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Harry M. Barton
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October 29, 2019

By Hand Delivery

Ms. Lora W. Johnson, CMC, LMMC
Clerk of Council
Council of the City of New Orleans
Room 1E09, City Hall
1300 Perdido Street
New Orleans, LA 70112

Re: **In Re: 2018 Triennial Integrated Resource Plan of Entergy New Orleans, Inc.
Docket No. UD-17-03**

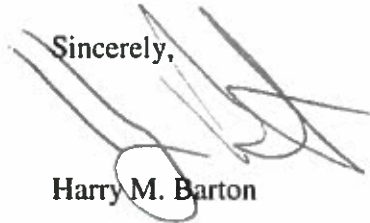
Dear Ms. Johnson:

Entergy New Orleans, LLC (“ENO”) respectfully submits its Reply Comments Concerning the 2018 Integrated Resource Plan Report and Exhibits attached thereto in connection with the above referenced Docket. Please file an original and two copies into the record in the above referenced matter, and return a date-stamped copy to our courier.

The confidential information and documents included with the Reply Comments may be reviewed by appropriate representatives pursuant to the provisions of the Official Protective Order adopted in Council Resolution R-07-432 relative to the disclosure of Highly Sensitive Protected Materials (“HSPM”). As such, these confidential materials are being sent to the appropriate parties via UPS overnight delivery.

Should you have any questions regarding the above, I may be reached at (504) 576-2984. Thank you for your assistance with this matter.

Sincerely,



Harry M. Barton

HMB/bkd
Enclosures

cc: Official Service List (via email)



copy 12/12

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

**EX PARTE: IN RE: 2018 TRIENNIAL)
INTEGRATED RESOURCE PLAN OF) DOCKET NO. UD-17-03
ENERGY NEW ORLEANS, INC.)**

**ENERGY NEW ORLEANS, LLC’S REPLY COMMENTS
CONCERNING THE 2018 INTEGRATED RESOURCE PLAN REPORT**

Energy New Orleans, LLC (“ENO”) respectfully submits its Reply to Comments Concerning the 2018 Integrated Resource Plan (“IRP”) Final Report. Despite robust participation from many parties throughout the 2018 IRP process, only the Alliance for Affordable Energy (“AAE”) submitted comments concerning ENO’s Final IRP Report. Part of the AAE’s comments focus on issues related to the Implementation Plan for Program Years 10-12 of Energy Smart, rather than ENO’s 2018 IRP Report. The procedural schedule in Council Resolution No. R-17-430, as modified by the Order of March 26, 2019, contemplates that ENO will file the Energy Smart Implementation Plan later this year. As such, ENO’s Reply Comments are confined to the limited set of issues raised by the AAE that do not relate to the Energy Smart Implementation Plan.

I. Limited Procedural Background and Related Issues.

The 2018 IRP cycle was conducted under the Council’s newly-revised IRP Rules, which were adopted in Council Resolution Nos. R-17-332 and R-17-429 and resulted from a year-long rulemaking initiated at the request of several parties to the 2015 IRP proceeding. The rulemaking considered many suggestions from several parties as to how the process and scope of the IRP should change in order to provide an optimal resource planning exercise for ENO, New Orleans, and ENO’s electric service customers. Based on the evidentiary record in that proceeding, the Council found that many of the suggested modifications had merit and should be adopted, while also finding that others were beyond the scope of, or would not be beneficial to, the IRP process.

As a result of the modifications and new procedural requirements adopted in that rulemaking, the 2018 IRP cycle has been the most collaboratively conducted IRP to date. This outcome is due, in large part, to the Rules requiring that the parties work to achieve consensus on, and “lock down,” certain inputs and assumptions by specific dates in the process. Indeed, the March 26, 2019 Order required that by December 7, 2018, following Technical Meeting 3, all inputs and assumptions were to be finalized. On December 4, 2018, the Council’s Advisors circulated a summary¹ of the consensus reached as to the Planning Scenarios and Strategies to be modeled for the 2018 IRP. This communication also memorialized the conditions upon which such consensus was reached and solicited any objection from any party to those agreed upon conditions.² No objections were lodged.

Attaining such consensus prior to conducting the modeling for the 2018 IRP greatly improved the efficiency of the Council’s process and has, evidently, significantly narrowed the number of issues about which parties have outstanding concerns as related to the 2018 IRP Report. Indeed, no intervenors or members of the public attended the Third Public Meeting to provide comments on the IRP to the Council and only the AAE filed written comments.

The AAE’s comments do raise one issue that was previously addressed in the rulemaking and in the Technical Meeting process adopted in Resolution No. R-17-430. The AAE complains that the IRP does not consider accelerated resource deactivations of existing units by “allowing

¹ See, Email and attachment from Jay Beatmann, dated December 4, 2018, attached hereto as Exhibit 1.

² These conditions included an agreement that “to the extent that the proposal varies from the Council’s IRP Rules, the Parties to the Docket agreed that any such variance shall not be precedential in any way for future IRP cycles, nor shall such variance serve as the basis for any finding that ENO has failed to comply with the Council’s IRP Rules for the 2018 IRP.” See, Exhibit 1. These conditions were essential to the consensus reached because, as discussed in the IRP Report, the use of two different sets of assumptions related to demand-side management made some of the side-by-side comparisons among portfolios contemplated by the IRP Rules impossible. As such, the parties’ agreement that ENO would not be found in violation of the Rules due to the inability to make such comparisons was key to ENO’s ability to conduct the IRP modeling in the manner memorialized in Exhibit 1.

potentially lower-cost resources to compete and replace inefficient and uneconomic power.”³ First, it should be noted that the AAE provided no evidence to substantiate the assertions that the Grand Gulf Nuclear Station (“GGNS”) or any other resources referenced in their comments are “uneconomic;” but making such assertions without evidentiary support is not unusual for the AAE. The more relevant consideration is that, in the rulemaking, the Council considered and rejected the idea that the deactivation analyses described by the AAE could or should be conducted in the IRP.⁴ Additionally, the AAE and other parties raised this same issue at Technical Meeting 2, wherein several hours of discussion were devoted to explaining why such analyses (i) were purposefully and intentionally rejected from inclusion in the Council’s IRP Rules, (ii) would be beyond the scope of, and increase the cost and time associated with, the IRP, (iii) could not be accommodated by modeling constraints and timelines, and (iv) would ultimately not provide relevant information to the Council to inform its decision making process.

On the last point, various legal issues were discussed, including that Power Purchase Agreements (“PPAs”), tariffs, and rates associated with GGNS and other resources are within the exclusive jurisdiction of the Federal Energy Regulatory Commission (“FERC”).⁵ As such, the requested analyses would not inform and empower effective Council decision-making since the Council cannot order the termination of agreements and rates approved by the FERC.

³ See, AAE Comments at pg. 7. The AAE raises this argument in furtherance of a position being advanced by the AAE and other parties in Council Docket UD-19-01. The AAE’s comments also state that this IRP proceeding can inform “a clear path forward” in Docket UD-19-01. However, comments from the AAE filed in UD-19-01 “disagree that ENO’s 2018 IRP should be used as a baseline for the Council’s RPS.” See, Energy Future New Orleans Coalition’s October 15, 2019 filing in Council Docket UD-19-01, at pg. 11. The AAE offers no explanation for these conflicting statements.

⁴ See, Council Resolution No. R-17-429, at pg. 26 (“[T]he Council agrees that requiring the type of analysis performed for resource retirement proceedings to be performed for every portfolio considered in an IRP process would be unduly burdensome and create a proceeding that would consume an unreasonable amount of resources.”).

⁵ The specific legal underpinnings of FERC’s exclusive jurisdiction over such matters, as determined by the United States Supreme Court in a case involving GGNS (*Mississippi Power & Light Co. v. Mississippi ex rel. Moore*, 487 U.S. 354, 375; 108 S.Ct. 2428, 2441; 101 L.Ed.2d 322 (1988)) was also explained in greater detail in a filing made by ENO in Council Docket No. UD-19-01 on July 15, 2019, at pgs. 17-19.

II. Demand-Side Management (“DSM”) Issues.

The remainder of the AAE’s substantive comments relate to issues involving the DSM potential studies and the Energy Smart Implementation Plan that ENO is required to file on or before December 7, 2019 (but which ENO has committed to file by November 22, 2019).

The AAE suggests that Navigant’s methodology for calibrating its model to Energy Smart Program Year 8 projected savings was unreasonably conservative.⁶ The AAE appears to have misunderstood Navigant’s approach on this point; Navigant did not “assess the accuracy of its estimate based on the amount of savings that has been historically achieved,” but rather considered actual historical results as well as the PY8 target in evaluating achievable potential. A detailed discussion of the methodology is included on pages 57-58 of the Navigant Potential Study (attached as Exhibit D of the IRP Report).

The AAE questions why the Navigant study did not include Conservation Voltage Reduction (“CVR”) as an energy efficiency measure while the Optimal study did. Navigant did not include CVR in its study because CVR is a grid-level measure that attempts to address voltage issues on the distribution grid, not a program that incents participating customers to increase energy efficiency at a particular service location. The Council’s Energy Smart program provides incentives to individual customers for installing measures in their home or business (such as insulation or A/C tune ups). It is worth noting that CVR is not included in the New Orleans Technical Resource Manual (“NOTRM”), which served as the main source of energy efficiency measures for the DSM potential studies, likely because it is not a customer-directed measure.

The AAE raises other questions concerning how the results of the potential studies were incorporated into the optimized portfolios. On the topic of ramp-up periods and rates for the programs a table of the annual MW reductions to peak and annual program cost associated with

⁶ AAE Comments, at p. 3-4.

all DSM programs selected in the five optimized portfolios is attached hereto as Exhibit 2. The annual MWh reduction attributed to the energy efficiency programs included in the optimized portfolios is detailed in the attached Exhibit 3. Finally, the overall peak reductions in the portfolios are lower than the total potential identified in the cases in the two studies because the Aurora model selects the DSM programs at the ENO peak hour which in some cases reflect less savings than the total potential identified generally in the studies.

The AAE notes that ENO included a Load and Capability table in the 2015 Final IRP. A similar table representing Load and Capability assumed in ENO's Business Plan 2019, which served as the basis for the assumptions and inputs used in modeling for the 2018 IRP, is attached hereto as Exhibit 4.

III. Conclusion.

ENO hopes that the above responses and attached Exhibits adequately address the AAE's concerns and looks forward to working with the Advisors, the AAE, and other stakeholders on the implementation of Program Years 10-12 of the Energy Smart program.

Respectfully submitted:



BY:

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**ATTORNEYS FOR ENERGY
NEW ORLEANS, LLC**

Dennis, Brittany Kiara.

From: Beatmann, Jay <jay.beatmann@dentons.com>
Sent: Tuesday, December 04, 2018 3:08 PM
To: lwjohnson@nola.gov; espears@nola.gov; Bobbie F. Mason; Connolly A. Reed (careed@nola.gov); David S. Gavlinski (dsgavlinski@nola.gov) (dsgavlinski@nola.gov); sunni.lebeouf@nola.gov; Norman L. White; Jeffrey S. Gulin (judgegulin@gmail.com); Vince, Clinton A.; Reed, Jr., Presley R.; Gomez, Herminia; Basile J. Uddo (buddo@earthlink.net); Beatmann, Jay; Phil Movish (pmovish@ergconsulting.com); vprep@ergconsulting.com; jrogers@ergconsulting.com; 'Cortney Crouch'; Errol Smith; HUNTLEY, GARY E; ROSEMOND, POLLY S; Mills, Derek; Cureington, Seth; WOOD, KEITH; CRAGIN, TIMOTHY S; Guillot, Brian; MAURICE-ANDERSON, ALYSSA; Barton, Harry M; FREESE, KAREN H; Romano III, Joseph J; Fontan, Suzanne M; Perrault, Therese; Renate Heurich (350louisiana@gmail.com); Andy Kowalczyk (a.kowalczyk350no@gmail.com); Benjamin Quimby (benjaminquimby1@gmail.com); Logan Atkinson Burke (logan@all4energy.org); regulatory@all4energy.org; Mark Zimmerman (zimmermr@airproducts.com); Maurice Brubaker (mbrubaker@consultbai.com); 'mwisznia@wisznia.com'; 'dweiner@wisznia.com'; 'amays@tulane.edu'; 'mgonzalez@enterprisecommunity.org'; 'Casius Pealer'; Luke F. Piontek (Lpiontek@roedelparsons.com); jsulzer@roedelparsons.com; 'yourgreaterway@outlook.com'; 'Andreashoffmann@greenlightneworleans.org'; 'nathan@nolawater.org'; 'brady@saveourlake.org'; 'miriam@waterworksla.com'; jrichards@eskewdumezripple.com; amorton@mathesbrierre.com; pomenville@aianeworleans.org; Jeff Cantin (jcantin@gsreia.org); 'moniquecovharden@gmail.com'; amorris@gnoha.org; twebb@gnoha.org; bgalante@posigen.com; Ben Norwood (bnorwood@posigen.com); 'Katherine@aem-alliance.org'; mcdonald@optenergy.com; loiter@optenergy.com; Andrew Tuozzolo (avtuozzolo@nola.gov); Hand, Emma F.; McGill, Dee; carrie.tournillon@keanmiller.com; katherine.king@keanmiller.com; randy.young@keanmiller.com
Subject: IRP Technical Meeting 3 Follow-up
Attachments: UD-17-03 - Technical Meeting 3 - Strategy and Scenario Consensus Summary....pdf

EXTERNAL SENDER. DO NOT click links, or open attachments, if sender is unknown, or the message seems suspicious in any way. DO NOT provide your user ID or password.

Parties to the 2018 IRP Docket (UD-17-03),

On November 28, 2018, the Third Technical Meeting of the Parties was held. The Meeting's purpose was, in part, to finalize the inputs, assumptions, Planning Scenarios and Planning Strategies that will be used for modeling in the 2018 IRP. The Council's procedural schedule requires that these items be finalized on or before December 7, 2018.

At the Technical Meeting the Parties in attendance, or represented by proxy, agreed to a proposal that ENO would model 3 Scenarios and 5 Strategies for the 2018 IRP. The attached slides summarize the Scenarios and Strategies agreed to by the Parties. This proposal is considered to be consistent with the minimum requirements set forth in the existing IRP rules by all of the Parties that participated in technical conference Number 3. The various aspects of the proposal are as follows:

1. IRP Rule 7(C) requires that "the Utility shall develop three to four Planning Scenarios." As the attached slides indicate, the Parties agreed to two Scenarios developed by the Utility (ENO) and one Scenario developed by Stakeholders.

2. IRP Rule 7(D) states that “the Utility shall identify two to four Planning Strategies.” As the attached slides reflect, the Parties agreed that ENO shall model five Strategies.

3. IRP Rule 7(D)(2) requires that the Utility develop a Stakeholder Strategy and a Utility Reference Planning Strategy. As the attached slides indicate, ENO has agreed to forego development of a separate Utility Reference Planning Strategy and, instead treat the Least Cost Planning Strategy as the Utility Reference Planning Strategy. In part, this is the case due to the Advisors’ request, which was agreed to by all parties participating in Technical Meeting Number 3, that several Strategies be devoted to modeling different sets of DSM inputs.

The Parties’ agreement to the proposal of using Scenarios and Strategies in the attached slides is conditioned upon an agreement that, to the extent that the proposal varies from the Council’s IRP Rules, the Parties to the Docket agreed that any such variance shall not be precedential in any way for future IRP cycles, nor shall such variance serve as the basis for any finding that ENO has failed to comply with the Council’s IRP Rules for the 2018 IRP.

To the extent that any Party has an objection to the agreement reached at Technical Meeting 3, or believes that some aspect of that agreement differs from what is summarized above summary, or the attachment, the Advisors request that such objection or clarification be made via a reply to this message on or before December 6, 2018.

Thank you.



Jay Beatmann

Counsel

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Planning Strategies—Agreed to at Technical Meeting 3

	Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5
Objective	Least Cost Planning	0.2/2% DSM Goal	Optimal Program Achievable DSM	Navigant High DSM	Stakeholder Strategy
Capacity Portfolio Criteria and Constraints	Meet 12% Long-term Planning Reserve Margin (PRM) target using least-cost resource portfolio	Include a portfolio of DSM programs that meet the Council’s stated 2% goal	Meet peak load need + 12% PRM target using Optimal Program Level DSM and resources selected by model	Meet peak load need + 12% PRM target using Navigant High Case DSM and resources selected by model	Meet peak load need + 12% PRM target using DSM, renewables, and energy storage resources
Description	Assess demand- and supply-side alternatives to meet projected capacity needs with a focus on total relevant supply costs	Assess portfolio of DSM programs that meet Council’s stated 0.2/2% goal along with consideration of additional supply-side alternatives	Assess portfolio of DSM programs from Optimal Program Achievable case along with consideration of additional supply-side alternatives	Assess portfolio of DSM from Navigant High case along with consideration of additional supply-side alternatives	Assess demand- and supply-side alternatives to meet projected capacity needs with a focus on adding renewables and storage
DSM Input Case	Navigant Base (Optimized)	Navigant 2%	Optimal Program Achievable	Navigant High	Optimal Program Achievable (Optimized, if needed inputs provided)

Planning Scenarios – Agreed to at Technical Meeting 3

	Scenario 1 (Moderate Change)	Scenario 2 (Customer Driven)	Scenario 3 (Stakeholder)
Peak Load & Energy Growth	Medium	High	Low
Natural Gas Prices	Medium	Low	High
Market Coal & Legacy Gas Deactivations	60 years	55 years	50 years
Magnitude of Coal & Legacy Gas Deactivations ¹	17% by 2028 57% by 2038	31% by 2028 73% by 2038	46% by 2028 76% by 2038
MISO Market Additions Renewables / Gas Mix	34% / 66%	25% / 75%	50%/50% ²
CO ₂ Price Forecast	Medium	Low	High (start 2022)

1. "Magnitude of Coal & Legacy Gas Deactivation" driven by "Market Coal and Legacy Gas deactivation" assumptions (e.g. 55 Years; 31%/73%) for BP19
2. Includes storage to support market LMPs

All values reflected in \$MM

Scenario 1: Strategy 1

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	-	-	-	-	-	-	-	-	-	-	-	0.70	0.79	0.87	0.94	1.00	1.07	1.13	1.18	1.24
HPwES	3.35	3.66	3.67	3.84	3.79	4.03	4.25	4.46	4.72	5.26	5.39	6.34	6.30	6.30	6.29	6.18	6.12	6.04	5.86	5.76
HVAC	0.68	0.76	0.79	0.85	0.88	0.96	1.03	1.09	1.17	1.41	1.50	1.79	1.79	1.80	1.80	1.78	1.76	1.74	1.69	1.66
Low Income & Multi Family	2.60	2.91	2.91	3.04	3.01	3.21	3.39	3.55	3.76	4.16	4.28	5.21	5.23	5.23	5.22	5.13	5.07	5.00	4.85	4.77
Res Behavior	0.02	0.13	0.11	0.10	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
School Kits	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05
C&I EE																				
Com Behavior	0.14	0.15	0.36	0.38	0.42	0.55	0.62	0.67	0.70	1.14	1.31	1.40	1.44	1.43	1.38	1.32	1.25	1.15	1.04	0.97
Large C&I	4.10	4.07	4.32	4.34	4.51	4.91	5.22	5.29	5.44	6.05	5.79	5.67	5.52	5.39	5.04	5.15	5.16	4.94	4.69	4.61
Small C&I	1.37	1.40	1.53	1.57	1.65	1.82	1.99	2.03	2.10	2.33	2.25	2.21	2.18	2.13	2.00	2.01	2.02	1.93	1.82	1.78
Demand Response																				
DLC-Thermostat-HVAC	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.05	0.06	0.12	0.08	0.09	0.10	0.12	0.12	0.13	0.15	0.18	0.18
Dynamic Pricing w/o enabling tech.	-	-	0.34	0.40	0.57	0.61	0.29	0.10	0.12	0.09	0.14	0.12	0.11	0.13	0.12	0.12	0.12	0.11	0.12	0.12
Dynamic Pricing with enabling tech.	-	-	0.08	0.08	0.10	0.10	0.06	0.07	0.07	0.11	0.06	0.08	0.10	0.08	0.10	0.10	0.11	0.12	0.11	0.12
DLC-Switch-HVAC	0.12	0.11	0.15	0.17	0.12	0.09	0.09	0.10	0.10	0.10	0.21	0.19	0.23	0.24	0.22	0.16	0.16	0.18	0.26	0.20
C&I Curtailment- Manual HVAC Control	0.09	0.09	0.13	0.18	0.20	0.20	0.20	0.20	0.20	0.19	0.23	0.19	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17
Total																				
Total DSM	12.30	13.13	13.75	14.18	14.40	15.62	16.64	17.25	18.05	20.51	20.68	23.52	23.45	23.34	22.86	22.75	22.65	22.11	21.31	20.97
Total DR	0.24	0.21	0.73	0.86	1.02	1.03	0.68	0.51	0.53	0.55	0.77	0.65	0.71	0.74	0.73	0.68	0.69	0.72	0.83	0.79

Scenario 1: Strategy 2

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	1.69	2.29	2.71	4.03	4.36	6.64	7.08	7.16	6.98	6.45	5.72	4.90	4.04	3.27	2.63	2.09	1.68	1.38	1.13	0.92
HPwES	4.27	6.00	7.49	11.20	13.30	20.00	22.40	22.30	21.79	20.07	17.98	15.78	13.47	11.36	9.60	8.04	6.89	6.12	5.34	4.62
HVAC	0.96	1.42	1.83	2.82	3.90	6.51	7.32	7.30	7.25	6.73	6.15	5.61	5.04	4.51	4.07	3.68	3.45	3.27	3.09	2.88
Low Income & Multi Family	3.68	5.21	6.50	9.57	11.54	17.31	18.87	18.72	18.26	17.08	15.31	13.51	11.61	9.88	8.43	7.15	6.22	5.52	4.87	4.25
Res Behavior	0.03	0.15	0.14	0.13	0.12	0.13	0.13	0.12	0.12	0.11	0.09	0.09	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.04
School Kits	0.05	0.07	0.08	0.10	0.10	0.12	0.12	0.11	0.11	0.09	0.08	0.06	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02
C&I EE																				
Com Behavior	0.19	0.60	1.07	1.39	2.75	4.01	4.31	4.34	4.15	3.77	3.30	2.77	2.28	1.82	1.43	1.11	0.87	0.70	0.56	0.44
Large C&I	4.52	6.09	7.77	10.05	11.23	14.81	15.07	15.09	14.86	14.24	14.49	13.67	12.70	11.35	10.19	9.07	7.99	7.68	6.94	6.31
Small C&I	1.62	2.27	2.95	3.83	4.26	5.73	5.90	5.96	5.90	5.73	5.72	5.34	4.99	4.44	4.03	3.55	3.10	3.10	2.81	2.57
Demand Response																				
DLC-Thermostat-HVAC	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.05	0.06	0.12	0.08	0.09	0.10	0.12	0.12	0.13	0.15	0.18	0.18
Dynamic Pricing w/o enabling tech.	-	-	0.34	0.40	0.57	0.61	0.29	0.10	0.12	0.09	0.14	0.12	0.11	0.13	0.12	0.12	0.12	0.11	0.12	0.12
Dynamic Pricing with enabling tech.	-	-	0.08	0.08	0.10	0.10	0.06	0.07	0.07	0.11	0.06	0.08	0.10	0.08	0.10	0.10	0.11	0.12	0.11	0.12
DLC-Switch-HVAC	0.12	0.11	0.15	0.17	0.12	0.09	0.09	0.10	0.10	0.10	0.21	0.19	0.23	0.24	0.22	0.16	0.16	0.18	0.26	0.20
C&I Curtailment- Manual HVAC Control	0.09	0.09	0.13	0.18	0.20	0.20	0.20	0.20	0.20	0.19	0.23	0.19	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17
Total																				
Total DSM	17.02	24.10	30.53	43.11	51.57	75.25	81.20	81.10	79.43	74.28	68.84	61.73	54.25	46.74	40.47	34.78	30.28	27.85	24.80	22.03
Total DR	0.24	0.21	0.73	0.86	1.02	1.03	0.68	0.51	0.53	0.55	0.77	0.65	0.71	0.74	0.73	0.68	0.69	0.72	0.83	0.79

Scenario 1: Strategy 5

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Home Energy Services	2.78	5.44	7.27	9.41	9.23	9.23	9.20	9.12	9.18	9.38	1.05	1.42	1.72	1.99	1.96	2.33	2.31	2.31	2.65	2.65
Res HVAC	1.22	2.43	3.68	5.02	5.41	6.15	6.76	7.21	7.80	8.23	3.85	4.01	4.12	4.20	4.24	4.31	4.34	4.38	4.44	4.48
Res Efficient Products	0.17	0.37	0.62	0.99	1.38	1.94	2.41	2.74	2.94	3.07	2.22	2.39	2.55	2.71	2.75	2.81	2.84	2.87	2.93	2.96
Res Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Efficient New Homes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Appliance Recycling	0.20	0.41	0.61	0.83	0.91	0.98	1.02	1.05	1.07	1.07	0.29	0.32	0.34	0.37	0.37	0.38	0.38	0.38	0.39	0.39
CVR - Res	0.08	0.15	0.23	0.32	0.35	0.37	0.37	0.37	0.37	0.37	0.10	0.10	0.11	0.11	0.11	0.12	0.11	0.11	0.12	0.12
C&I EE																				
Small Business DI	0.29	0.58	0.89	1.20	1.22	1.22	1.22	1.21	1.19	1.18	0.27	0.45	0.60	0.80	0.80	0.83	0.85	0.85	0.86	0.86
Commercial Prescriptive	0.21	0.48	0.96	1.67	2.24	2.78	3.01	3.18	3.26	3.31	2.56	2.83	3.02	3.32	3.35	3.47	3.50	3.52	3.52	3.52
Commercial Custom	0.73	1.47	2.25	3.05	3.10	3.22	3.25	3.28	3.29	3.30	0.45	0.56	0.64	1.61	1.60	2.38	2.38	2.37	2.35	2.34

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Retrocommissioning		0.56	1.12	1.70	2.31	2.35	2.40	2.43	2.44	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43
New Construction		0.00	0.01	0.02	0.04	0.07	0.10	0.12	0.13	0.14	0.15	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
CVR - C&I		0.04	0.08	0.12	0.17	0.18	0.18	0.19	0.19	0.20	0.20	0.20	0.05	0.07	0.08	0.11	0.10	0.11	0.11	0.11	0.11
Demand Response																					
Res DLC/ADR		0.21	0.34	0.47	0.59	0.70	0.81	0.90	0.98	1.05	1.10	1.16	1.20	1.24	1.27	1.29	1.31	1.33	1.34	1.35	1.35
Res pricing - PTR		0.25	0.28	0.32	0.37	0.41	0.46	0.50	0.55	0.59	0.63	0.67	0.70	0.73	0.75	0.77	0.78	0.78	0.78	0.78	0.78
Large Cust SOP		0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36	0.41	0.43	0.45	0.47	0.49	0.52	0.54	0.56	0.58	0.61	0.63
Total																					
Total DSM		6.29	12.54	18.36	25.01	26.45	28.56	29.98	30.93	31.88	32.68	11.58	13.32	14.78	17.30	17.36	18.86	18.95	19.01	19.51	19.59
Total DR		0.49	0.70	0.91	1.11	1.31	1.51	1.68	1.85	2.00	2.14	2.25	2.35	2.44	2.51	2.58	2.63	2.67	2.70	2.73	2.76

Scenario 2: Strategy 4

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Residential EE																					
Consumer Products		2.15	2.30	2.15	2.28	2.49	2.63	2.76	2.87	2.99	3.13	3.16	3.25	3.19	3.12	3.04	2.91	2.77	2.63	2.45	2.32
HPwES		5.57	6.04	6.18	6.59	6.79	7.21	7.59	7.90	8.23	9.63	9.70	10.52	10.28	10.01	9.68	9.23	8.82	8.36	7.82	7.41
HVAC		1.17	1.29	1.37	1.48	1.58	1.71	1.82	1.92	2.01	2.71	2.91	3.21	3.20	3.16	3.09	2.98	2.89	2.77	2.63	2.53
Low Income & Multi Family		4.62	5.08	5.21	5.56	5.79	6.16	6.49	6.76	7.04	8.33	8.45	8.95	8.85	8.60	8.30	7.90	7.54	7.14	6.67	6.31
Res Behavior		0.02	0.13	0.11	0.10	0.09	0.10	0.09	0.09	0.10	0.10	0.10	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10
School Kits		0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.04
C&I EE																					
Com Behavior		0.18	0.20	0.47	0.51	0.56	0.73	0.83	0.89	0.94	1.54	1.77	1.89	1.92	1.89	1.81	1.71	1.59	1.45	1.30	1.20
Large C&I		5.91	5.97	6.28	6.40	6.60	7.18	7.65	7.74	7.93	8.65	8.22	8.00	7.70	7.47	6.86	7.13	7.10	6.73	6.34	6.22
Small C&I		1.90	1.97	2.14	2.22	2.31	2.54	2.79	2.85	2.93	3.19	3.06	2.99	2.94	2.86	2.64	2.69	2.71	2.57	2.40	2.34
Demand Response																					
DLC-Thermostat-HVAC		0.03	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.13	0.09	0.10	0.11	0.13	0.14	0.16	0.17	0.21	0.22
Dynamic Pricing w/o enabling tech.		-	-	0.34	0.40	0.57	0.61	0.29	0.10	0.12	0.09	0.14	0.12	0.11	0.13	0.12	0.12	0.11	0.12	0.12	0.12
Dynamic Pricing with enabling tech.		-	-	0.08	0.08	0.10	0.10	0.06	0.07	0.07	0.11	0.06	0.08	0.10	0.08	0.10	0.10	0.11	0.12	0.11	0.12
DLC-Switch-HVAC		0.12	0.11	0.17	0.19	0.13	0.10	0.11	0.11	0.11	0.12	0.23	0.21	0.26	0.27	0.24	0.18	0.19	0.20	0.29	0.24
C&I Curtailment- Manual HVAC Control		0.10	0.10	0.17	0.24	0.26	0.26	0.26	0.25	0.25	0.25	0.28	0.24	0.24	0.23	0.23	0.23	0.22	0.22	0.22	0.21
Total																					
Total DSM		21.58	23.04	23.97	25.21	26.28	28.33	30.08	31.09	32.23	37.36	37.45	39.00	38.26	37.29	35.59	34.69	33.57	31.79	29.74	28.47
Total DR		0.25	0.23	0.78	0.93	1.10	1.10	0.75	0.59	0.61	0.63	0.85	0.74	0.80	0.83	0.82	0.77	0.79	0.82	0.95	0.90

Scenario 3: Strategy 3 (Scenario 3: Strategy 5)

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Residential EE																					
Home Energy Services		2.78	5.44	7.27	9.41	9.23	9.23	9.20	9.12	9.18	9.38	1.05	1.42	1.72	1.99	1.96	2.33	2.31	2.65	2.65	
Res HVAC		1.22	2.43	3.68	5.02	5.41	6.15	6.76	7.21	7.80	8.23	3.85	4.01	4.12	4.20	4.24	4.31	4.34	4.38	4.44	4.48
Res Efficient Products		0.17	0.37	0.62	0.99	1.38	1.94	2.41	2.74	2.94	3.07	2.22	2.39	2.55	2.71	2.75	2.81	2.84	2.87	2.93	2.96
Res Lighting		0.16	0.37	0.70	0.54	0.40	0.40	0.40	0.40	0.40	0.40	0.11	0.18	0.26	0.34	0.34	0.35	0.35	0.35	0.35	0.36
Efficient New Homes		0.01	0.04	0.10	0.24	0.47	0.69	0.83	0.89	0.91	0.92	0.83	0.83	0.84	0.85	0.85	0.85	0.86	0.86	0.87	0.88
Appliance Recycling		0.20	0.41	0.61	0.83	0.91	0.98	1.02	1.05	1.07	1.07	0.29	0.32	0.34	0.37	0.37	0.38	0.38	0.38	0.39	0.39
CVR - Res		0.08	0.15	0.23	0.32	0.35	0.37	0.37	0.37	0.37	0.37	0.10	0.10	0.11	0.11	0.11	0.12	0.11	0.11	0.12	0.12
C&I EE																					
Small Business DI		0.29	0.58	0.89	1.20	1.22	1.22	1.22	1.21	1.19	1.18	0.27	0.45	0.60	0.80	0.80	0.83	0.85	0.85	0.86	0.86
Commercial Prescriptive		0.21	0.48	0.96	1.67	2.24	2.78	3.01	3.18	3.26	3.31	2.56	2.83	3.02	3.32	3.35	3.47	3.50	3.52	3.52	3.52
Commercial Custom		0.73	1.47	2.25	3.05	3.10	3.22	3.25	3.28	3.29	3.30	0.45	0.56	0.64	1.61	1.60	2.38	2.38	2.37	2.35	2.34
Retrocommissioning		0.56	1.12	1.70	2.31	2.35	2.40	2.43	2.44	2.44	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.01
New Construction		0.00	0.01	0.02	0.04	0.07	0.10	0.12	0.13	0.14	0.15	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
CVR - C&I		0.04	0.08	0.12	0.17	0.18	0.18	0.19	0.19	0.20	0.20	0.05	0.07	0.08	0.11	0.10	0.11	0.11	0.11	0.11	0.11
Demand Response																					
Res DLC/ADR		0.21	0.34	0.47	0.59	0.70	0.81	0.90	0.98	1.05	1.10	1.16	1.20	1.24	1.27	1.29	1.31	1.33	1.34	1.35	1.35
Res pricing - PTR		0.25	0.28	0.32	0.37	0.41	0.46	0.50	0.55	0.59	0.63	0.67	0.70	0.73	0.75	0.77	0.78	0.78	0.78	0.78	0.78
Large Cust SOP		0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36	0.41	0.43	0.45	0.47	0.49	0.52	0.54	0.56	0.58	0.61	0.63
Total																					
Total DSM		6.46	12.94	19.16	25.79	27.31	29.65	31.21	32.21	33.18	34.00	12.51	14.34	15.88	18.49	18.54	20.06	20.15	20.22	20.73	20.82
Total DR		0.49	0.70	0.91	1.11	1.31	1.51	1.68	1.85	2.00	2.14	2.25	2.35	2.44	2.51	2.58	2.63	2.67	2.70	2.73	2.76

All values reflected in MWs

Scenario 1: Strategy 1

Residential grossed up for Reserve Margin	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	-	-	-	-	-	-	-	-	-	-	-	0.31	0.61	0.95	1.28	1.58	1.91	2.25	2.60	3.08
HPwES	2.73	4.17	5.65	7.15	8.51	9.89	11.05	12.69	14.47	13.79	15.10	18.81	17.65	22.78	24.43	21.62	22.85	23.94	25.11	29.16
HVAC	0.70	1.09	1.54	2.01	2.52	3.05	3.63	4.22	4.82	3.94	4.45	7.17	5.52	8.63	9.35	6.97	7.40	7.78	8.18	11.52
Low Income & Multi Family	2.27	3.58	4.85	6.13	7.33	8.57	9.52	10.98	12.63	11.73	12.86	16.53	15.21	19.63	21.10	18.73	19.81	20.80	21.83	25.52
Res Behavior	0.04	0.27	0.33	0.35	0.38	0.44	0.48	0.51	0.58	0.58	0.57	0.82	0.74	0.94	1.05	0.95	1.02	1.13	1.21	1.44
School Kits	0.05	0.07	0.09	0.12	0.14	0.16	0.19	0.22	0.24	0.27	0.26	0.29	0.28	0.33	0.34	0.33	0.34	0.36	0.37	0.41
C&I grossed up for Reserve Margin																				
Com Behavior	0.17	0.26	0.82	1.03	1.26	1.66	2.09	2.53	2.98	4.02	5.09	6.47	7.22	8.56	9.52	9.91	10.64	11.25	11.84	13.59
Large C&I	5.48	8.11	10.89	13.76	16.78	19.82	21.94	25.17	29.49	29.06	31.61	36.58	36.26	43.41	45.69	42.38	44.14	45.64	47.25	54.45
Small C&I	1.77	2.69	3.70	4.78	5.96	7.18	8.50	9.82	11.13	12.06	13.21	14.75	15.40	17.01	18.00	18.24	19.03	19.69	20.39	22.33
Demand Response																				
DLC-Thermostat-HVAC	0.13	0.40	0.91	1.44	1.75	1.90	2.11	2.46	2.83	3.25	3.75	4.21	4.72	5.25	6.21	6.84	7.46	8.08	9.61	10.24
Dynamic Pricing w/o enabling tech.	-	-	0.11	0.94	3.73	8.40	10.33	10.12	9.98	9.73	9.70	9.61	9.47	9.41	9.31	9.22	9.11	9.00	8.90	8.80
Dynamic Pricing with enabling tech.	-	-	0.03	0.29	1.16	2.54	3.23	3.66	4.05	4.71	4.92	5.24	5.65	5.90	6.24	6.56	6.85	7.18	7.41	7.64
DLC-Switch-HVAC	0.39	1.18	2.37	3.58	4.00	4.02	4.03	4.10	4.13	4.18	4.35	4.44	4.55	4.67	5.13	5.33	5.52	5.72	6.52	6.74
C&I Curtailment- Manual HVAC Control	0.20	0.60	1.20	1.78	1.94	1.89	1.85	1.80	1.75	1.69	1.64	1.58	1.53	1.47	1.42	1.37	1.32	1.28	1.24	1.20
Total																				
Total DSM	13.19	20.24	27.87	35.34	42.88	50.77	57.39	66.13	76.35	75.45	83.15	101.73	98.89	122.24	130.77	120.70	127.14	132.83	138.78	161.51
Total DR	0.73	2.18	4.61	8.03	12.57	18.75	21.55	22.13	22.74	23.56	24.36	25.08	25.92	26.70	28.33	29.32	30.26	31.26	33.67	34.61

Scenario 1: Strategy 2

Residential grossed up for Reserve Margin	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	1.11	1.65	2.06	2.48	2.93	3.38	3.86	4.35	4.85	5.23	5.68	6.36	6.66	7.33	7.82	8.04	8.46	8.84	9.25	9.66
HPwES	3.38	5.19	7.09	9.04	10.89	12.78	13.50	15.54	18.98	17.35	18.96	23.28	22.40	28.80	30.67	26.88	28.17	29.26	30.42	35.43
HVAC	0.86	1.36	1.93	2.54	3.20	3.89	4.49	5.36	6.15	5.10	5.84	9.15	7.29	11.39	12.30	9.12	9.63	10.06	10.50	14.96
Low Income & Multi Family	2.80	4.42	6.04	7.71	9.34	11.02	11.95	13.81	16.48	15.31	16.83	20.99	19.96	25.58	27.29	24.03	25.20	26.21	27.26	31.95
Res Behavior	0.04	0.27	0.33	0.35	0.38	0.44	0.48	0.51	0.58	0.58	0.57	0.82	0.74	0.94	1.05	0.95	1.02	1.13	1.21	1.46
School Kits	0.04	0.06	0.09	0.11	0.13	0.15	0.18	0.20	0.23	0.25	0.25	0.30	0.29	0.34	0.36	0.34	0.35	0.36	0.38	0.42
C&I grossed up for Reserve Margin																				
Com Behavior	1.97	3.98	5.92	7.78	9.56	11.25	12.66	13.91	15.00	15.96	16.80	17.53	18.14	18.66	19.10	19.45	19.72	19.93	20.08	20.17
Large C&I	4.95	5.69	6.49	7.33	8.21	9.11	10.03	10.93	11.80	12.63	13.39	14.06	14.62	15.06	15.36	15.51	15.51	15.51	15.51	15.51
Small C&I	1.05	2.12	3.19	4.27	5.36	6.46	7.56	8.67	9.77	10.89	11.48	12.07	12.65	13.24	13.84	14.45	15.04	15.65	16.26	16.87
Demand Response																				
DLC-Thermostat-HVAC	0.13	0.40	0.91	1.44	1.75	1.90	2.11	2.46	2.83	3.25	3.75	4.21	4.72	5.25	6.21	6.84	7.46	8.08	9.61	10.24
Dynamic Pricing w/o enabling tech.	-	-	0.11	0.94	3.73	8.40	10.33	10.12	9.98	9.73	9.70	9.61	9.47	9.41	9.31	9.22	9.11	9.00	8.90	8.80
Dynamic Pricing with enabling tech.	-	-	0.03	0.29	1.16	2.54	3.23	3.66	4.05	4.71	4.92	5.24	5.65	5.90	6.24	6.56	6.85	7.18	7.41	7.64
DLC-Switch-HVAC	0.39	1.18	2.37	3.58	4.00	4.02	4.03	4.10	4.13	4.18	4.35	4.44	4.55	4.67	5.13	5.33	5.52	5.72	6.52	6.74
C&I Curtailment- Manual HVAC Control	0.20	0.60	1.20	1.78	1.94	1.89	1.85	1.80	1.75	1.69	1.64	1.58	1.53	1.47	1.42	1.37	1.32	1.28	1.24	1.20
Total																				
Total DSM	16.19	24.74	33.12	41.61	50.01	58.50	64.72	73.28	83.85	83.31	89.80	104.55	102.75	121.35	127.77	118.76	123.11	126.96	130.86	146.43
Total DR	0.73	2.18	4.61	8.03	12.57	18.75	21.55	22.13	22.74	23.56	24.36	25.08	25.92	26.70	28.33	29.32	30.26	31.26	33.67	34.61

Scenario 1: Strategy 5

Residential grossed up for Reserve Margin	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Home Energy Services	1.31	3.83	6.95	11.25	10.74	12.23	18.33	21.79	25.20	22.14	22.01	26.11	26.33	26.17	27.38	20.40	19.60	23.12	24.13	23.27
Res HVAC	0.59	1.82	3.82	6.34	6.27	9.07	16.29	20.82	25.72	17.61	22.57	32.87	35.09	38.25	39.50	25.70	29.27	40.26	44.25	44.76
Res Efficient Products	0.07	0.22	0.49	1.12	1.85	2.58	4.02	5.53	7.09	9.68	9.62	11.18	13.49	13.64	17.36	17.58	16.88	17.86	18.51	17.43
Res Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Efficient New Homes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Appliance Recycling	0.12	0.37	0.77	1.32	1.45	1.93	3.21	4.03	4.79	3.71	4.06	5.19	5.35	5.63	5.90	4.16	4.35	5.49	6.11	6.37
CVR - Res	0.15	0.46	0.94	1.66	1.87	2.25	3.35	4.02	4.68	4.20	4.25	5.05	5.15	5.23	5.62	4.29	4.25	5.07	5.34	5.30
C&I grossed up for Reserve Margin																				
Small Business DI	0.78	2.42	5.07	6.44	7.15	11.97	16.25	18.78	21.18	13.15	16.62	18.84	17.42	18.82	15.04	11.63	15.38	17.32	19.10	20.85
Commercial Prescriptive	0.53	1.77	4.23	6.17	7.51	15.17	24.12	31.21	38.64	23.49	37.14	51.54	54.46	63.43	52.07	38.46	54.68	66.52	72.10	77.68

Commercial Custom	1.35	4.22	8.87	10.65	10.62	20.00	29.72	36.50	42.69	22.00	33.36	43.23	40.67	45.54	34.11	28.44	34.21	41.84	47.09	45.77
Retrocommissioning	1.41	4.49	9.86	13.11	10.63	18.88	33.10	41.57	49.37	20.83	29.75	43.10	41.34	45.63	38.08	20.23	27.97	40.11	48.15	53.88
New Construction	0.00	0.02	0.05	0.08	0.09	0.21	0.41	0.56	0.74	0.38	0.67	1.10	1.19	1.45	1.22	0.76	1.19	1.68	1.95	2.20
CVR - C&I	0.21	0.66	1.37	1.82	2.08	3.44	4.97	5.93	7.04	4.78	6.27	7.59	7.34	7.77	6.29	4.87	6.27	7.24	7.58	7.99
Demand Response																				
Res DLC/ADR	1.97	3.98	5.92	7.78	9.56	11.25	12.66	13.91	15.00	15.96	16.80	17.53	18.14	18.66	19.10	19.45	19.72	19.93	20.08	20.17
Res pricing - PTR	4.95	5.69	6.49	7.33	8.21	9.11	10.03	10.93	11.80	12.63	13.39	14.06	14.62	15.06	15.36	15.51	15.51	15.51	15.51	15.51
Large Cust SOP	1.05	2.12	3.19	4.27	5.36	6.46	7.56	8.67	9.77	10.89	11.48	12.07	12.65	13.24	13.84	14.45	15.04	15.65	16.26	16.87
Total																				
Total DSM	6.54	20.27	42.43	59.97	60.25	97.73	153.77	190.76	227.14	141.96	186.34	245.78	247.82	271.56	242.58	171.54	214.04	266.50	291.33	305.49
Total DR	7.97	11.79	15.59	19.38	23.13	26.83	30.25	33.50	36.58	39.48	41.67	43.65	45.41	46.96	48.30	49.40	50.28	51.09	51.85	52.55

Scenario 2: Strategy 4

Residential grossed up for Reserve Margin	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	1.11	1.65	2.06	2.48	2.93	3.38	3.86	4.35	4.85	5.23	5.68	6.36	6.66	7.33	7.82	8.04	8.46	8.84	9.25	9.66
HPwES	3.38	5.19	7.09	9.04	10.89	12.78	13.50	15.54	18.98	17.35	18.96	23.28	22.40	28.80	30.67	26.88	28.17	29.26	30.42	35.43
HVAC	0.86	1.36	1.93	2.54	3.20	3.89	4.49	5.36	6.15	5.10	5.84	9.15	7.29	11.39	12.30	9.12	9.63	10.06	10.50	14.96
Low Income & Multi Family	2.80	4.42	6.04	7.71	9.34	11.02	11.95	13.81	16.48	15.31	16.83	20.99	19.96	25.58	27.29	24.03	25.20	26.21	27.26	31.95
Res Behavior	0.04	0.27	0.33	0.35	0.38	0.44	0.48	0.51	0.58	0.58	0.57	0.82	0.74	0.94	1.05	0.95	1.02	1.13	1.21	1.46
School Kits	0.04	0.06	0.09	0.11	0.13	0.15	0.18	0.20	0.23	0.25	0.25	0.30	0.29	0.34	0.36	0.34	0.35	0.36	0.38	0.42
C&I grossed up for Reserve Margin																				
Com Behavior	0.17	0.27	0.84	1.06	1.29	1.71	2.16	2.61	3.07	4.14	5.25	6.67	7.43	8.80	9.77	10.15	10.87	11.47	12.05	13.64
Large C&I	5.84	8.66	11.65	14.73	17.95	21.19	23.34	26.73	31.42	30.90	33.58	38.64	38.40	45.91	48.23	44.67	46.46	47.97	49.60	55.18
Small C&I	1.85	2.82	3.89	5.02	6.26	7.54	8.93	10.31	11.67	12.64	13.82	15.41	16.07	17.72	18.73	18.95	19.75	20.41	21.10	22.89
Demand Response																				
DLC-Thermostat-HVAC	0.14	0.42	0.95	1.51	1.83	1.99	2.21	2.58	2.96	3.40	3.93	4.41	4.95	5.50	6.51	7.17	7.82	8.47	10.07	10.72
Dynamic Pricing w/o enabling tech.	-	-	0.11	0.94	3.71	8.35	10.27	10.06	9.93	9.68	9.64	9.55	9.42	9.36	9.26	9.16	9.05	8.94	8.85	8.75
Dynamic Pricing with enabling tech.	-	-	0.03	0.29	1.15	2.53	3.22	3.65	4.04	4.69	4.90	5.23	5.63	5.88	6.22	6.53	6.82	7.15	7.37	7.60
DLC-Switch-HVAC	0.41	1.24	2.49	3.76	4.20	4.22	4.24	4.30	4.34	4.39	4.57	4.66	4.78	4.90	5.38	5.59	5.78	5.99	6.82	7.05
C&I Curtailment- Manual HVAC Control	0.22	0.64	1.28	1.90	2.07	2.02	1.97	1.92	1.87	1.81	1.75	1.69	1.63	1.57	1.52	1.46	1.41	1.37	1.32	1.28
Total																				
Total DSM	16.09	24.71	33.90	43.05	52.38	62.11	68.88	79.43	93.43	91.51	100.78	121.63	119.24	146.81	156.20	143.12	149.91	155.72	161.77	185.59
Total DR	0.77	2.30	4.86	8.40	12.96	19.12	21.92	22.51	23.13	23.97	24.79	25.54	26.40	27.21	28.89	29.92	30.89	31.91	34.42	35.39

Scenario 3: Strategy 3 (Scenario 3: Strategy 5)

Residential grossed up for Reserve Margin	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Home Energy Services	1.31	3.83	6.95	11.25	10.74	12.23	18.33	21.79	25.20	22.14	22.01	26.11	26.33	26.17	27.38	20.40	19.60	23.12	24.13	23.27
Res HVAC	0.59	1.82	3.82	6.34	6.27	9.07	16.29	20.82	25.72	17.61	22.57	32.87	35.09	38.25	39.50	25.70	29.27	40.26	44.25	44.76
Res Efficient Products	0.07	0.22	0.49	1.12	1.85	2.58	4.02	5.53	7.09	9.68	9.62	11.18	13.49	13.64	17.36	17.58	16.88	17.86	18.51	17.43
Res Lighting	0.06	0.21	0.53	0.85	0.41	0.37	0.46	0.54	0.62	0.97	0.69	0.70	0.69	0.70	0.98	0.93	0.70	0.70	0.70	0.72
Efficient New Homes	0.01	0.02	0.06	0.18	0.32	0.55	1.03	1.43	1.85	1.75	2.09	2.88	3.32	3.76	4.42	3.63	3.92	5.09	5.76	6.09
Appliance Recycling	0.12	0.37	0.77	1.32	1.45	1.93	3.21	4.03	4.79	3.71	4.06	5.19	5.35	5.63	5.90	4.16	4.35	5.49	6.11	6.37
CVR - Res	0.15	0.46	0.94	1.66	1.87	2.25	3.35	4.02	4.68	4.20	4.25	5.05	5.15	5.23	5.62	4.29	4.25	5.07	5.34	5.30
C&I grossed up for Reserve Margin																				
Small Business DI	0.78	2.42	5.07	6.44	7.15	11.97	16.25	18.78	21.18	13.15	16.62	18.84	17.42	18.82	15.04	11.63	15.38	17.32	19.10	20.85
Commercial Prescriptive	0.53	1.77	4.23	6.17	7.51	15.17	24.12	31.21	38.64	23.49	37.14	51.54	54.46	63.43	52.07	38.46	54.68	66.52	72.10	77.68
Commercial Custom	1.35	4.22	8.87	10.65	10.62	20.00	29.72	36.50	42.69	22.00	33.36	43.23	40.67	45.54	34.11	23.44	34.21	41.84	44.09	45.77
Retrocommissioning	1.41	4.49	9.86	13.11	10.63	18.88	33.10	41.57	49.37	20.83	29.75	43.10	41.34	45.63	38.08	20.23	27.97	40.11	48.15	53.88
New Construction	0.00	0.02	0.05	0.08	0.09	0.21	0.41	0.56	0.74	0.38	0.67	1.10	1.19	1.45	1.22	0.76	1.19	1.68	1.95	2.20
CVR - C&I	0.21	0.66	1.37	1.82	2.08	3.44	4.97	5.93	7.04	4.78	6.27	7.59	7.34	7.77	6.29	4.87	6.27	7.24	7.58	7.99
Demand Response																				
Res DLC/ADR	1.97	3.98	5.92	7.78	9.56	11.25	12.66	13.91	15.00	15.96	16.80	17.53	18.14	18.66	19.10	19.45	19.72	19.93	20.08	20.17
Res pricing - PTR	4.95	5.69	6.49	7.33	8.21	9.11	10.03	10.93	11.80	12.63	13.39	14.06	14.62	15.06	15.36	15.51	15.51	15.51	15.51	15.51
Large Cust SOP	1.05	2.12	3.19	4.27	5.36	6.46	7.56	8.67	9.77	10.89	11.48	12.07	12.65	13.24	13.84	14.45	15.04	15.65	16.26	16.87
Total																				
Total DSM	6.60	20.50	43.02	61.00	60.98	98.66	155.26	192.73	229.61	144.69	189.12	249.37	251.83	276.03	247.97	176.10	218.66	272.28	297.79	312.30
Total DR	7.97	11.79	15.59	19.38	23.13	26.83	30.25	33.50	36.58	39.48	41.67	43.65	45.41	46.96	48.30	49.40	50.28	51.09	51.85	52.55

All values reflected in MWhs

Scenario 1: Strategy 1

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	-	-	-	-	-	-	-	-	-	-	-	2,494	5,055	7,674	10,348	13,072	15,859	18,690	21,558	25,930
HPwES	17,735	27,179	36,822	46,716	55,781	65,191	75,041	85,184	95,721	106,249	116,693	128,030	139,194	150,080	160,605	170,711	180,430	189,664	198,403	209,357
HVAC	3,009	4,747	6,644	8,696	10,904	13,248	15,707	18,256	20,867	24,187	27,576	30,910	34,151	37,268	40,238	43,043	45,690	48,153	50,432	53,591
Low Income & Multi Family	14,811	23,487	31,780	40,261	48,335	56,818	65,581	74,596	84,018	93,446	102,855	112,988	122,818	132,386	141,727	150,591	159,111	167,312	174,983	184,601
Res Behavior	244	1,775	2,133	2,317	2,507	2,895	3,115	3,352	3,810	4,093	4,395	5,348	5,748	6,182	6,850	7,356	7,910	8,715	9,365	10,133
School Kits	334	508	681	857	1,030	1,205	1,389	1,577	1,776	1,967	2,150	2,329	2,500	2,660	2,810	2,948	3,079	3,200	3,312	3,465
C&I EE																				
Com Behavior	1,226	1,947	5,968	7,530	9,308	12,292	15,427	18,674	21,987	30,747	39,408	47,823	55,856	63,388	70,327	76,621	82,241	87,192	91,498	97,792
Large C&I	37,579	55,720	74,624	94,285	114,856	136,032	158,235	180,273	201,926	222,522	241,882	260,262	277,433	293,482	307,952	321,698	335,041	347,374	358,685	372,930
Small C&I	13,322	20,328	27,895	36,004	44,828	54,069	63,796	73,603	83,353	92,793	101,798	110,370	118,704	126,489	133,537	140,069	146,155	151,651	156,573	162,979

Scenario 1: Strategy 2

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	7,903	12,793	17,379	23,168	29,085	36,574	44,376	52,210	59,825	66,884	73,212	78,742	83,480	87,478	90,812	93,639	96,105	98,293	100,273	102,844
HPwES	20,469	34,605	51,158	71,207	91,225	114,347	140,327	165,667	189,656	211,131	229,702	245,339	258,141	268,592	277,400	284,753	290,914	296,257	300,849	307,366
HVAC	3,784	6,777	10,508	15,121	21,821	30,007	38,167	45,924	53,214	59,643	65,204	69,998	74,093	77,590	80,597	83,215	85,582	87,716	89,667	92,722
Low Income & Multi Family	17,252	30,089	44,551	61,966	80,066	101,125	123,562	145,322	166,074	184,773	200,955	214,744	226,056	235,203	242,567	248,354	253,097	257,184	260,555	265,532
Res Behavior	244	1,775	2,132	2,316	2,507	2,895	3,114	3,351	4,149	4,465	4,803	5,368	5,768	6,201	6,870	7,375	7,929	8,734	9,384	10,154
School Kits	372	602	853	1,119	1,386	1,653	1,917	2,165	2,400	2,602	2,773	2,920	3,047	3,157	3,253	3,338	3,419	3,494	3,566	3,665
C&I EE																				
Com Behavior	1,543	5,041	11,883	16,665	30,055	44,456	58,843	72,591	85,146	96,100	105,261	112,641	118,399	122,776	126,031	128,417	130,145	131,389	132,279	133,984
Large C&I	39,419	62,847	90,142	120,261	151,071	183,672	216,058	247,326	277,246	304,116	328,633	350,432	369,833	386,419	400,449	412,481	422,861	432,362	440,784	451,877
Small C&I	14,968	24,986	37,010	50,420	64,682	79,719	94,620	108,862	122,154	134,458	145,373	154,737	162,661	169,183	174,498	178,869	182,485	185,640	188,336	192,030

Scenario 1: Strategy 5

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Home Energy Services	8,342	23,743	41,923	63,850	76,919	93,595	113,383	132,757	151,903	171,223	167,800	165,645	163,202	159,759	155,437	152,333	149,259	145,764	143,850	140,268
Res HVAC	2,128	6,353	12,847	21,836	31,837	43,663	56,917	71,145	86,564	102,911	111,469	119,083	125,562	130,854	136,060	140,708	144,531	147,506	149,587	150,659
Res Efficient Products	601	1,873	4,165	8,037	13,762	22,703	34,038	46,693	59,767	72,735	84,047	95,042	105,570	115,431	124,353	131,161	136,348	140,490	143,903	146,791
Res Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Efficient New Homes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Appliance Recycling	427	1,292	2,620	4,448	6,513	8,825	11,342	13,980	16,395	18,418	18,709	18,865	19,145	19,555	19,820	19,962	20,030	20,049	20,867	21,803
CVR - Res	740	2,233	4,470	7,434	10,387	13,337	16,285	19,226	22,165	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106
C&I EE																				
Small Business DI	4,533	13,715	27,690	45,950	62,833	77,991	91,686	104,535	115,617	124,803	116,250	108,820	104,499	105,080	107,330	108,086	107,570	106,157	111,070	113,808
Commercial Prescriptive	2,602	8,425	19,281	37,191	60,034	87,216	115,940	145,853	176,093	206,450	228,777	253,176	276,277	297,208	313,909	326,485	336,788	344,791	350,384	353,979
Commercial Custom	5,493	16,622	33,577	55,896	77,551	99,111	120,013	140,848	161,556	182,117	179,034	175,450	171,554	176,165	178,975	183,437	183,561	180,800	177,018	173,217
Retrocommissioning	4,752	14,379	29,150	49,109	69,149	89,214	109,285	129,339	145,976	159,153	152,160	145,214	141,919	142,268	142,582	142,987	143,055	142,678	152,801	159,316
New Construction	19	63	162	355	660	1,063	1,538	2,059	2,606	3,164	3,721	4,270	4,797	5,285	5,736	6,161	6,569	6,964	7,341	7,700
CVR - C&I	1,105	3,345	6,753	11,360	15,985	20,629	25,287	29,954	34,633	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321

Scenario 2: Strategy 4

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Consumer Products	8,743	13,059	16,291	19,702	23,269	26,950	30,765	34,682	38,719	42,785	46,856	50,919	54,933	58,863	62,677	66,348	69,871	73,217	76,377	80,288
HPwES	21,792	33,607	45,831	58,511	70,533	83,037	96,067	109,393	123,041	136,477	149,545	163,566	177,047	189,839	201,838	212,985	223,330	232,806	241,435	252,751
HVAC	3,700	5,891	8,314	10,959	13,820	16,859	20,032	23,288	26,569	31,297	36,061	40,620	44,920	48,925	52,613	55,980	59,065	61,853	64,367	68,056
Low Income & Multi Family	18,193	28,848	39,307	50,139	60,756	71,901	83,398	95,146	107,234	119,424	131,371	143,930	155,903	167,237	177,949	187,794	196,931	205,409	213,052	223,063
Res Behavior	244	1,775	2,133	2,317	2,507	2,895	3,115	3,352	3,810	4,093	4,395	5,348	5,748	6,182	6,850	7,356	7,910	8,715	9,365	10,134
School Kits	343	522	703	885	1,067	1,251	1,444	1,640	1,846	2,044	2,232	2,413	2,585	2,745	2,892	3,027	3,153	3,268	3,375	3,522
C&I EE																				
Com Behavior	1,268	2,017	6,090	7,714	9,563	12,658	15,909	19,274	22,700	31,735	40,649	49,283	57,488	65,140	72,145	78,452	84,040	88,922	93,130	99,355
Large C&I	40,056	59,535	79,837	100,958	122,855	145,388	168,962	192,272	215,081	236,710	256,942	276,063	293,810	310,321	325,064	339,122	352,711	365,192	376,560	391,037
Small C&I	13,942	21,312	29,277	37,816	47,105	56,825	67,034	77,290	87,446	97,242	106,540	115,349	123,885	131,823	138,951	145,558	151,679	157,171	162,057	168,474

Scenario 3: Strategy 3 (Scenario 3: Strategy 5)

Residential EE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Home Energy Services	8,342	23,743	41,923	63,850	76,919	93,595	113,383	132,757	151,903	171,223	167,800	165,645	163,202	159,759	155,437	152				

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Res Lighting	588	2,138	5,343	6,169	2,958	3,781	4,603	5,423	6,242	7,062	7,062	7,059	7,057	7,061	7,072	7,081	7,081	7,081	7,081	7,081
Efficient New Homes	26	100	302	799	1,772	3,212	4,925	6,747	8,595	10,443	12,280	14,111	15,932	17,738	19,532	21,314	23,086	24,851	26,617	28,384
Appliance Recycling	427	1,292	2,620	4,448	6,513	8,825	11,342	13,980	16,395	18,418	18,709	18,865	19,145	19,555	19,820	19,962	20,030	20,049	20,867	21,803
CVR - Res	740	2,233	4,470	7,434	10,387	13,337	16,285	19,226	22,165	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106	25,106
C&I EE																				
Small Business DI	4,533	13,715	27,690	45,950	62,833	77,991	91,686	104,535	115,617	124,803	116,250	108,820	104,499	105,080	107,330	108,086	107,570	106,157	111,070	113,808
Commercial Prescriptive	2,602	8,425	19,281	37,191	60,034	87,216	115,940	145,853	176,093	206,450	228,777	253,176	276,277	297,208	313,909	326,485	336,788	344,791	350,384	353,979
Commercial Custom	5,493	16,622	33,577	55,896	77,551	99,111	120,013	140,848	161,556	182,117	179,034	175,450	171,554	176,165	178,975	183,437	183,561	180,800	177,018	173,217
Retrocommissioning	4,752	14,379	29,150	49,109	69,149	89,214	109,285	129,339	145,976	159,153	152,160	145,214	141,919	142,268	142,582	142,987	143,055	142,678	152,801	159,316
New Construction	19	63	162	355	660	1,063	1,538	2,059	2,606	3,164	3,721	4,270	4,797	5,285	5,736	6,161	6,569	6,964	7,341	7,700
CVR - C&I	1,105	3,345	6,753	11,360	15,985	20,629	25,287	29,954	34,633	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321	39,321

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

***EX PARTE: IN RE: 2018 TRIENNIAL
INTEGRATED RESOURCE PLAN OF
ENTERGY NEW ORLEANS, INC.***)
)
)
)

DOCKET NO. UD-17-03

EXHIBIT 4

**HIGHLY SENSITIVE
PROTECTED MATERIALS**

INTENTIONALLY OMITTED

OCTOBER 2019

CERTIFICATE OF SERVICE

Docket No. UD-17-03

I hereby certify that I have served the required number of copies of the foregoing report upon all other known parties of this proceeding, by the following: electronic mail, facsimile, overnight mail, hand delivery, and/or United States Postal Service, postage prepaid.

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New Orleans, Louisiana, this 29th day of October, 2019.



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