



community  
lighthouse

# NEIGHBORHOOD RESILIENCY CENTERS

WITH SOLAR & BATTERY STORAGE

**TOGETHER**  
NEW ORLEANS

# STRATEGY

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Engage **85 to 100 congregations and community institutions** citywide to create a network of resiliency hubs, each with **commercial-scale solar power** and **back-up battery capacity**.

During power outages those institutions begin operating immediately to **assess need and provide assistance** to their surrounding communities.

# FOUR GOALS OF COMMUNITY LIGHTHOUSE



RESILIENCY DURING GRID OUTAGES



STRONGER DISASTER RESPONSE CAPACITY



LOCAL INVESTMENT IN RENEWABLE ENERGY



WORKFORCE TRAINING & JOBS



# community lighthouse

solar • battery

Click anywhere on image to  
start the 2-minute video

# COMMUNITY-EMBEDDED RESPONSE



When the power fails, **Community Lighthouses**:

1. Conduct **needs assessments** to determine what neighbors need
2. **Provide for those needs** with flexibility to offer:



**Charging stations / small battery distribution**



**Food preparation / distribution**



**Cooling / heating stations**



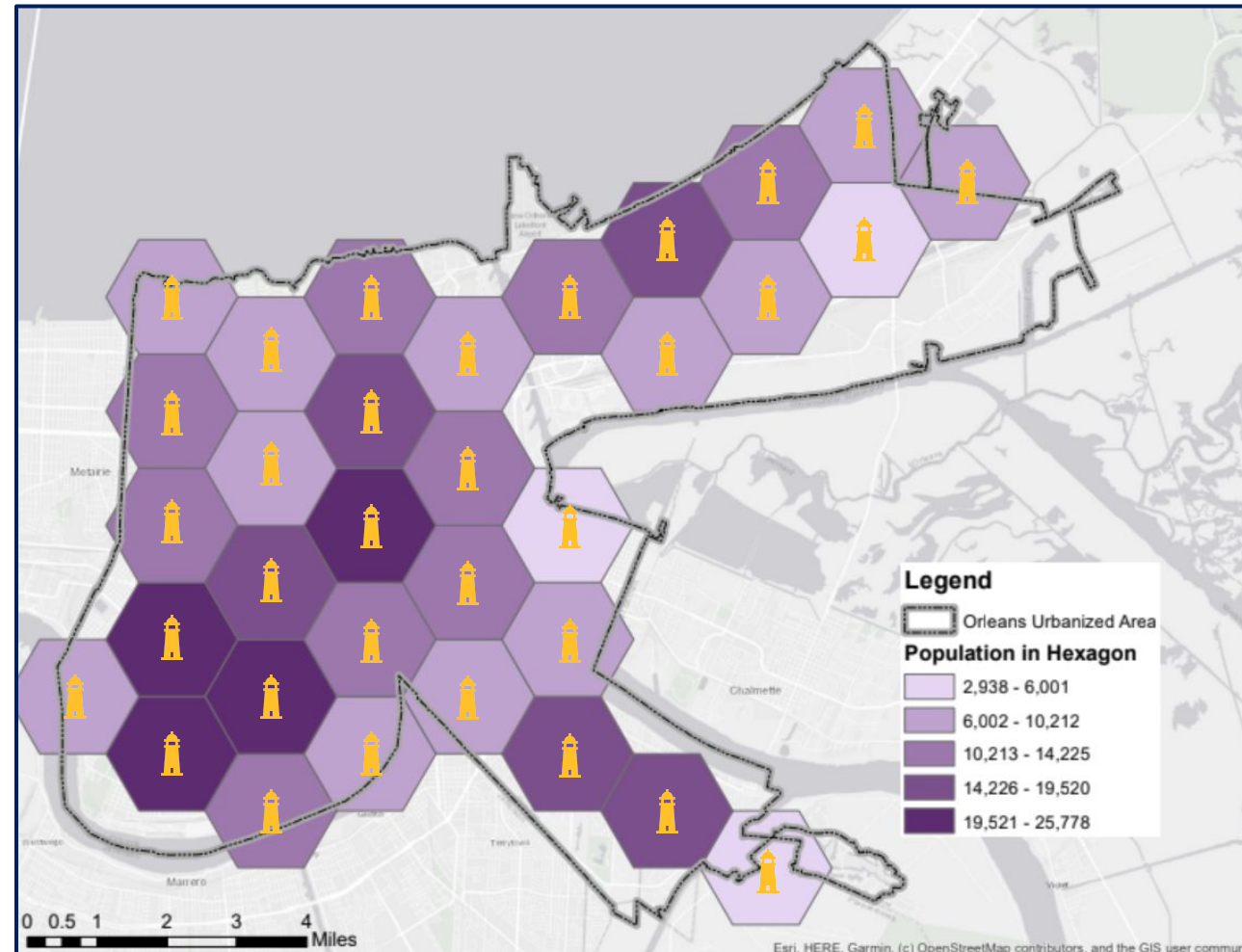
**Oxygen exchange and light medical equipment**

**...and more**, given capacity.

# A RESILIENCY NETWORK



Every New Orleans resident would live **within a 15-minute walk** of a lighthouse



# WORKFORCE DEVELOPMENT



Solar jobs are among the fastest-growing in the country



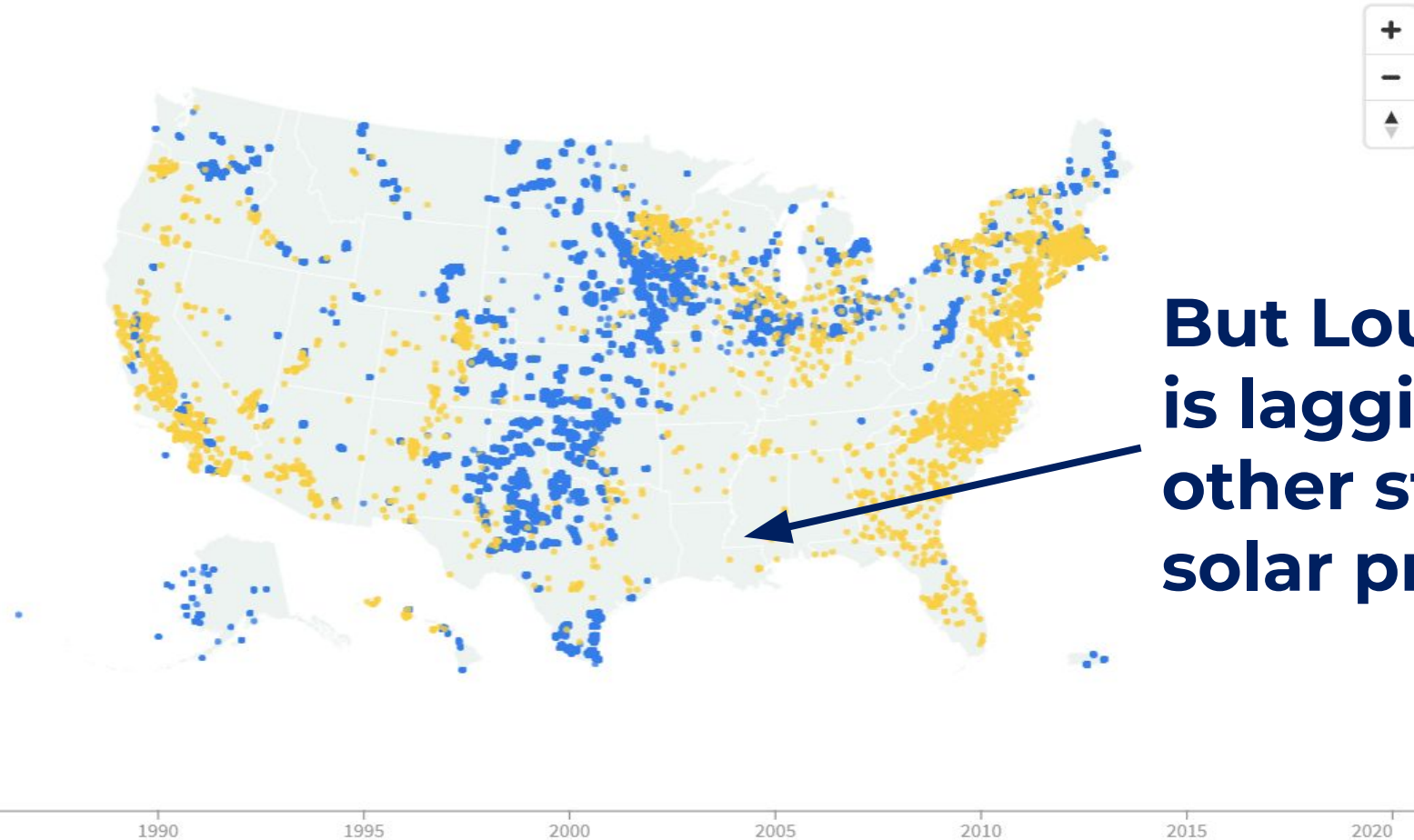
10 occupations with the highest percent change of employment between 2019-2029

OCCUPATION	GROWTH RATE, 2019-29	2020 MEDIAN PAY
Wind turbine service technicians	61%	\$56,230 per year
Nurse practitioners	52%	\$111,680 per year
Solar photovoltaic installers	51%	\$46,470 per year
Occupational therapy assistants	35%	\$62,940 per year
Statisticians	35%	\$92,270 per year
Home health and personal care aides	34%	\$27,080 per year
Physical therapist assistants	33%	\$59,770 per year
Medical and health services managers	32%	\$104,280 per year
Physician assistants	31%	\$115,390 per year
Information security analysts	31%	\$103,590 per year

# WORKFORCE DEVELOPMENT



U.S. Wind and Solar Projects, 1981-2021



**But Louisiana is lagging other states on solar projects**



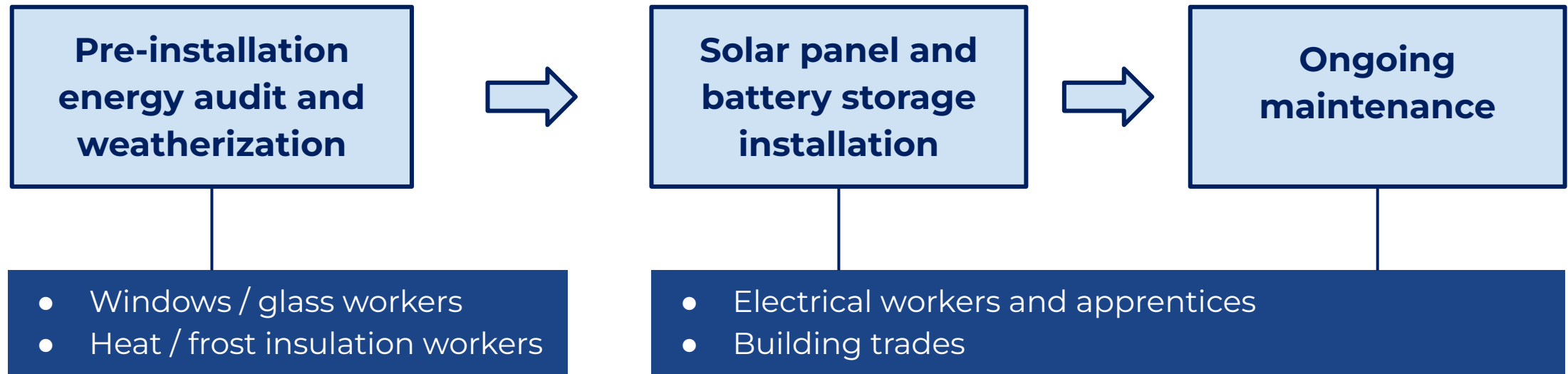
Source: Wind: Hoen, B.D., Diffendorfer, J.E., Rand, J.T., Kramer, L.A., Garrity, C.P., and Hunt, H.E., 2018, United States Wind Turbine Database (v4.1, July 21, 2021); U.S. Geological Survey, American Clean Power Association, and Lawrence Berkeley National Laboratory data release, Solar: Preliminary Monthly Electric Generator Inventory (based on Form EIA-860M as a supplement to Form EIA-860), April 2021.



# WORKFORCE DEVELOPMENT



The Community Lighthouse Project will have project labor agreements to hire **local workers** at **living wages** for all stages of the process.





# ESTIMATES

## LARGE FACILITY: \$990K avg

## MEDIUM FACILITY: \$432K avg

## SMALL FACILITY: \$150k AVG

## Cost estimate for 85 sites: \$42M

### LARGE FACILITY HOUSEHOLD OF FAITH



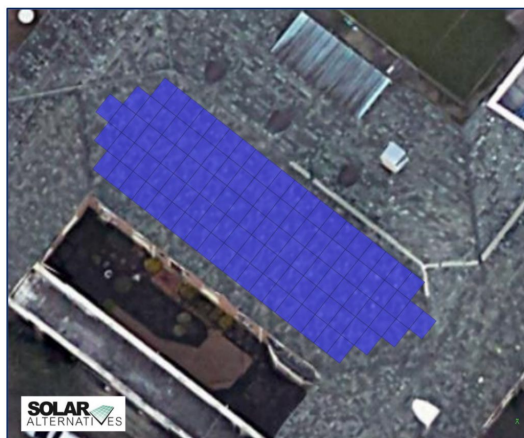
**Type and size of panel:** 400W 72 Cell modules, 39"x78"  
**# of panels:**  
 450kW maximum (1395)  
 192kW recommended (312)  
**Solar panel capacity & capital costs:**  
 192kW: \$307,200  
**Battery capacity and capital costs:**  
 858kWh: \$513,942  
**Total capital, development & program costs:**  
 \$993,449

**LARGE COMMERCIAL-SCALE SYSTEM**  
 Capable of operating:

- 2 or 3 HVAC units 24/7
- lights
- computers
- charging stations
- light medical equipment
- TVs
- fans

Solar preliminary designs and specifications provided by Pierre Moses, 127 Energy (pmoses@127energy.com).  
 Solar Assumptions: Typical equipment and turnkey installation costs provided. Specified equipment is indicative for the application (Powerwall, Dynapower etc). Estimated loads based on average usage, good weather. Energy conservation is required.

### MEDIUM FACILITY FIRST GRACE UMC



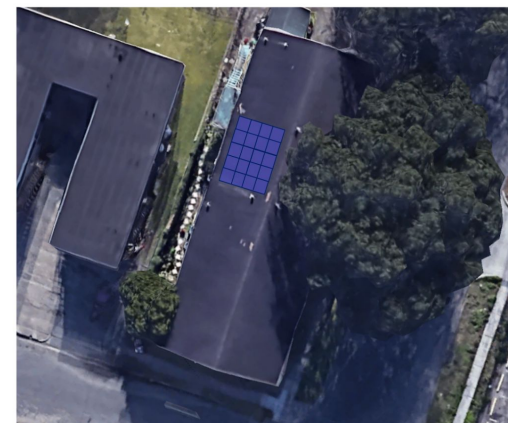
**Type and size of panel:** 60 cell black/black module, microinverter system 39"x66"  
**# of panels:**  
 80kW (206 modules)  
**Solar panel capital costs:**  
 \$168,000  
**Battery capacity and capital costs:**  
 264kWh: \$219,000  
**Total capital, development & program costs:**  
 \$448,199

**Medium COMMERCIAL-SCALE SYSTEM**  
 Capable of operating:

- 1 or 2 medium central HVAC unit 24 hrs/day (or multiple small/minisplit units)
- lights
- computers
- charging stations
- TVs
- fans

Solar preliminary designs and specifications provided by Pierre Moses, 127 Energy (pmoses@127energy.com).  
 Solar Assumptions: Typical equipment and turnkey installation costs provided. Specified equipment is indicative for the application (Powerwall, Dynapower etc). Estimated loads based on average usage, good weather. Energy conservation is required.

### SMALL FACILITY PILOT INSTITUTION: Bethlehem Lutheran Church



**Type and size of panel:** 60 cell black/black module, microinverter system 39"x66"  
**# of panels:**  
 25kW (68 modules)  
**Solar panel capacity & capital costs:**  
 \$52,500  
**Battery capacity and capital costs:**  
 52kWh: \$63,960 (equivalent of four Tesla Powerwall2 AC)  
**Total capital, development & program costs:**  
 \$134,883

**SMALL-SCALE SYSTEM**  
 Capable of operating:

- medium HVAC unit 12 - 18 hrs/day
- lights
- computers
- charging stations
- TVs
- fans

Solar preliminary designs and specifications provided by Pierre Moses, 127 Energy (pmoses@127energy.com).  
 Solar Assumptions: Typical equipment and turnkey installation costs provided. Specified equipment is indicative for the application (Powerwall, Dynapower etc). Estimated loads based on average usage, good weather. Energy conservation is required.



# PILOT PHASE (construction goal for 2022)

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## 10 PILOT LOCATIONS IN 2022

- 3 LARGE
- 4 MEDIUM
- 3 SMALL

Total cost for pilot phase: \$4.6M

Current cost gap: \$2.5M

# SUPPORT



**Department of Energy selected Community Lighthouse as one of 14 projects nationally to receive technical support under its “Energy Storage for Social Equity” initiative**



**Unanimous support from New Orleans City Council**



**\$500,000 grant for Lighthouse at CrescentCare**



**Episcopal  
Relief & Development**

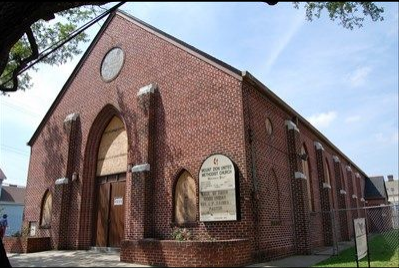
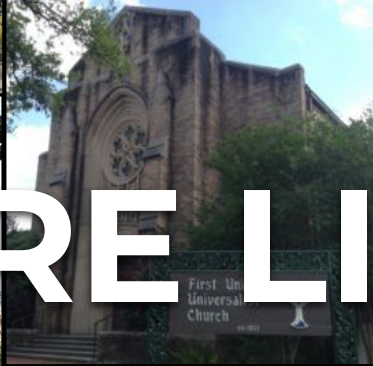
**\$150,000 grant for disaster response team development**



# TNO COMMUNITY LIGHTHOUSE TEAM

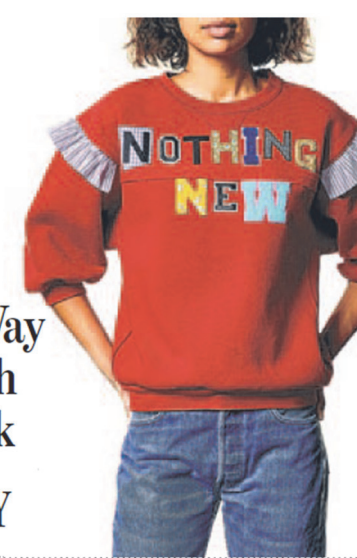


# FUTURE LIGHTHOUSES!





The New Way  
To Refresh  
Your Look  
OFF DUTY



### POWER STRUGGLE

# America's Backup Plan

Wary of being left in the dark, homeowners and businesses are increasingly producing their own power—if they can afford to

By JENNIFER HELLER

**A**s the American electric grid becomes less dependable, a growing number of businesses and homeowners are buying their own power systems to protect themselves from being left in the dark.

Twenty years ago, only 0.57% of U.S. homes worth \$150,000 or more had installed backup generators, mainly along hurricane-prone coastlines, according to backup-power provider Generac Holdings Inc. Now the number is 5.75%, a 10-fold increase.

Manufacturers delivered more than 143,000 generators last year in North America, up from 138,778 in 2015, despite pandemic-related supply-chain logjams, said Lucrecia Gomez, a research director at consulting firm Frost & Sullivan. Microgrids, which can create islands of power for campuses, businesses or neighborhoods amid a blackout, grew more than sevenfold between 2010 and 2019, according to the industry group Edison Electric Institute.

Many entrepreneurs now consider secondary power systems to be a necessary cost of doing business. Steve Peterson, who owns Hungry Howie's Pizza franchises in Michigan, learned their value in 2003, when a massive blackout knocked out power to much of the Midwest and Northeast. Mr. Peterson had invested in backup generation—and said he had lines of people who wanted a hot meal stretching 200 to 300 feet out the door.

"It was like people were waiting in line for concert tickets," Mr. Peterson said, adding that the generators paid for themselves in a few days. Since then he has grown

### The backup power system at a Hungry Howie's franchise paid for itself within days.

from about four locations to 15 in Michigan, all with backup power.

New systems cost around \$25,000 per location, he said, but help avoid the seven to eight power outages each year that would otherwise cause him to throw out food. "You can sleep at night," he said.

Reliability isn't the only driver of the power-independence trend. The cost of renewables have fallen enough that some companies are adding on-site renewable energy to reduce their use of power from the electric grid or to meet corporate sustainability goals.

Whirlpool Corp. installed wind turbines near a dishwasher factory in Findlay, Ohio, where a large share of electricity generation comes from coal, after it started tracking its greenhouse gas emissions. The turbines don't supply all of the factory's power, but provide electricity at a locked-in price for 20 years.

"It's not just green," said Ron Voglewede, global sustainability lead at Whirlpool. "It's also just cheaper."

The ability to add battery systems to homes to store large amounts of power is a relatively new market, tied to the rise in solar-panel installation. While battery costs have plummeted, adding them often extends the time it takes for home solar to pay off, said Chloe Holden, an analyst with Wood Mackenzie. People are installing them nonetheless.

After a winter storm knocked out power to most of Texas last February, home solar company Sunrun Inc. said traffic to its website spiked 350%. In California, the company said orders for solar paired with battery storage rose following devastating wildfires and policies by utilities such as PG&E



The backup system at the Holly Hall Retirement Community, above, has become a selling point for residents, right. Pastor Gregory Manning and Broderick Bagert, below, want to bring solar power to 85 New Orleans spots, like the Broadmoor Community Church, bottom.



Corp. to shut off electricity in certain areas during high winds to reduce the risk that downed power lines could spark fires.

Microgrids such as those sold by Enchanted Rock Holdings LLC provide backup power for customers such as grocers, data centers and water plants that never want to go dark. The natural gas-powered systems can operate independent of the grid or sell power into the grid when electricity prices are high. New customers have included pharmaceutical manufacturers and senior-living centers—

the kind of businesses that used to consider outages "a one-off and nothing really to protect against," said the company's chief executive, Thomas McAndrew.

Houston's Holly Hall Retirement Community experienced about four eight-hour outages each year before installing one of the microgrids. Now, "the lights don't even flicker" during storms, said Amy S. Ward, a senior director at Holly Hall.

The nonprofit previously depended on diesel generators, but running out of fuel would have re-

quired an evacuation—and potentially imperiled the health of residents, many of whom rely on medical devices that need power to operate. During last year's winter storm, with the power out across much of Texas, residents stayed warm and the microgrid fed power into the state grid. Holly Hall touts the consistent power supply on its website: "Take a deep breath, and relax," it reads.

After losing power and discovering that his fireplace was "more for decoration" than warmth during the Texas freeze, Tyler Troutman invested about \$10,000 in a generator that will keep the power on the next time the grid fails. "Both my wife and I work from home, so we have Zoom meetings," Mr. Troutman said.

Not everyone can invest in backup power, though. When Hurricane Ida knocked out the eight transmission lines carrying electricity into New Orleans in September, many people spent days in the dark.

Brenda Lomax-Brown, president of the city's Hollygrove-Dixon Neighborhood Association, said median incomes of around \$30,000 made it difficult for many in the area to evacuate or afford generators. Challenges included spoiled food, the inability to refrigerate medicine, and the difficulty for the elderly to find a place to stay cool.

Cell phones died and cut off communications.

"People were desperate," said Ms. Lomax-Brown.

New Orleans nonprofits are now stepping in to try to provide emergency power. Together New Orleans, a coalition of religious and civic groups, is raising money to add rooftop solar with batteries to 85 congregations and community centers. Their goal is for everyone in New Orleans to be a mile or less away from what they are calling "community light-houses," said Gregory Manning, pastor at Broadmoor Community Church.

"You get the ordinary benefits of solar, but if and when the grid goes out, you've got a real network that can respond," said Together New Orleans organizer Broderick Bagert.

Another nonprofit, Feed the Second Line, has launched a "Get Lit, Stay Lit" effort to add similar systems to neighborhood restaurants.

"After a major hurricane, there's no gasoline, there's no driving around the city. The logistics are impossible," said Feed the Second Line board member Devin De Wulf. "What we need is to go block by block, neighborhood by neighborhood and make sure that there's little hubs of resiliency that are already built in."

MEREDITH KORUT FOR THE WALL STREET JOURNAL (2); KATHLEEN EYVYN FOR THE WALL STREET JOURNAL (2)



## Department of Energy

Washington, DC 20585

February 14, 2022

Dear Friends:

Congratulations! Your application for technical assistance under the Energy Storage for Social Equity program has been selected. I am happy to offer your community a place in this new initiative.

The Energy Storage for Social Equity program vision is to better understand Urban, Rural, and Tribal needs from the energy system and to explore together how energy storage can help to better supply these needs. We will provide technical assistance for economic analysis, initial engineering work, social equity analysis, and local collaborations. Some of the initial group of communities will eventually be supported with direct demonstration funds.

The team at Pacific Northwest National Laboratory will follow up with you to confirm your interest and to develop a scope of work together. Thank you for your application, and we look forward to work with you in the future.

With best greetings,

A handwritten signature in blue ink that reads "Imre Gyuk".

Dr. Imre Gyuk, Director,  
Energy Storage Research  
Office of Electricity  
U.S. Dept. of Energy





HELENA MORENO  
COUNCILMEMBER AT-LARGE

Office (504) 658-1060  
1300 Perdido Street • Suite 2W40  
New Orleans, Louisiana 70112

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*New Orleans City Council*

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April 8, 2022

Congressman Troy A. Carter  
506 Cannon House Office Building  
Washington, DC 20515

Dear Congressman Carter,

I write today to offer my strongest possible support for community project funding to support the **Community Lighthouse Project**, a strategy to create a network of resiliency hubs with solar panels and backup batteries to respond in the wake of natural disasters.

As you know, we have been consistently challenged with the growing threat of climate change. Storms are coming faster and growing stronger than ever. Our community faces increased urban heat effect, stronger downpours, and rising seas, among a variety of increasing environmental threat.

In the past year, these climatological threats are increasingly undermining critical infrastructure. In the past year, our community has faced multiple power distribution interruptions that effect the health and safety of our people. The Community Light House project is specifically targeted to provide relief from these types of disruptions and provide ongoing resilience in our community no matter what the climate brings us.

We strongly support this project and hope to see it come into fruition through a collaborative effort between local, state, and federal stakeholders.

Thank you for all the work you do on behalf of the people of Louisiana.

Sincerely,

A handwritten signature in black ink, appearing to read "Helena Moreno".

Helena Moreno  
President, New Orleans City Council  
Chair, Climate Change and Sustainability Committee



JOSEPH I. GIARRUSSO III  
DISTRICT A

OFFICE: (504) 658-1010  
FAX: (504) 658-1016  
City Hall, Room 2W80  
1300 Perdido Street

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NEW ORLEANS CITY COUNCIL

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April 11, 2022

The Honorable Troy A. Carter, Sr.  
506 Cannon House Office Building  
Washington, D.C. 20515

Dear Representative Carter,

It is my pleasure to sign this letter of support for community project funding to support the Community Lighthouse Project, a strategy to create a network of resiliency hubs with solar panels and backup batteries to respond in the wake of natural disasters and power outages.

The New Orleans City Council is dedicated to improving resiliency on all fronts. The destruction of Hurricane Ida proved how reliable, accessible backup power is much needed across the city, especially for our most vulnerable populations. The proposed resiliency hub network of the Community Lighthouse Project is an essential service for all neighborhoods.

Thank you,

A handwritten signature in blue ink that reads "Joe Giarrusso III".

Joseph I. Giarrusso III



JP MORRELL  
COUNCILMEMBER AT-LARGE

Office (504) 658-1070  
1300 Perdido Street • Suite 2W50  
New Orleans, Louisiana 70112

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## New Orleans City Council

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April 11, 2022

Honorable Troy Carter  
Congressman, District 2  
506 Cannon House Office Building  
Washington, DC 20515

Dear Congressman Carter:

This correspondence serves as a letter of support for Community Project Funding to support the Community Lighthouse Project, a strategy to create a network of resiliency hubs with solar panels and backup batteries to respond in the wake of natural disasters. This project has the potential to add significant support to our local efforts to further decrease our reliance on fossil fuels. Increasing access to renewable energy options is a pillar in our plan to combat climate change. We remain committed to taking aggressive action to curbing harmful emissions and we applaud Together New Orleans for their work in furtherance of our collective goal.

I appreciate your support of the Community Lighthouse Project and look forward to seeing this vision come to fruition. Please contact my office with any questions.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "JP Morrell", written over a horizontal line.

JP Morrell  
Councilmember-at-Large



**LESLI D. HARRIS**  
**COUNCILMEMBER, DISTRICT B**

**OFFICE: (504) 658-1020**  
**CITY HALL, ROOM 2W10**  
**1300 PERDIDO STREET**

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**NEW ORLEANS CITY COUNCIL**

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April 8, 2022

The Honorable Troy A. Carter, Sr.  
506 Cannon House Office Building  
Washington, DC 20515

Dear Congressman Carter:

I am pleased to extend my enthusiastic support for community project funding for the Community Lighthouse project. This funding will allow for the creation of a network of resiliency hubs with solar panels and backup batteries, which will be used in the wake of disasters to assess need and provide assistance to New Orleans neighborhoods. Along with powering neighbors, the project serves as workforce development, with living wage positions for local workers at all stages of the process. I was excited to hear about this project at the Council's recent Climate and Sustainability Committee meeting and look forward to its coming to fruition.

Sincerely,

A handwritten signature in black ink that reads "Lesli D. Harris".

Lesli D. Harris



OLIVER M. THOMAS  
COUNCILMEMBER - DISTRICT E

Office (504) 658-1050  
1300 Perdido Street • Suite 2W20  
New Orleans, Louisiana 70112

*New Orleans City Council*

April 8, 2022

The Honorable Troy A. Carter, Sr.  
506 Cannon House Office Building  
Washington, DC 20515

**Re: Letter of support for TNO's Community Lighthouse Project**

Dear Congressman Carter:

Please accept this letter as my support for the TNO's Community Lighthouse Project. I am excited about this great opportunity. This project is a strategy to create a network of resiliency hubs with solar panels and backup batteries to respond in the wake of natural disasters. I fully support this endeavor and ask that you assist with funding the project.

Thank you for your assistance and cooperation in this matter. Should you need any additional information, please feel free to contact me.

With regards, I remain

Sincerely,

A handwritten signature in black ink, appearing to read "O. M. Thomas, Jr.", written in a cursive style.

Honorable Oliver M. Thomas, Jr.  
New Orleans City Council, District E



EUGENE J. GREEN, JR.  
COUNCILMEMBER - DISTRICT D

Office (504) 658-1040  
1300 Perdido Street • Suite 2W20  
New Orleans, Louisiana 70112

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*New Orleans City Council*

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April 11, 2022

Congressman Troy Carter  
3401 General DeGaulle Drive  
Suite 100  
New Orleans, LA 70114

Dear Congressman Troy Carter:

I am writing to offer my support for community project funding to support the Community Lighthouse Project, a strategy to create a network of resiliency hubs with solar panels and backup batteries to respond in the wake of natural disasters.

Sincerely,

*Eugene J. Green, Jr.*

Eugene J. Green, Jr.  
Councilmember District D  
New Orleans City Council