest that the Council appoint a working group to develop a consensus proposal to move forward with a new customer rate design proposal, for customers: including residential, commercial, municipal, water utility and industrial, designed to incentivize customers to purchase, use, and store energy when wholesale prices on the MISO grid are low, and then send power to the grid when utility demand is greatest and prices are high. The working group should include key stakeholders, including ENO, the City's utility advisors, residential, commercial, municipal, water utility and industrial customers, environmental justice and conservation communities, and some nationally recognized experts on load flexibility, and TOU rates. In addition, the Council should retain an independent consultant to provide technical support and expertise to the working group, such as the Brattle Group.

We believe the *Load Flexibility and Time-of-Use Rate Design Working Group* should be tasked with developing a detailed set of recommendations and proposals for how to proceed with implementing CLEP, and report back to the City Council within 120 days, with the goal of launching CLEP within the next 6 months.

DISCUSSION

CLEP has the potential to more effectively implement the goals of 50⁶ of the Council’s resolutions than what has been done by any other means.

For example, **Resolution R-07-600** resolves that, “the Council, through the Utility Committee, [will] align customer pricing and incentives to encourage investment in energy efficiency”, i.e.,: *Use rate design to promote energy efficiency (EE)*⁷. *Regrettably this never occurred. CLEP fills this void.*

TABLE 1: Cashflows Estimates of Key Retrofits – from Direct Testimony⁸

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Key Retrofit	annual income		Net Income	Payback (years)	Capital Cost	Annual Rent	CLEPm / CLEP	Peak kW Saved
	ENO	CLEP						
Dishwasher	0	26	26	na	0	0	83%	1/5
Timed Water Heater	0	150	150	0.33	50	0	33%	4/5
Heat Pump Water Heater	372	80	452	0.66	300	0	62%	4/5
Ice-Making AC	330	1040	1370	2.19	3000	0	77%	4
Electric Battery (12 kWh)	0	686	686	14.58	10000	0	87%	3
Community Solar (5 kW)		1175	755	na	0	-420	53%	2
HPWH, Ice Making AC & Electric Battery	702	1806	2508	5.30	13300			

kW of Community Solar in NOLA produces 9125 kWh/year. Dividing \$1175 by 9125 gives the price: \$0.129 per kWh. Dividing that by \$0.11 means CLEP pays 17% higher than Retail.

⁶ 50 resolutions are somewhat less than those named in BSI’s Initial Post Hearing Brief within Point 1 and Point 9.
⁷ **Efficient energy use**, a.k.a. **energy efficiency**, is the goal to reduce the amount of energy required to provide products and services. https://en.wikipedia.org/wiki/Efficient_energy_use .. However, the standard and by far most common way to measure energy efficiency for most appliances and homes is in units of energy service delivered divided by kWhs consumed.
⁸ [Appendix 1](#) states Table 1’s contents can be directly substantiated from BSI’s Direct Testimony filed on Feb 1, 2019

Rebutting negative comments by the Advisors and ENO.

BSI notes that both ENO and the Advisors originally chose to cross-examine Dr Katz, and both decided against doing so and instead declined cross-examination of BSI's witness, Myron Katz, PhD at the evidentiary hearing. Because of this, BSI was not afforded the opportunity to respond to any concerns or clarify any misunderstandings that ENO or the Advisors may have had. Please see [Appendix 2](#).

ENO discourages use of CLEP.

“4. The CLEP is indistinguishable from past proposals previously rejected by the Council. ENO Brief page 99.

Building Science Innovators, LLC (“BSI”) has, as part of this proceeding, once again sought to have the Council approve and the Company implement a concept known as Consumer Lowered Electricity Pricing or “CLEP.” As Mr. Owens’ Rebuttal Testimony notes, the Council has previously rejected BSI’s CLEP proposals due to numerous flaws and erroneous assumptions underlying the proposal.³³⁹ When confronted with this reality, BSI did not attempt to modify CLEP or otherwise address the flaws previously identified by the Council. Instead, BSI’s witness responded with incomprehensible procedural arguments (in testimony) and pointed to portions of its witness’ Direct Testimony. These efforts do not result in any evidence that demonstrates why the Council should revisit and reverse its previous determinations regarding the merits, or lack thereof, of the CLEP concept. The Council should stand by its previous determinations and continue to decline the invitation to force the Company to incur unnecessary costs and to inflict the costs of the CLEP proposal on New Orleanians.”

Every aspect and nuance of these negative assertions are fully rebutted in [Appendix 2](#). Rebuttal Testimony of Myron Katz, PhD. CNO Docket No UD-18-07. April 25, 2019. However, we believe that ENO’s constructive participation in the proposed Load Flexibility Working Group would help answer some of the key design issues and impacts of CLEP raised by both ENO and the Council’s Advisors.

Advisors Discourage use of CLEP.

BSI notes that the Advisors' description of CLEP as quoted from BSI's direct testimony is accurate, reasonably inclusive and not misleading for nine sentences starting on page 121 until on page 122 the Advisors incorrectly state:

“BSI states that the impact on other customers of the CLEP rate is mitigated by the inclusion of a 5% service charge on every CLEP transaction and by the fact that proper use of the CLEP rate by a customer will lower the average cost of electricity ENO incurs, while a CLEP customer that fails to modify their behavior and makes purchases or sales at the wrong time will only cause an increase in their own electricity bill.”

The phrase “*BSI states that the impact on other customers of the CLEP rate is mitigated*” strongly implies that CLEP imposes **some if not many** costs onto other customers. The direct testimony as well as the surrebuttal testimony states the exact opposite. Every proactive action by a CLEP customer can only increase their income and will automatically lower the cost-of-energy for all customers. CLEP has no additional impact on other ratepayer's bills. This is explained in Q11 HOW DOES CLEP LOWER EVERYBODY'S RATES²² in the Direct Testimony and is referred to again in the Surrebuttal testimony in [Appendix 2](#).

“BSI argues that its CLEP rate would lower ENO's true cost of service to supply power, enhance reliability, appropriately assign demand charges to customers with higher than usual demand, correctly reflects residential customers' impact on demand and energy use, account for entities with a peak that differs from ENO's peak, provide economic benefit to customers who have heavily invested in storage, provide credits to EV owners who charge off peak, provide a financial incentive to install batteries, and generally cause customers to make choices that will lower demand.”⁹

⁹ Advisors Brief, page 122.

Although these assertions are correct, they only reflect about 10 to 20% of the potential benefits of CLEP as explained in BSI’s brief. Notably missing CLEP benefits are 1) CLEP replaces ineffective IRP’s,¹⁰ 2) makes FRP’s and Decoupling irrelevant,¹¹ 3) [doubles cashflows for RE and EE](#) and 4) for the first time, [CLEP provides a financial model for deep investments in energy storage](#) that are indispensable for a sustainable energy future.¹² The alternative proposal being imported from Algiers does not enable implementation of points 2, 3 or 4. None of these benefits are mentioned in this paragraph.

“Whether the CLEP proposal will actually produce these benefits is uncertain.”¹³

"In addition, the design of CLEP is extremely complicated and not one that customers will easily be able to navigate.”¹⁴

Again, we believe that many of these issues and areas of confusion can be addressed and resolved in the context of a collaborative effort among key stakeholders, experts, ENO, and the Advisors, in the proposed Load Flexibility Working Group.

After all, for the average customer, CLEP is fundamentally not much more than buying electricity when it is less expensive and getting paid most of the benefit that generates—the rest is commentary.

I-phones are very complex machines, but people that buy them learn to navigate them to the level with which they are comfortable. CLEP is no different. Someone afraid to try it will simply not opt-in. Those

¹⁰ “During the 2015 ENO IRP, BSI formulated and recommended Customer Lowered Energy Pricing (CLEP),” BSI’s Direct Testimony, page 6.

¹¹ IBID.

¹² <https://www.eeba.org/Data/Sites/1/conference/2014/presentations/Katz-Inverted-Demand-Compliant-Construction.pdf>, cited within BSI’s Direct Testimony on page 6.

¹³ Advisors, page 122.

¹⁴ Advisors, page 122.

that opt-in will / can be given a simple training video link (a TED talk) to learn about it. CLEP is far, far less complicated than the typical Rate Case (and as we will develop later in this brief, Rate Cases have inherent paradoxes if not fully inconsistent assumptions) which ratepayers need not understand in order to pay their bills. And CLEP customers are not required to understand CLEP to benefit from its cost-effectiveness.

The Advisors believe that the most likely outcome of implementing CLEP would be that most CLEP customers experience difficulty in managing their energy use and production in five-minute increments, resulting in increased electricity bills and frustration.”¹⁵

This is an unfounded assumption; to make this argument, one would have to assert that the customers can't understand how to put a timer on a hot water heater or use a programmable thermostat. CLEP is designed to work with simple tools much like a programmable thermostat. Why would anyone argue against empowering the Council's constituents to be in more control of their lives? Today's consumers are demanding more and more control over their homes' environments through internet control of thermostats, devices, locks, home security and video monitoring.

¹⁵ Adv p 123.

CLEP supports Issues of and related to those Important to other Intervenors and the Advisors

3 Parties exclude Riders and only use legacy base rates to set Revenue Requirements.¹⁶

ENO proposes excluding RIDERS created since 2009 (or the costs and issues associated with them) from the process to establish the utility's REVENUE REQUIREMENT. The Advisors oppose this approach and claim that ENO's reason preferred excluding them was to better assure themselves receipt of the associated cashflows not subject to vacillating return on equity (ROE) recalculations¹⁷ that are themselves subject to readjustment at each annual Formula Rate Plan (FRP) true up.¹⁸

Advisors want to include all non-variable riders with the base rates to establish Revenue Requirements, but their process opens the door to put Cost-of-Energy into the Rate Case.

Advisors claim their right to prevail from R-17-504.¹⁹

Advisors assert its wrong to exclude most Riders.²⁰

Advisors open the door for Cost-of-Energy in Ratemaking.²¹

BSI supports the Advisors assertion that as much as possible all riders should be included to establish revenue requirements.

¹⁶ CCPUG and APC make this assertion together with ENO.

¹⁷ "ENO proposes multiple riders designed to provide ENO nearly guaranteed exact cost recovery through mechanisms such as monthly or quarterly rate adjustments, over/under collection correction mechanisms, and true ups to reflect actual vs. budgeted costs." Advisors Initial Post Hearing Brief, page 5.

¹⁸ "The Advisors' recommendation to update all of the inputs to class cost of service studies, including demand and energy allocation factors that allocate cost among customer classes, during the course of annual FRP reviews is inconsistent with the general concept of FRPs, which are designed to provide an abbreviated and streamlined review of base rate cost recovery. The Advisors' recommendation would essentially convert the FRP process into "mini" rate cases every year which would make the process unnecessarily complex, expensive, contentious and inefficient. FRPs typically have formulas which specify how any rate adjustments are to be accomplished and apply adjustment as a uniform percentage of base rate revenues, whether there are increases, or decreases." APC Initial Post Hearing Brief, p 10.

¹⁹ "Advisor witness Prep criticizes ENO's failure to comply with Council Resolution No. R- 17-504 which provided that ENO should evaluate its total cost of service in determining the utility's total revenue requirements. Council Resolution No. R-17-504⁴⁷ provides: "include all of ENO's revenues and costs subject to ratemaking treatment, including an allocation of total costs among the rate classes (i.e., matching the allocation of total costs to the total revenues of each ratepayer class) as part of each fully allocated electric and gas cost of service study (i.e., Period I, Period II, and any out of period adjustments)." Advisor Initial Post Hearing Brief, page 20.

²⁰ IBID.

²¹ IBID.

Cost-of-Energy is germane to Ratemaking.

Cost-of-Energy is certainly not predictably variable and is more than a peripheral issue of this rate case. None of the briefs filed so far have recognized cost-of-energy as germane to the process and goals of the rate case despite a Council Resolution requiring consideration of all costs..

Council Resolution No. R-17-504 (September 28, 2017) provides: “include all of ENO's revenues and costs subject to ratemaking treatment, including an allocation of total costs among the rate classes (i.e., matching the allocation of total costs to the total revenues of each ratepayer class) as part of each fully allocated electric and gas cost of service study (i.e., Period I, Period II, and any out of period adjustments).” Advisors Initial Brief Combined Rate Case UD-18-07, p 20.

Cost-of-Energy has been “improperly” entangled with capital costs since Grand Gulf’s costs were put into the FAC.^{22, 23, 24} However, 40 years ago, the technology may not have been readily available to facilitate sufficiently accurate Cost-of Energy tracking.

That is not the case in 2019 because an excellent alternative for ENO’s Cost-of-Energy is the weighted average MISO price which is easily calculated each month.²⁵

Time of Use rates also entangle energy and capital costs. CA experienced this challenge roughly 20 years ago when they introduced optional Time-of-Use (TOU) rates.²⁶

Los Angeles’ Muni’s new solar & Battery PPA has the same issue.²⁷

²² http://cityofno.granicus.com/MetaViewer.php?view_id=7&clip_id=1806&meta_id=240639

²³ “ENO allocates and recovers many other fixed costs on an equal percentage basis from each rate class; however, it abandons this established methodology with respect to the EAI WBL and River Bend 30% PPA capacity costs.” CCPUG, p 15.

²⁵ See [Appendix 3](#).

²⁶ <https://www.seia.org/blog/california-takes-significant-step-toward-getting-time-use-rates-right>

²⁷ Why Energy Storage Is Proving More Disruptive Than Cheap Renewables
<https://www.forbes.com/sites/jeffmcmahon/2019/08/02/why-energy-storage-is-proving-even-more-disruptive-than-cheap-renewables/amp>

CLEP directly lowers the Cost-of-Energy RIDER by design²⁸

CLEP helps to extinguish cross-subsidies among customers in compliance with FERC's Cost-Causation guidance 1992.²⁹

Allocating costs among rate classes starts with a "12-point Coincident Demand" (CD) test

The 12-point CD test means identifying the top 12 peak demand incidents in the last test year to provide a determinative metric and to what extent does each customer class contribute to the coincident peak demand of the utility.

12-point CD test is the undisputed metric in this rate case.³⁰

The fact that the previous rate case was 10 years ago,³¹ lends credence to the assumption that a test like this can be good enough for many years into the future. BSI asserts that 10 years is non-responsive to the dynamic nature of what is going on in New Orleans. This rate case is significant.

We should expect a hybrid Residential & CLEP customer class will have a very different peak demand profile from a pure Residential customer class and this will also probably play out among all pairs of hybrid vs non hybrid customer classes.

Rate Cases move like a big ship in the water with minor course adjustments. Utilities are that big ship. However, technology for metering, measuring, controlling, producing, and storing has advanced collectively to the point that the marketplace has solutions ready to be implemented by a Utility willing

²⁸ [Point 8: What are CLEPm and CLEP5 and how do they Extinguish Cross Subsidies, BSI's Initial Post Hearing Brief, page 51.](#)

²⁹ Under cost causation, "all approved rates [must] reflect to some degree the costs actually caused by the customer who must pay them." *K N Energy, Inc. v. FERC*, 968 F.2d 1295, 1300 (D.C. Cir. 1992).

³⁰ "Mr. Baron explained that he does not quarrel with the Advisors' use of a 12CP methodology for cost allocation purposes, but he demonstrates how the Advisors' use of judgmental allocation factors result in the commercial customers being assigned a drastically higher rate of return than the residential customers" CCPUG Brief, page 43.

³¹ Resolution R-09-136, *In the Matter of Entergy New Orleans, Inc.'s Application for a Change in Electric and Gas Rates Pursuant to Council Resolution R-06-459*, Docket No. UD-08-03, Resolution and Order Approving Agreement in Principle, April 2, 2009, at 10., ENO Brief, page 38, footnote 106.

to adopt progressive policies. The Council is encouraged to take the progressive step of requiring the monopoly utility that serves the citizens of NO to embrace technology and make it a more responsive and dynamic servant of the community.

Skewed Assignment of Costs (SAC).

Two intervenors in this rate case assert that they have been unfairly assigned tens of millions of dollars in costs to subsidize and lower the cost-of-service for residential customers.^{32, 33, 34}

\$45 million in 2009³⁵ and proposed to be roughly \$35 million in 2019.³⁶

This violates FERC's cost-causation ruling.³⁷

BSI proposes phasing out SAC over 10 years to avoid rate shock.

BSI's initial Post Hearing Brief proposed elimination of cross-subsidies over 10 years and avoid rate shock for Residential Customers by allowing a CLEP OPT-IN for all customers that would more than compensate for pure residential rate increases.³⁸

CLEP directly lowers its costumers' peaks by design.³⁹

and helps to extinguish cross-subsidies among customers in compliance with FERC's Cost-

³² "The approach taken by ENO to allocate its claimed revenue requirement among customer classes is a step in the right direction of recognizing cost of service, but still leaves Air Products paying about \$2.5 million per year more than it should according to ENO's own cost of service study." APC brief, page 8.

³³ "Cross-subsidization occurs when one set of customers pays in excess of cost and another pays less than cost of service.", CCPUG page 4. Exh. CCPUG-5 (Baron Direct Testimony) (CCPUG)), at 13:2-4.

³⁴ "Unfortunately, however, ENO immediately departed from its Cost of Service Study when designing its proposed rates without any valid reason and in a manner which directly and significantly harms one group of customers in order to benefit another group of customers." CCPUG p.4.

³⁵ "Subsidies under current rates have amounted to roughly \$45 million per year. In other words, ENO's residential customers are currently paying \$45 million per year *less than* the costs ENO incurs to serve that class of customers", CCPUG p. 11.

³⁶ "The going-forward subsidies total more than **\$35 million per year** and those same two classes of commercial customers are expected to contribute **over 47%** of those annual subsidies." CCPUG p. 11.

³⁷ ENO's witnesses freely admit that the allocation of the EAI WBL and River Bend 30% PPA capacity costs does *not* follow cost-causation principles or even its own Cost of Service Study. CCPUG, p. 54.

³⁸ "BSI supports the rolling back of all cross subsidies between rate classes over ten years and to avoid rate shock in the interim, immediately provide for an OPT-in CLEP rate for all customers." BSI Initial Post Hearing Brief, p 28.

³⁹ See Point 8 with BSI Initial Post Hearing Brief, p 52.

Causation ruling of 1992.

1 Intervenor opposes the use of the 12-point CD test in the annual FRP true-up.

Two Intervenor are also opposed to an aspect of the proposed Formula Rate Plan (FRP) that will require repeating the 12-point CD test annually⁴⁰ and thus a “reconsideration” of the current and future SAC in order to annually consider adjusting ENO’s “weighted average” Return on Equity (ROE) and therefore argue that each such FRP “true-up” will turn into a “mini-rate case”. With CLEP this will not be required as the program and equations are integrally responsive to market conditions.

CLEP will help to confuse and ameliorate an FRP.

CLEP ameliorates an FRP because active CLEP customers who lower their peak demand will be mostly shielded from adverse FRP effects.

However, CLEP aggravates the whole notion of an FRP because CLEP will “by design” substantially reshuffle costs driven by a rapidly changing 12-point CD result.

⁴⁰ “The Advisors’ recommendation to update all of the inputs to class cost of service studies, including demand and energy allocation factors that allocate cost among customer classes, during the course of annual FRP reviews is inconsistent with the general concept of FRPs, which are designed to provide an abbreviated and streamlined review of base rate cost recovery. The Advisors’ recommendation would essentially convert the FRP process into “mini” rate cases every year which would make the process unnecessarily complex, expensive, contentious and inefficient. FRPs typically have formulas which specify how any rate adjustments are to be accomplished and apply adjustment as a uniform percentage of base rate revenues, whether there are increases, or decreases” APC page 10.

Closing Statement

BSI's rebuttal assertions to objections listed in reference to objections by the ENO and the Advisors in their 2019 Initial Post Hearing Briefs are laden with errors of fact. ENO is still comparing CLEP's 2016 definition to ENOs state of affairs in 2016—without any recognition that both have changed. Although the Advisors to not make that error, but they do make a litany of errors. As examples, note that the Advisors fail to fully understand that CLEP's definition of Community Solar exceeds the Council's approved way to pay ratepayers for their participation and asserts without evidence that CLEP imposes costs onto other customers. These are typical of BSI's rebuttal assertions to the Advisors many objections; except for one technical definition error that exposed an inconsistency in BSI's Direct Testimony, the Advisor objections are unwarranted and unsubstantiated claims.

Although BSI provides some professional services for a profit, BSI has, *by and large*, operated as if it were a non-for-profit, public-interest corporation and has often been recognized for and chosen by the Council to provide community services⁴¹ since before Hurricane Katrina and in all those cases: BSI has advocated for the City to become a more progressive community with respect to a wide range of energy issues.

Since Katrina, New Orleans is transforming through the medical corridor and realized a substantial increase in residents moving back into the city, warehouse district, and inner city. These kinds of shifts create new demands on the electrical infrastructure and are opportunities for the utility to participate in the development of microgrids and a more reliable infrastructure.

This can be most cost-effectively and most rapidly accomplished through CLEP. The dynamic nature of New Orleans' grid is one demanding a rate structure that is responsive to a changing demand

⁴¹ BSI Direct Testimony, See GET NOPSIS BACK on Lines 11- 15, page 4; Alliance for Affordable Energy on lines 16 -18, p 4., River Bend, lines 18 – 20, p 4, New Orleans Energy Policy Taskforce, lines 7 -10, p 5. 2015 ENO IRP, line 13 – 14, p 15.

and load pattern. It is well known that the composite residential customer class's peak power consumption is higher than the commercial sector. In addition, residential peak times are not coincident with office peaks. This may be helpful overall to the downtown grid. There are many areas of the downtown grid that are being upgraded from a 4.46 KV to a 13.8KV system. This has been required so that ENO has struggled at times to provide power demanded for the expansion of occupancy in the city through high-rise residential construction on streets that previously only accommodated low-rise construction.

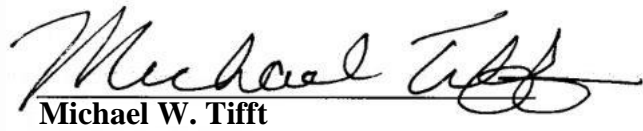
Since Katrina, the Council has worked with FEMA in setting flood-mitigation guidelines to help the residents (the Council's constituents) to find ways to reduce their potential losses and reduce their insurance payments. This example is offered as a similar paradigm-shift much like that provided by CLEP in that CLEP is a rate mechanism to help residents reduce their energy cost and have greater control over their costs and thereby provide a service that reduces strain on existing infrastructure.

Prayer for Relief

BSI respectfully requests that the New Orleans City Council direct Entergy New Orleans, Inc. to

1. Council set up a working group to resolve all the issues that may need to be addressed in implementing CLEP
2. Implement CLEP as two complementary CLEP5 and CLEPm rates and/or tariffs in the form and manner of the formulas set forth in Point 8 of BSI's Initial Post Hearing Brief and across all customer classes in a mandatory fashion.
3. Alternatively, BSI respectfully requests that the Council direct Entergy to implement CLEP as two complementary CLEP5 and CLEPm rates and/or tariffs in the form and manner of the formulas set forth in Point 8 above and to make them available to all customers who desire to avail themselves of CLEP on an OPT-IN basis.
4. Alternatively, BSI respectfully requests that the Council initiate a new docket, or sub-docket, to implement CLEP as soon as practical.

RESPECTFULLY SUBMITTED:



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CERTIFICATE OF SERVICE

I hereby certify that a copy of Building Science Innovators' Reply Post Hearing Brief has been served by electronic mail and/or by U.S. mail, postage prepaid, on all parties on the Official Service List.

A handwritten signature in black ink, appearing to be 'M. T. ...', written over a horizontal line.

New Orleans, Louisiana this 9th day of August 2019

Appendix 1. Table 1 and its full justification from the Direct Testimony

TABLE 1: Cashflows Estimates of Key Retrofits – from Direct Testimony

5

Key Retrofit	annual income		Net Income	Payback (years)	Capital Cost	Annual Rent	CLEPm / CLEP	Peak kW Saved
	ENO	CLEP						
Dishwasher	0	26	26	na	0	0	83%	1/5
Timed Water Heater	0	150	150	0.33	50	0	33%	4/5
Heat Pump Water Heater	372	80	452	0.66	300	0	62%	4/5
Ice-Making AC	330	1040	1370	2.19	3000	0	77%	4
Electric Battery (12 kWh)	0	686	686	14.58	10000	0	87%	3
Community Solar (5 kW)		1175	755	na	0	-420	53%	2
HPWH, Ice Making AC & Electric Battery	702	1806	2508	5.30	13300			

kW of Community Solar in NOLA produces 9125 kWh per year. Dividing \$1175 by 9125 will give the price per kWh; it is \$0.129 per kWh. Dividing that by \$0.11 means CLEP pays 17% higher than Retail.

Citations for entries in Table 1 come from BSI Direct Testimony for each row on pages:

- Dishwasher row can be found on page 27.
- Timed Water Heater row can be found on pages 27 – 28.
- Heat Pump Water Heater row can be found on page 28.
- Ice Making AC row can be found on pages 28 – 29.
- Electric Battery row can be found on pages 29 – 30.
- Community Solar row can be found on page 31.
- HPWH, Ice-Making AC & Electric Battery row can be found on page 33.

Appendix 2. SURREBUTTAL TESTIMONY

**BEFORE THE
COUNCIL FOR THE CITY OF NEW ORLEANS**

**APPLICATION OF ENTERGY NEW)
ORLEANS, LLC FOR A CHANGE IN)
ELECTRIC AND GAS RATES PURSUANT) DOCKET NO. UD-18-07
TO COUNCIL RESOLUTIONS)
R-15-194 AND R-17-504)
AND FOR RELATED RELIEF)
)**

RESPONSE TO

REBUTTAL TESTIMONY

BY

MYRON KATZ, PhD

ON BEHALF OF

BUILDING SCIENCE INNOVATORS, LLC

Q1. Dr. Katz, have you reviewed ENO’s response to the CLEP tariff that you have proposed?

A. Yes, in the portion of Mr. Andrew Owens’ testimony specifically focused on Customer Lowered Electricity Price (“CLEP”), he makes no specific objection or analysis, but instead incorporates by reference all the objections set forth in Council Resolution Nos R-16-106 and R-17-100. The entirety of Mr. Owens’ testimony relative to CLEP is as follows:

“BSI appears to be proposing the same concept that was rejected by the Council in Resolution Nos. R-16-106 and R-17-100. Those Resolutions identified several flaws with the proposed CLEP concept. Based on my review of Dr. Myron Katz’s Direct Testimony, it does not appear that BSI has addressed any of the Council’s previously stated concerns. As such, ENO is opposed to the implementation of BSI’s proposal.” ENO Rebuttal Testimony Andrew Owens + Exhibits, CNO Docket No UD-18-07, March 22, 2019, page 50.

Q2. Have you identified any problems with Mr. Owen’s testimony with regard to CLEP?

A. BSI has identified errors in all objections indirectly asserted by Mr. Owens about the CLEP proposal set forth in BSI’s February 1, 2019 testimony in this docket. Because Mr. Owens claims that all those concerns described in the 2017 resolution continue to be short-comings of the current testimony; they are cited within Council Resolution R-17-100 by page number:

1. “BSI does not explain where this income will come from and whether paying CLEP customers causes rate increases for non-CLEP customers” Council Resolution R-17-100, p 86;
2. CLEP’s description in 2016 was incoherent. Council Resolution R-17-100, p 88;
3. ENO claimed that CLEP’s description in 2016 was “based upon numerous flawed concepts and unrealistic assumptions.” and “BSI provides no rational basis” for key assumptions and assertions. Council Resolution R-17-100, p 90;

4. CLEP “is too complicated for consumers to understand [”] Council Resolution R-17-100, p 91;
5. “BSI makes many assertions as to the costs, capabilities and potential revenues of a community solar project, but does not offer any analysis, testimony or evidence in support of its assertions.” Council Resolution R-17-100, p 93;
6. CLEP inappropriately didn’t adhere to the requirements of Council Resolutions No. R-15-140 or No. R-16-106, the first of which sets requirements for Pilot proposals. Council Resolution R-17-100, p 90;
7. CLEP’s community solar proposal does not provide a funding mechanism. Council Resolution R-17-100, p 92;
8. CLEP “requires an extensive amount of setup for each customer – new metering equipment ...” Council Resolution R-17-100, p 91;

The conditions that prevailed in 2016 are not substantially different from those present in 2019; and CLEP as described in 2016 is not substantially different from its description in 2019.

Because of Mr. Owens’ blanket assertion on March 22, 2019 that CLEP’s description’s from 2016 short-comings as enumerated in Resolution R-17-100, were not remediated by the refined version of CLEP set forth in BSI’s February 1, 2019 filing in this docket nor that other things have changed substantially since 2016 when the earlier filing occurred, there is no need to delve into the wording of the 2016 motions made to promote the three CLEP pilot programs, but instead each answer will be provided through excerpts from the February 1, 2019 testimony and reference to what has changed since then.

Q3. Please explain what is wrong with the statement: “BSI does not explain where this income will come from and whether paying CLEP customers causes rate increases for non-CLEP customers” Council Resolution R-17-100, p 86.

A. BSI notes that neither any intervenor nor the Advisors support this assertion that CLEP’s February 1, 2019 testimony does not explain CLEP well enough nor that CLEP will cause rate increases for non-CLEP customers. In fact, the answer to Q11. HOW DOES CLEP LOWER EVERYBODY’S RATES? occupies five pages in the testimony from pages 22 through 27.

Q4. Please explain what is wrong with the statement: CLEP’s description in 2016 was incoherent. Council Resolution R-17-100, p. 88.

A. Mr. Owens fails to identify any specific problem concerning the refined version of CLEP set forth in BSI’s February 1, 2019 testimony and, in particular, the highly detailed answers to the following specific questions:

Q8. WHAT ARE THE UNDERLYING DEFINITIONS OF CLEP RATES? 11

Q9. WHAT ARE THE CLEP RATES YOU PROPOSE? 16

Q10. HOW IS EACH CLEP RATE CALCULATED? 19

Q11. HOW DOES CLEP LOWER EVERYBODY’S RATES? 22

Q12. WHAT ARE ILLUSTRATIONS OF KEY CLEP APPLICATIONS? 27

Q5. Please explain what is wrong with the statement: “ENO claimed that “CLEP’s description in 2016 was “based upon numerous flawed concepts and unrealistic assumptions.” and “BSI provides no rational basis” for key assumptions and assertions. Council Resolution R-17-100, p. 90.

A. See previous answer.

Q6. Please explain what is wrong with the statement: “CLEP “is too complicated for consumers to understand...” Council Resolution R-17-100, p. 91.

A. See previous two answers.

Q7. Please explain what is wrong with the statement: “BSI makes many assertions as to the costs, capabilities and potential revenues of a community solar project, but does not offer any analysis, testimony or evidence in support of its assertions.” Council Resolution R-17-100, p.93.

A. See previous three answers.

Q8. Please explain what is wrong with the statement: “CLEP inappropriately didn’t adhere to the requirements of Resolution No. R-15-140 or R-16-106, the first of which sets requirements for Pilot proposals.” Council Resolution R-17-100, p. 90’

A. On a fundamental level, Mr. Owens fails to note the essential fact that what BSI proposed in 2016 within Council Docket No. UD-08-02 were three pilot programs whereas what BSI is proposing in the current docket is an optional rate tariff that any ENO customer may choose to utilize. Because BSI is not proposing a pilot program in this docket, ENO’s objections noted in Council Resolution R-17-100 at the top of page 90 2nd paragraph, and the Advisors’ objections noted on page 90 and the middle of page 91 that BSI failed to comply with the requirements for establishing a pilot program (which BSI denies) are completely inapplicable.

Q9. Did BSI’s three pilot applications in 2016 violate any Council Resolutions?

A. No. In fact, only the third of these three assertions referred to in the previous answer made any mention of a Council Resolution requiring more or better data than BSI presented in 2016. In the third citation it is stated that:

“WHEREAS, the Advisors state that the Council has set forth the criteria that any application for a Pilot Program related to the IRP or Energy Smart Program must meet. The Advisors state that in Resolution No. R-15-140, the Council ruled that prior to the implementation of any new pilot program for the Legacy ENO Energy Smart Program, the Companies must file an application with the Council for review and approval that includes”

However, the plain meaning of what the Advisors stated asserts is that Resolution R-15-140 only applies to “prior to the implementation of any new pilot program for the Legacy ENO Energy Smart Program, the Companies must file an application with the Council”. But:

#1 BSI’s CLEP pilot programs were in no way proposed to be for Energy Smart.

#2 BSI is clearly not ENO and thus cannot and should not be assumed to be included in the term “Companies” in the second quoted clause; and

#3 the fact that ENO has this burden decreed by R-15-140 does not cause the same burden upon any other actor.

Q10. Please explain what is wrong with the statement: “CLEP’s community solar proposal does not provide a funding mechanism.” Council Resolution R-17-100, p.92.

A. How CLEP can be applied to community solar is defined on page 17 of BSI’s February 1, 2-19 testimony. An example calculation using CLEP’s community solar formula is provided on page 31 of the February 1, 2019 9 testimony.

Q11. Please explain what is wrong with the statement: “CLEP “requires an extensive amount of setup for each customer – new metering equipment ...” Council Resolution R-17-100, p.91.

A. In 2016, BSI asserted that ENO had many times promised that it would roll out Smart Meters,

(a.k.a. AMI) during the IRP proceedings but this was disputed by both ENO and the Advisors. However, in 2018, the Council approved a roll out of Smart Meters which I understand is proceeding.

Q12. Is it true that the conditions that prevailed in 2017 are not substantially different from those present in 2019?

A. No, the situation has greatly changed since the adoption of Resolutions Nos. R-16-106 and R-17-100, particularly regarding smart meters and community solar. See previous answer regarding Smart Meters. Regarding Community Solar, it is significant to note that Community Solar has been substantially approved by the City Council. In fact, Community Solar is the subject of Mr. Owens' ENO's rebuttal testimony on March 22, 2019 wherein he devotes ten pages to the current rollout of new rules that would govern Community Solar in New Orleans. See pages 34 through page 44. On December 13, 2018, the Utility Committee adopted Resolution R-18-538 but it provided no acceptable funding mechanism. The full Council later adopted the Community Solar resolution but only provided an incomplete funding mechanism, that is: to pay low-income customers the same rate as Net Energy Metering, namely retail price. However, as noted in my direct testimony, CLEP provides a means by which all Community Solar customers can be paid.

Q12. Please explain how the nature and detailed definitions of the CLEP proposal has been refined since the adoption of Council Resolutions Nos R-16-106 and R-17-100?

A. 1) As noted in the February 1, 2019 testimony at page 16, lines 11 through 22, the refined version of CLEP can apply to businesses but CLEP didn't handle business customers in 2016, and
2) The February 1, 2019 testimony sets forth a detailed explanation for the coefficient for CLEPm as "\$50" on pages 12 and 20, instead of the "\$57.60" as stated in 2016 and 2017.

Q13. What is the BSI's response to Mr. Owen's comments regarding Council Resolution NO. R-16-106?

A. Council Resolution NO. R-16-106 was a decision to deny giving BSI extra opportunities outside of filing testimony to describe CLEP within the 2015 ENO Integrated Resource Planning process. Consequently, that resolution has no bearing on the issues arising in this proceeding.

Q14. Does this conclude your testimony?

A. Yes.

Appendix 3. How can “cost-of-energy” and “average cost of electricity ENO incurs” be modelled?

a. How can “cost-of-energy” and “average cost of electricity ENO incurs” be modelled?

Let e = cost-of-energy and C = *cost of electricity ENO incurs*, then define the difference, $D = e - C$. In almost all cases, when its customers buy electricity, ENO makes it or purchases it from MISO. Because ENO is a regulated monopoly, ENO may not profit from purchases from or sales to its customers. Thus, costs and income for electricity ENO incurs are set by or reported by MISO’s prices.⁴² Thus, to a large extent⁴³, ENO’s membership in MISO determines and broadcasts the *cost of electricity*⁴⁴ *ENO incurs*. BSI contends that whether or not $D=0$, ENO’s cost-of-energy should be calculated as the monthly weighted average wholesale price, via:⁴⁵

Let $e = [\sum N_i * w_i - \sum \underline{N}_i * w_i] / [\sum N_i - \sum \underline{N}_i]$ is calculated monthly, where:

N_i is the number of kWhs *purchased* by all ENO customers while the MISO price is w_i and \underline{N}_i is the number of kWhs *sold* at w_i .

Intrinsic to the definition of CLEP5 is the key adjective “*weighted*” in the definition of e that was accidentally omitted from the Direct Testimony. I.e., BSI asserts that ENO’s membership in MISO effectively forces the above definition of e to equal ENO’s “cost-of-energy” and only differs from “the average cost of electricity ENO incurs.” by a very small or almost constant D .

⁴² The principal and perhaps only exception is in the case of NEM, where according to Andrew Owens, roughly 3 million kWh/y, i.e., about 5% of the production of New Orleans’ residents’ rooftop solar (roughly 35 MW a few years ago) is sold to ENO at retail rates — at various times the retail rate is higher than MISO prices. Assuming a conservatively high, weighted average amount of \$0.05 higher than wholesale, the total addition to the cost of energy from these NEM purchases would be less than $(1/20) * \$3 \text{ million/y} = \$150,000/\text{y} = D$.

⁴³ Considering the annual total cost of energy for ENO from all other causes is around \$300 million, D ’s percent of e is about $= 150E3/(300E6) = 1/2E-3 = 0.05\%$.

⁴⁴ Note that the definition of LCOE in this publication from DOE absolutely conflates the *cost-of-energy* with the *cost of electricity production*. <https://www.energy.gov/sites/prod/files/2015/08/f25/LCOE.pdf>

⁴⁵ This formula for e , restated in plain English, merely says: “cost-of-energy = [the sum of the expenses (i.e., from buying) minus the sum of the income (i.e., from selling)] divided by [the number of purchases minus the number of sales].” The subscript i indicates correspondence with the values N_i and w_i . (It could be thought of an “index” into an array of values.)

Appendix 4: Paradoxes of the current Rate Case model that probably apply to virtually all utilities.

FAC is not a pure “cost-of-energy”

FAC, the Fuel Adjustment Clause, is a rider applied to every ENO customer for the purpose of providing “as close as possible” the “cost-of-energy” in the “standard” definition of a residential electricity bill = (# kWh consumed) * (cost-of-energy + cost-of-service). However, FAC is not a pure “cost-of-energy,” because it has some “capital costs” within it, including that for Grand Gulf and possibly a few other similar hybrid energy and capacity electricity charges. One of the expressed goals of this rate case is to remove as much as possible, capital costs from the FAC. Similarly, to add and similarly, for another rider to, remove energy costs from it, so that the new rate structure will have a “purer” cost-of-energy.

In traditional electricity rate cases, capacity assets can be turned off or on at will

In traditional electricity rate cases, capacity assets can be turned off or on at will in order to dispatch electricity in response to changing demand and such assets’ capital costs were the main component to establish both the revenue requirements and the allocation of costs between customer classes.

Renewable Energy Resources disrupt this assumption.

Distributed Energy Resources (DER) whether on the customers’ side of the meter or on the utility’s side generally disrupt this assumption.

Renewable energy (RE) is rapidly displacing traditional generating assets

Renewable energy (RE) from wind and solar is rapidly displacing fossil fuel and nuclear generating assets because they cannot economically compete with RE, even though, RE is not dispatchable.

Distributed Energy Resources (DER) provide more economic value to the grid if installed on the customers' side of the meter

DER provides much more economic value to the grid if installed on the customers' side of the meter and not surprisingly includes variants that have little to no counterpart on the utility side of the meter, including thermal storage, energy efficiency, electric vehicles, etc.

Before CLEP, there was no means to finance most forms of DER;

however, now with CLEP, those parts of DER that were financeable before often get twice the cashflows and many that were not financeable before CLEP, can now be adequately financed with CLEP.

Balancing supply to meet demand as well as accommodating power outages can be more effectively done with DER than alternative assets traditionally found in utilities.

Utilities that ignore these problems are likely to buy more and more assets that will sooner or later become stranded... AND sooner is not unlikely.

When a stranded asset is not borne by the utility, it is borne by ratepayers who have little ability to pay these costs.

Appendix 5: Other issues that can be explored that have practical consequences

An asset that has both energy saving and capacity benefits can and must be analyzed from both the Utility's and Customer's perspective.

How or why does the Grand Gulf (GG) part of the FAC rider sort of belong in a hybrid FAC/Cost-of-Energy rider?

How does Los Angeles Municipal Utility's recent purchase power agreement to buy a hybrid solar array with batteries fit into the same dilemma used to treat GG?

Utilities spurn Net Energy Metering (NEM), because "retail" prices are paid for "wholesale" electricity but when they do that they ignore both i) the fact that sometimes retail prices are lower than wholesale prices, and (ii) the value of avoided demand can more than compensate for the deficiency of wholesale to retail energy pricing. Thus, a wholesale price from a proposed power purchase acquisition (PPA), which is actually higher than the average cost-of-energy over a year, can still lower utility costs. This same effect can happen without a PPA, but, via CLEP, when a customer shifts demand away from peak times and/or sells previously purchased electricity back to the grid on the same day.

A utility benefit by customers' well-orchestrated attempts to lower their energy bills?⁴⁶

Will CLEP extinguish itself?

What will the world be like when CLEP is no longer used and useful?

Can the Earth adequately heal without CLEP?

Myron thinks that this is truly unlikely. But for sure CLEP can really help slow down the causes of Global Warming because ratepayers will pursue their self-interests... That's all CLEP needs to work.

⁴⁶ See BSI Initial Post Hearing Brief Point 5, page 31..