

**Filing in resilience and storm hardening Docket No. UD-21-03**

July 1, 2022

**By Electronic Mail**

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

Re: IN RE: SYSTEM RESILIENCY AND STORM HARDENING COUNCIL DOCKET NO. UD-21-03

Dear Ms. Johnson:

Please find attached Together New Orleans filing of a resilience plan responsive to Council Docket UD-21-03. If you have any questions, please do not hesitate to contact me.

Sincerely,



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Broderick A Bagert, Jr.  
Organizer  
Together New Orleans

CC: Office Service List (UD 21-03)

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

**In Re: SYSTEM RESILIENCY AND STORM HARDENING**

**DOCKET NO. UD-21-**

**03**

**RESILIENCE FILING**

Together New Orleans (“TNO”), in compliance with the requirements of Resolution No. R-21-401 issued on October 27, 2021 (the “resolution”), submits what it seeks to be viewed, not as a comprehensive plan for system resiliency and storm hardening plan, which falls outside the organization’s expertise and scope, but as a contribution to that overall plan, submitted specifically in the hopes of strengthening the “resilience” side of the docket. TNO’s filing was developed in consultation with the Pacific Northwest National Laboratory (“PNNL”), which provides technical assistance to TNO under the United States Department of Energy’s Energy Storage for Social Equity initiative in support of TNO’s Community Lighthouse strategy. Indispensable as PNNL’s technical assistance has been to TNO and the development of its ideas and proposals, the plans and analysis reflected in this filing, including any errors therein, are TNO’s own.

**I. INTRODUCTION: the contribution TNO seeks to make**

TNO understands the current docket to be a call for plans that address two related, but conceptually distinct, aspects of storm readiness: “storm hardening,” on the one hand, which entails the extent to which the electrical grid is capable of withstanding stress and avoiding system failure; and “system resilience,” on the other, which deals with the extent to which the system maintains the ability to operate in full or reduced form in the event the grid does fail.<sup>1</sup> This distinction between the terms “hardening” and “resilience,” TNO is aware, is not

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<sup>1</sup> Kintner-Meyer, Michael (PNNL), “Towards Metrics for Resilience Characterization and Challenges in Valuing Distribution System Resilience Improvements,” April 2021

universally drawn; the two terms, indeed, often are used as though they were interchangeable. TNO believes the distinction is an important one, however.

The fact is, the state of utility planning is at a very different place with respect to grid-hardening and reliability, on the one hand, than it is in relation to system resilience, on the other. Reliability, as a system goal, is far better understood than is resilience – the metrics to assess it are more clear; the investments to improve it are more established; the cost-recovery mechanisms to fund it are more regular and more mature. System resilience, by contrast, is still early in the process of emerging as a system goal for utility planning, not just in New Orleans, but across the country and the world. As a recent PNNL analysis explains:

Electric grid planning processes are designed to meet two objectives: maximizing reliability while minimizing cost. With the body of reliability standards and metrics that have been established, both objectives can be easily defined, measured, and incorporated into grid models. **The lack of similar standards and metrics for emerging objectives related to the equity and resilience of the electric grid, however, means those objectives do not readily fit within traditional planning paradigms.** It also makes it difficult for utility planners to justify proposed investments in equity and resilience to utility managers and external reviewers, who do not have an objective means of reviewing the benefits of those investments relative to other investment options.<sup>2</sup>

The point here is not that resilience is more important than storm hardening, or vice versa; both, needless to say, are essential. The important point is that contributions to improved resilience will require, by their very nature, more flexibility and a willingness to innovate than will improvements to reliability and hardening. Resilience deserves, for that reason, a specialized, intentional focus. It is on that side of the docket – in the service of resilience – that TNO seeks to make a contribution.

## II. SUMMARY OF TNO PROPOSAL

Together New Orleans proposes that the Council of the City of New Orleans adopt the “New Orleans Resilience Standard,” based upon residential proximity to a distributed-energy-resource resilience hub that can operate independent of the grid. The standard would set as an objective that every resident of New Orleans have a resilience hub within a half mile of their home, which meets a basic level of service provision – cooling center, charging station, publicly

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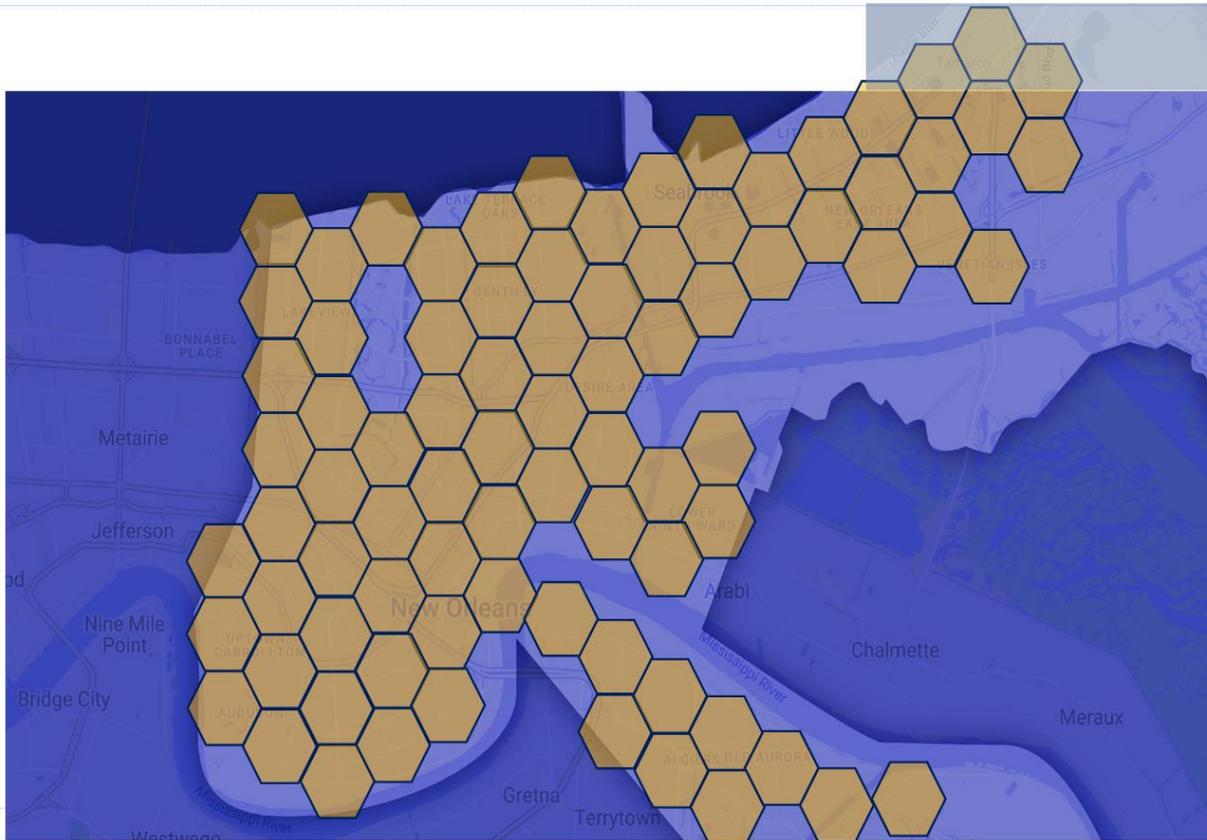
<sup>2</sup> Twitchell, Jeremy, et al, “Equitable Grid Resilience Planning: an Outline,” May 2022.

available – and which has the distributed energy and storage capacity to operate for at least 10 days after the electric grid fails.

TNO submits below a plan for investments that would bring the City as a whole into compliance with that standard, including an estimate of the costs of those investments and the benefits they would bring about. TNO proposes, finally, that a funding mechanism be developed under which projects that move a neighborhood from non-adherence to adherence with the half-mile resilience standard, with Council approval, would be eligible for funding.

### III. INVESTMENT PLAN AND PROJECT COSTS

TNO estimates that it would require approximately eighty-five neighborhood-level resilience hubs for every neighborhood in the City of New Orleans to be brought into compliance with the New Orleans Resilience Standard articulate above, with no resident living further than a half-mile from a resilience hub. In the map below, the half-mile hexagons indicate a rough approximation of the network that would be required.



The figure of eighty-five locations should be viewed as an estimate, meant to give an approximation of the scale of project investment that would bring the entire City into compliance with the New Orleans Resilience standard TNO is proposing. Some neighborhoods with higher-density populations may benefit from having more than one resilience hub per half-mile area. Other less densely populated areas may require fewer hubs than the half-mile standard. But with the half-mile standard uniformly applied, the number of neighborhood-level projects would be approximately eighty-five.

As part of its Community Lighthouse project, Together New Orleans, working with 127 Energy and Solar Alternatives, has conducted detailed site analyses and facility plans for thirteen community institutions across New Orleans to provide each with a plan for commercial-scale solar and back-up battery systems that would allow them to operate as resilience hubs during an outage. Each project and facility differs, but the projects cluster broadly into three categories of size and expense, with “large” projects costing, on average, \$935,000 per facility; medium projects costing approximately \$510,000 per project and small facilities costing approximately \$160,000 per project. The average cost for a resilience hub, among the thirteen detailed assessments completed, is \$575,800 per location.

This expense includes the upfront cost of engineering, equipment procurement, and construction of the solar and battery energy storage systems. Each lighthouse also includes long term (20-year) services agreements that provides a comprehensive operations and maintenance wrap of the integrated energy system.

Eighty-five sites at an average cost of \$576,000 per site results in a full implementation cost of \$48.9 million. The funding gap, however, is substantially less than this amount. The projects are eligible for federal tax credits and the Community Lighthouse project has raised approximately \$5 million in philanthropic and government funds already. Applying the 35% metric for tax equity investment and the funds already raised by the Community Lighthouse project, the funding gap is approximately \$26.8M.

#### **IV. COST TO CUSTOMER – A ROUGH INDICATION**

TNO does not have access to the modeling tools that would be required to estimate the cost to customers of an additional \$26.8 million in capital expense. The amount, it should be noted, is approximately 2% of the \$1.3 billion being proposed by Entergy New Orleans for grid hardening. If one applies the same multiplier used by ENO to estimate the impact on residential bills of its grid hardening investment, the change to residential bills would represent an increase of approximately \$0.65.<sup>3</sup> That figure is not meant as an actual projection, because the circumstances of the two forms of capital investment in question are distinct and likely would require different form of analysis to determine the actual impact on bills of each. But the figure should give a rough indication of the scale of cost of the implementation of the resilience hub project, even at its full scale. It shows, in short, that investment in resilience hubs, by comparison, are cheap.

#### **V. THE BENEFITS**

The benefits of developing the network of resilience hubs describe above are substantial. It would substantially improve neighborhood-embedded disaster response capacity, providing local staging and deployment grounds for GOHSEP, NOSHEP, NOLA Ready and other disaster-response efforts. Nearly 3,000 New Orleans residents depend upon electricity-powered medical devices. These residents face acute threats during long-duration outages – one of the reasons that power outages have become the most common cause of death from hurricanes in recent years. Creating a network of resilience hubs within a half-mile of each of those residents would make it possible to make sure every one of those residents, and any vulnerable resident, receives a wellness check within twenty-four hours and receives the resources, including deployable batteries, that may be the difference between life and death.

Other benefits of this model come from the ability to leverage private investment, substantially reducing the cost to customers. Based on the current 26% investment tax credit

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(ITC), roughly 35% of project costs are funded from tax equity investment. The 26% ITC applies to full cost of the solar and battery storage systems. The batteries are exclusively charged by solar energy, which is a key qualifier for the determining the eligible ITC basis. The 35% threshold funded by third-party tax equity is not fixed as the aforementioned percentage is impacted by a number of factors including:

- The ratio of solar array sizing compared to battery storage energy capacity
- The production yield of the solar energy system
- The extent of cost recovery mechanisms implemented by ENO
- The ongoing cost of 20-year services agreement

But overall, the ability to leverage tax credit investment, along with the capacity to attract philanthropy and federal funds for an innovative model, will result in substantial cost savings to rate-payers. The project described here, it should be pointed out, would make New Orleans home to the largest network of resilience hubs in the world.

## **VI. COST RECOVERY MECHANISMS**

The funding gap can be addressed via various forms of cost recovery including monetization of ancillary energy services and on-bill charges similar to the [Energy Efficiency EECR Rider](#). One option for the on-bill charge is a 'Resilience Hub Rider' used for recovery of program costs for Community Lighthouse. Rider rates will be established and applied per rate class.

Similar to existing demand response programs, ENO can retain the ability to discharge battery energy systems and mitigate the demand for peaking resources, thereby saving the company on operating expenses. ENO can also access revenue via ancillary energy services by monetizing the standby capacity of battery energy storage systems in the MISO power market. Both of these value propositions can result in direct compensation from ENO to third-party asset owners of distributed battery energy storage systems in ENO territory.

## **CONCLUSION**

New Orleans is well-positioned to make a major contribution to what it means for a system, and a community, to be resilient. The project described here has grown, not from planning “from above,” but from community driven interest from below. The Community Lighthouse vision emerged through an engagement process with more than two-thousand residents, including house meetings, community-led research, “civic academy” sessions and, ultimately, a community-wide assembly attending by more than 1,000 people.

The potential in this vision, however, goes beyond deep community support. It represents an opportunity to make a genuine contribution to current practice nationally on how a utility system invests in resilience. It represents an opportunity to become a world standard for community-driven utility planning and grid-resilience.

**CERTIFICATE OF SERVICE**

**Docket No. UD-21-03**

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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