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March 9, 2022

VIA ELECTRONIC MAIL ONLY

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

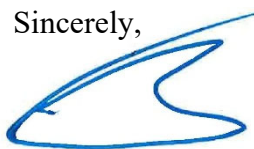
Re: Filing of Entergy New Orleans, LLC's Request for Approval of a Demand Response Battery Storage Pilot Program for Program Year 12

Dear Ms. Johnson:

Entergy New Orleans, LLC ("ENO") respectfully submits its Request for Approval of a Demand Response Battery Storage pilot program for Program Year 12 of Energy Smart. As a result of the remote operations of the Council's office related to Covid-19, ENO submits this filing electronically and will submit the original and requisite number of hard copies once the Council resumes normal operations, or as you direct. ENO requests that you file this submission in accordance with Council regulations as modified for the present circumstances.

Should you have any questions regarding this filing, please contact my office at (504) 576-6523.

Thank you for your assistance with this matter.

Sincerely,

Brian L. Guillot

BLG/lp
Enclosure

cc: Official Service List UD-08-02 and UD-17-03 (*via electronic mail*)

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

<i>IN RE: RESOLUTION REGARDING</i>)	
PROPOSED RULEMAKING TO)	
ESTABLISH INTEGRATED)	
RESOURCE PLANNING)	DOCKET NO. UD-08-02
COMPONENTS AND REPORTING)	
REQUIREMENTS FOR)	
ENTERGY NEW ORLEANS, INC.)	
)	<i>and</i>
)	
)	
)	
<i>EX PARTE: IN RE: 2018 TRIENNIAL</i>)	
INTEGRATED RESOURCE PLAN OF)	DOCKET NO. UD-17-03
ENTERGY NEW ORLEANS, LLC)	

**APPLICATION OF ENTERGY NEW ORLEANS, LLC
FOR APPROVAL OF A BATTERY STORAGE
DEMAND RESPONSE PILOT PROGRAM**

Entergy New Orleans, LLC (“ENO” or the “Company”), pursuant to Council Resolution R-15-140, respectfully submits this Application for Approval (the “Application”) of a Battery Storage Demand Response Pilot program (the “Pilot”), and, in support of this Application, ENO respectfully shows as follows:

I.

ENO is an electric and gas utility organized and operating under the laws of the State of Louisiana, with its general office and principal place of business at 1600 Perdido Street, Building 505, New Orleans, Louisiana 70112. The Company is engaged in the manufacture, production, transmission, distribution, and sale of electricity to residential, commercial, industrial, and governmental consumers throughout the City of New Orleans. ENO furnishes electric service to approximately 209,000 customers in Orleans Parish. The Company also provides natural gas service to approximately 110,000 retail gas customers in Orleans Parish.

II.

In July 2009, ENO submitted a filing in which it detailed the specifics of the design and funding levels for programs to be included in the Energy Smart Plan programs (*e.g.*, selection of a third-party administrator, verification of deemed savings calculations, proposed goals and targets). On September 17, 2009, Council Resolution R-09-483 approved the Energy Smart Plan programs as designed and found ENO's programs to be just, reasonable and in the public interest, including funding levels and allocations, and goals and targets recommended by ENO.

III.

In April 2011, ENO and the third-party administrator implemented the Energy Smart Plan programs and began offering programs to ENO electric customers. ENO filed status reports as outlined and required by Council Resolution R-11-52. Representatives of ENO made presentations on the first, second, and third year results of the Energy Smart programs to the Council's Utility, Cable, Telecommunications and Technology Committee (formerly known as the Council Utility Committee). Additionally, ENO submitted written reports summarizing the first, second, third, and fourth year results of the program.

IV.

On October 18, 2012, during Program Year 2 of Energy Smart on the East Bank of New Orleans, Council Resolution R-12-391 approved the inclusion of the Fifteenth Ward, also known as Algiers, in the Energy Smart Program. The Energy Smart Algiers program ran concurrently with the Energy Smart program for the remainder of Orleans Parish. On May 15, 2015, Council Resolution R-15-194 approved the transfer of the utility assets in Algiers from Entergy Louisiana, LLC to ENO, which occurred on September 1, 2015.

V.

On July 8, 2016, ENO filed a proposal to implement a Nest thermostat pilot program in Algiers. The pilot included providing approximately 100 Nest thermostats to income qualified, multifamily customers in order to better understand the energy efficiency benefits associated with smart thermostats. As a condition of approval, the Nest Pilot proposal filing had to comply with the requirements laid out in Resolution R-15-140. Subsection 2 of the ordering section of Council Resolution R-15-140 states that prior to the implementation of any new pilot program for the Energy Smart program, the Companies must file an application with the Council for review and approval that includes: a) Incentive costs, non-incentive costs and kWh savings (in some cases where the supporting calculations require, individual measures should be shown within a program) for each individual pilot program proposed; b) EM&V spending at 6.5%; c) LCFC including the adjusted gross margin (“AGM”) calculation; and d) a program description that includes the objective of the pilot, including results, as appropriate, that will provide data to determine cost-effectiveness should a full implementation of the program be considered.

More recently, in Resolution R-16-106, the Council recommended that proposals for pilot programs should include, at a minimum, (1) the number of customers to be included in order to generate adequate data for evaluation, which customer classes should participate, whether participation is voluntary or mandatory; (2) what data is to be collected and how it will be collected; (3) the duration of the proposed pilot program; (4) draft tariff provisions to implement such a pilot program; and (5) the anticipated costs and rate impact of such a pilot program. The information set forth in this Application, and contained in the attached implementation plan documents, fulfills these requirements.

On August 11, 2016, the Council adopted Resolution R-16-331, which approved the Nest thermostat pilot proposal.

VI.

On February 20, 2020, Council Resolution R-20-51 approved the programs and budgets for Program Years 10-12 of Energy Smart, respectively. The approved budgets for PY12 are shown in the table below.

Energy Smart--Program Year 12 Approved Budget	
Energy Efficiency	
Program Costs	\$ 18,701,145
EM&V	\$ 773,026
Total	\$ 19,474,171
Demand Response	
Program Costs	\$ 1,751,374
EM&V	\$ 72,974
Total	\$ 1,824,348

VII.

In late 2021, ENO engaged Honeywell, the third-party implementer for the current Energy Smart Large Commercial DR program, to explore various ideas centered around utilizing smart solar battery systems to support the grid. One of the ideas that emerged from that effort was to develop a new program to allow residential customers with existing solar-connected smart battery systems to receive an incentive in exchange for participating in demand response events. Such programs have been implemented in other markets and are often referred to as Bring Your Own Battery, or BYOB, programs. ENO and Honeywell worked together to design a small pilot BYOB program that would benefit participating customers and provide valuable data to ENO regarding the capabilities of distributed battery resources dispatched for demand response purposes. The Pilot would target 30 residential customers with existing solar-connected smart battery systems and would connect the battery systems to the Enbala Concerto Distributed Energy Resource Management System (DERMS) platform currently being used by Honeywell to administer the Large Commercial DR program. The Pilot would provide an opportunity for ENO to gain direct

experience on the potential grid benefits of distributed battery resources and their relative performance when called upon during a demand response event. The Pilot would provide an opportunity for ENO to gauge customer interest and gather customers' feedback on their willingness to participate in an ENO-sponsored battery DR program. Finally, the Pilot would also enable ENO to assess the willingness and ability of multiple battery manufacturers to facilitate connection of their systems to the Honeywell DERMS and learn about the potential requirements or parameters associated with including customer-sited batteries in utility-sponsored programs.

VIII.

The proposed PY 12 budget for the Pilot appears in the table below:

Program Costs	\$76,792
Evaluation, Measurement and Verification	\$3,072
Total Budget	\$79,864

A detailed overview of Honeywell's implementation plan, including a budget breakdown, has been included with this filing as Exhibit 2. The anticipated effect of the Pilot on a typical residential customer's monthly bill is approximately \$0.03 through the Energy Efficiency Cost Recovery (EECR) Rider. Historically, the Energy Smart program has operated below the approved budget for each program year. As such, it is possible that the typical residential customer's bill will be affected by less than the aforementioned amount.

IX.

Like other DR programs under Energy Smart, the Pilot would cover the summer season which extends from May-September. As such, ENO recommends a start date of May 1, 2022, and an end date of September 30, 2022. The proposed end date would allow for evaluation and assessment prior to potentially offering the Pilot program again in 2023. As with other Energy

Smart programs, the Company plans to provide an update on the Pilot in the semi-annual report for PY12.

X.

Given that the Pilot is a demand response offering, the Lost Contribution to Fixed Costs, as calculated in Energy Smart filings, is negligible.

XI.

The Company has attached, as Exhibit 1 to this Application, a discussion of the potential cost-effectiveness of a fully deployed battery storage DR program. The projected Total Resource Cost (TRC) score for the Pilot is 1.05. If the Pilot expands in subsequent years, the TRC score would be expected to increase due to initial program management cost (including marketing and outreach) decreasing as you recruit more customers. There are fixed fees associated with program launch, like M&V, those grow at a slower rate than benefits.

ENO is also submitting Honeywell's Implementation Plan as Exhibit 2.

XII.


In support of the request set forth herein, the Company submits this application for the approval of the Battery Storage Demand Response Pilot Program for ENO customers for Program Year 12.

WHEREFORE, the Company respectfully requests that this Council issue a Resolution:

1. Approving the Company's proposal for the Battery Storage Demand Response Pilot Program;
2. Approving Honeywell as the Pilot implementer;
3. Approving May 1, 2022 – September 30, 2022, as the time period for the Pilot;
4. Approving recovery of the Pilot's cost through Rider EECR;

5. Granting all other general and equitable relief that the law and the nature of this proceeding may permit.

Respectfully submitted,



By: _____
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**ATTORNEYS FOR
ENTERGY NEW ORLEANS, LLC**

CERTIFICATE OF SERVICE
Docket No. UD-08-02 & 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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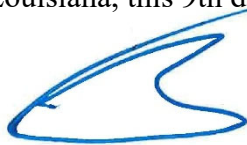
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New Orleans, Louisiana, this 9th day of March, 2022.



Brian L. Guillot

1. Cost-Effectiveness of the Battery Storage Pilot

The procedures for cost-effectiveness testing of Energy Smart programs are well-established and use the Total Resource Cost (TRC) test from the California Standard Practice Manual (SPM). When extrapolating the cost-effectiveness of the Pilot to a future, more widespread implementation, the following additional parameters need to be accounted for:

- a. **Drop-off of fixed costs.** The initial development of the Battery Storage Pilot will entail higher fixed costs for the recruitment of the initial Pilot cohort. The Pilot period will assist in development of program infrastructure that will be usable for future full-scale program implementation.
- b. **Annual recruitment level at full-scale program implementation.** With this target in mind, extrapolation of pilot findings to full program implementation will account for increased benefits and economies of scale when expanding the program. For illustrative purposes, we assume full-scale recruitment of an additional 100 customers annually.

With these parameters in mind, cost-effectiveness testing of full-scale implementation of a Battery Storage program will be calculated as follows:

- a. **TRC of the Pilot in Year 1.** This calculation places the full upfront costs of recruitment in Year 1, as demonstrated in the TRC and UCT values provided herein. These scores assume a 10-year Effective Useful Life.¹
- b. **TRC of the pilot in a subsequent program year, if kept at pilot scale.** This calculation accounts for the drop-off in fixed program costs associated with initial program development and assumes that the program recruits the same number of customers annually. This would assume a new group of 100 customers recruited annually, credited each year with a 10-year measure life.
- c. **TRC of expanded program implementation.** This calculation provides the cost-effectiveness of administering the program at an expanded scale. The energy and demand savings from pilot participants will be extrapolated to future participants in terms of percent of annual usage saved. The annual percent savings from pilot participants will be multiplied by ENO's annual average residential energy use, and then multiplied by the target number of customers to be recruited.

Item (c) detailed above will provide a more accurate representation of cost-effectiveness findings after expansion to full-scale implementation. With this in mind, full-program cost-effectiveness would be estimated using:

- a. Marginal upfront costs associated with recruitment of an additional 100 residential accounts to scale the program from Pilot to full-program scale in Year 2;
- b. Estimates of program cost reduction once the effort to establish program infrastructure is complete; and

¹ Literature review from battery manufacturers states "5-15 years" – assuming midpoint value for this analysis.

- c. Extrapolation of Year-1 pilot findings for per-customer kWh and kW reductions (denominated by percent of annual use and percent of peak use) to a program comprised an additional 100 accounts per year.

The extrapolated values will reflect the life cycle cost-effectiveness of administering a full-scale Battery Storage program over a program cycle.

2. EM&V Methods

Savings from the Battery Storage Pilot will be evaluated using the following data sources:

- a. **ENO billing data.** The primary data analysis will be based on billed use recorded by ENO. Impact analysis of DR events called in the Pilot will be conducted with ENO's AMI data.
- b. **Usage data stored by the battery/PV system.** Most solar PV/battery systems will provide reporting detailing PV production, use, battery storage, and battery discharge rates. This will supplement whole-house AMI data analysis. This is necessary if events are run during summer daytime hours, as there is the possibility of a home having its load fully satisfied by the PV system and the DR value is derived from the discharging of the battery back to the grid.

3. EM&V Results

The following considerations need to be taken in addressing the EM&V results:

- a. **Summer peak events.** Events are likely to occur during hours where the solar PV system is still producing (late afternoon) or possibly at full production (early afternoon). It is possible that a participant will have their home's load fully satisfied by PV production during an event. In these instances, the value is derived from inducing battery discharge (with load provided to ENO either directly by the battery, or indirectly via solar PV, with the home load satisfied by the battery) and the impact will need to account for net-metering purchases as well as customer incentives.
- b. **Winter peak events.** Winter peak events are likely to occur after solar PV production has ceased (or has declined sufficiently to be immaterial to the analysis).
- c. **Analyzing results by control algorithm.** The evaluation will consider what type of control algorithm is being applied, accounting for:
 - I. Reserve margin – will the program tailor battery reserve margin (lowest % charge the battery can be brought to without compromising the life of the battery) based on individual manufacturers' recommendations or will one consistent margin be selected (common margins range from 20%-25%)?
 - II. Discharge algorithm – will the DR algorithm endeavor to drain the battery equally over the length of the event? Will the algorithm run the battery at 100% discharge until brought to reserve margin? Does this selection vary by event length?



Residential Battery Storage Pilot

Proposal To: Entergy New Orleans
February 2, 2022

Submitted By: Honeywell Smart Energy
208 S Rogers Lane
Raleigh, NC 27610-2144

Contact: Maurice Kaiser
862.221.7308
Maurice.Kaiser@Honeywell.com

PILOT SUMMARY

The Residential Battery Storage Pilot discussed in this pilot plan will have a one season term beginning on May 1, 2022 and continuing through December 31, 2022. The objective of the program is to secure 135 kW in peak demand reduction through the participation of an estimated 30 residential battery storage units in the battery storage demand response program. The target audience will be residential customers that have already purchased, or plan to purchase, a residential battery storage solution as part of their home solar photovoltaic (PV) system. Similar to a bring your own battery approach. The incentives being proposed are designed to encourage participation in the battery storage demand response program.

There are two main objectives of the pilot. The first objective is to understand how much demand reduction can be realized during peak time periods. The second is to determine acceptance of the programs utilization of customers' batteries for a demand response program.



IMPLEMENTATION PROCESS

This document summarizes the implementation plan and proposed budget for the Residential Battery Storage Pilot. It includes customer acquisition, marketing, trade ally recruitment/training, enrollment, software, evaluation, measurement & verification (“EM&V”), and data collection/management.

CUSTOMER ACQUISITION

Honeywell will market directly to customers as well as work with solar installation and battery manufacturers to quickly acquire 30 pilot participants. Honeywell will provide an educational website as well as an enrollment portal to confirm eligibility and enroll customers’ batteries into program.

- Direct to customer marketing – Honeywell will create two emails that provide education on the program and a call to action to enroll. Entergy will deploy these emails to their Net Energy Metered (NEM) customers.
- Trade Ally – Honeywell will identify and work with solar installation vendors as well as battery manufacturers to educate them on the program. Honeywell will then enlist their help in identifying customers that may want to participate. Trade allies will be eligible for a referral incentive in the event that a customer enrolls. Honeywell will provide a customer facing brochure that can be used to promote the program as an educational leave behind. Honeywell will also provide a training webinar as needed.

ENROLLMENT & INCENTIVES

Customers who have expressed interest in the pilot will have the ability to enroll in the program either through the provided enrollment portal or through program staff. Customers will be guided to an Entergy branded residential battery storage website. There they will be provided with education about the pilot, have access to a frequently asked questions section and an enrollment portal. Customers will be able to contact the program team either through email or through a program phone number. The enrollment portal will determine eligibility and complete the enrollment process. Customers will answer a series of logic driven questions and pull-down menus that capture key data points from the customer and the customers battery. Customers will also have option to contact program staff to aid in the process or determine next steps if a customer does not have a battery that is listed as an available integration.

The pilot program will provide an incentive of \$300 upon successfully enrolling in the pilot and a participation incentive of \$250 in December. Incentive levels may be adjusted depending on the market reaction, but the overall proposed budget will not be exceeded.

Referral Incentives – a referral incentive of \$100/referral is also available to customers and trade allies. Referral incentives will be paid out after a referred customer participates in an event.

AVAILABLE INTEGRATIONS

The following residential battery manufacturers are currently integrated into the Concerto system:

- PWRcell
- SolarEdge
- Tesla Powerwall

For customers that want to participate, but have a battery that is not currently integrated into the system we can offer a software developer kit (SDK) from which they can integrate with Concerto APIs. Given the short timeline and small pilot participant level it is not expected that we will have any participants utilizing this particular pathway, although it would allow for future program growth. Battery manufacturer permission is required to integrate customer-owned devices into the Concerto platform. Honeywell cannot guarantee all manufacturers will make customer-sited batteries available to participate in this Pilot.

DR DISPATCH, CONTROL & OPTIMIZATION SOFTWARE

Honeywell will be utilizing an advanced software platform for dispatch, control, and optimization of all DR resources enrolled in the Program. This software platform, Concerto®, will be provided by Honeywell's partner Enbala Power Networks. Honeywell is currently using this system with the Large C&I program. The residential battery storage pilot plans to run no more than 15-20 events with a duration between 2-3 hours per event. Residential battery storage customers will be able to opt out of any individual event.

Key features of the Concerto software platform:

Dispatch of DR resources

- Day-Ahead forward scheduling and fast 10-minute dispatch
- Events can call for assets to be ramped in/out slowly, curtailed immediately for emergencies, or anything in-between
- Constraint based dispatch to ensure customer set limits are never exceeded, thereby reducing participant fatigue.
- Flexible methods and technology to connect and dispatch to customer BESS that are fully automated.
- Customer ability to opt out of future or current events regardless of how they are connected/dispatched to/from Concerto
- Unlimited ways to group customers/assets that allows ENO to call only the assets where they're needed, when they're needed
- Two-way feedback loop to monitor and control assets
- Allows for real-time measurement & verification of customer/asset performance

- Provides the ability for the platform to constantly re-optimize how much demand is curtailed by each customer as real-time results reveal over or under-performance
- Backend, next day EM&V utilizing ENO AMI data for customers that do not have two-way communication.
- Concerto User interface is available to ENO to view real-time status of assets enrolled in Program



EVALUATION, MEASUREMENT & VERIFICATION (EM&V)

Honeywell will utilize the existing SFTP integration already set up with Entergy to conduct EM&V where real-time data is not available from customer / manufacturer. Once AMI data file is uploaded by Entergy, Concerto will utilize data to calculate performance and associated incentive payments.

Concerto utilizes an industry standardized approach to baseline customer energy demand and resulting event performance. Performance will be calculated after each event and communicated to ENO and customer with in 24hours after data is uploaded to SFTP. Payments will be sent to customer following completion of each DR season in October / November time frame.

In addition, Energy Smart's third party evaluator, ADM Associates will perform a full evaluation of the pilot program. Results of the evaluation will be included in the Energy smart Annual Report for Program Year 12.

DATA MANAGEMENT & REPORTING

Honeywell will work with ENO to develop a set of data fields that are captured and reported on after each energy savings event should they differ from the existing Large C&I ADR Program.

BUDGET & COST PER KW

The pilot budget is below and expected cost per kW are below. This includes mobilization, program design, Concerto, outreach/enrollment, trade ally recruitment/training, running events and event performance reporting. In the first year of any pilot there is a higher upfront cost. Increased costs in this pilot's first year are due to creation of marketing materials, creating the enrolment portal and website.

Values vary year to year depending on the acquisition and curtailment strategies. As programs mature the costs per kW decrease. The cost to maintain an asset on the system is substantially less than the cost to acquire an asset.

	For illustrative purposes					
	Year 1	Year 1 kW load reduction	Year 1 Cost /kW	Year 2 Theoretical New Acquisition	Year 2 kW load reduction	Year 2 Cost /kW
Combined Implementation + Incentives (excl. EM&V)	\$ 76,792	135kW	\$568/kW	~\$10,050	135kW	\$74.44/kW