



STATE OF LOUISIANA | Grid Resilience and Innovation Partnerships
Hubs for Energy Resilient Operations (HERO)

DE-FOA-0002740

Topic Area 3: Grid Innovation Program (Section 40103(b))
Grid Resilience and Innovation Partnerships (GRIP)

Entity type: State

Project Title:

State of Louisiana: Louisiana Hubs for Energy
Resilient Operations (HERO) Project

May 18, 2022

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HERO Project Team



Project Lead: State of Louisiana State Energy Office

Louisiana Office of Governor John Bel Edwards
Louisiana Public Service Commission
Governor's Office of Homeland Security and Emergency Preparedness
CLECO Power
Entergy New Orleans
Entergy Louisiana
Southwestern Electric Power Company
Terrebonne Parish Consolidated Government
Together Louisiana
Center for Planning Excellence
University of Louisiana at Lafayette
Xavier University of Louisiana
City of New Orleans
The Accelerate Group
NextGen Energy Partners



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Project Overview

To help solve the U.S. energy security crisis and protect American communities from more frequent and intense natural disasters and extreme weather, the State of Louisiana Energy Office along with its intrastate agencies formed the Louisiana Interagency Work Group¹ and catalyzed first-of-a-kind collaborations to seize once-in-a-generation Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA) stimulus towards next generation grid resilience and innovation projects applying a multi-stakeholder framework and community-centric approach.

The State of Louisiana in collaboration with municipalities, utilities, research institutions and community organizations will launch a strategic energy resilience initiative, the Louisiana Hubs for Energy Resilient Operations (HERO) Project. The HERO Project sets the foundation for accelerating more abundant, affordable, and reliable clean energy for greater power resilience in the face of extreme weather. The initiative will advance energy security measures, carbon reduction targets, equity and environmental justice priorities and a sustainable workforce through strategic grid infrastructure investment.

The State of Louisiana and its multi-discipline and diverse project team members have developed a comprehensive implementation plan (Workplan) that comprises three main phases designed to meet the HERO Project objectives. The phases are to be implemented over the Grid Resilience and Innovation Partnership (GRIP) Section 40101(c) 8-year award period beginning January 2024 ending September 2031. For the State of Louisiana, the timeframe is Federal Fiscal Year 2024 through 2032.

- **Phase I: Integrated Community Energy Planning (ICEP)** – Design and implement a new community-centric model for energy resilience project planning aimed to protect disadvantaged communities during unplanned power outages and includes planning for non-wires alternatives, new grid services, and microgrid workforce development.
- **Phase II: Deploy Community Resilient Hubs** – Pilot and deploy a network of Hubs as distributed energy resources with carbon-free power and long-duration storage for selected Resilient-in-Place Hubs, Evacuation Route Hubs, and Critical Facility Hubs in rural and urban regions to serve communities most at risk from environmental and economic harms.
- **Phase III: Enhance State Emergency Response** – Test, validate and implement advanced grid technologies to successfully integrate the network of HERO Hubs with the existing utility electric distribution assets to enhance state emergency operations by optimizing the use of HERO Hubs during natural disaster and extreme weather events.

Strategic Priorities

The HERO Project Team is fully aligned and committed to the established key strategic priorities for the project supporting the State of Louisiana energy resilience priorities, decarbonization targets, and clean energy economic growth goals.

¹ The Interagency Work Group is composed of representatives from: State of Louisiana Governor's Office, Department of Natural Resources; Office of Homeland Security and Emergency Preparedness, Division of Administration; and Louisiana State Public Service Commission.



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Table 1. Strategic Priorities for Louisiana HERO Project

- Mitigate threats to energy supply and climate-related risks to preserve social and economic value.
- Provide 24/7 power to residents, vulnerable populations, and disadvantaged communities during emergency events.
- Adopt clean distributed energy resources as a pathway to a resilient carbon-free grid aligned with net zero targets.
- Design enhanced methodologies for community-centric grid investment planning.
- Develop advanced grid technologies to integrate distributed energy resources with existing grid distribution systems.
- Boost community resilience with enhanced emergency response operations across at-risk rural and urban regions.
- Lower energy burden and reduce future storm securitization costs.
- Foster local sustainable workforce with good paying jobs.

The HERO Project is in alignment with the State of Louisiana’s commitment and efforts to build a resilient, inclusive, and sustainable economy, established through the Louisiana 2022 Climate Action Plan and the Louisiana Interagency Work Group (Work Group). The Work Group, launched in 2022, was formed to share best practices, engage stakeholders, and collaborate on near-term opportunities and long-term strategies to achieve energy resilience. HERO advances the Strategic Priorities in Table 2 and has support of Louisiana Governor John Bel Edwards.

Project Goals

The Project has developed a set of SMART (specific, measurable, achievable, relevant, and time-bound) goals for the effort. A summary of those goals and annual metrics is below.

Table 2. Project SMART goals and milestones

Goal	Metric	2024	2025	2026	2027	2028	2029	2030	2031
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
(b) (4)		■	■	■	■	■	■	■	■
				■	■	■	■	■	■
		■	■	■	■	■	■	■	■
		■	■	■	■	■	■	■	■
		■	■	■	■	■	■	■	■



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Based on the results of the Integrated Community Energy Planning process in Phase I, the project team will adopt additional SMART goals related to provision of grid services during blue sky days.

DOE Impact

Without support from the DOE under the GRIP program, these projects may be delayed for decades, or completed piecemeal when capital funding is available, while the communities are struck again and again by hurricanes and other storm events. FEMA funding is not available for building new resilience strategies. The Bipartisan Infrastructure Law is a once-in-a-generation opportunity to address resilience challenges faced in Louisiana communities.

Funds leveraged. The HERO project will leverage (b) (4) in private capital as part of its efforts.

Reduction in outage duration. During Hurricanes Ida, Laura, and Delta, critical communities in Louisiana faced widespread outages for more than 10 days, and some locations took more than 30 days to see greater than 90% of power restored (b) (4)

Reduction in outage impacts. Contemporary resilience and reliability analysis tools, such as the Interruption Cost Estimator (ICE) Tool, do not adequately capture estimations of the economic loss and impact of outages on the state's disadvantaged communities and for long-duration outages frequently experienced by residents and businesses in Louisiana. The HERO project has specifically focused on supporting community-based solutions that have a multiplier effect on supporting vulnerable members of a community. (b) (4)

Table 3. Impact Metrics

(b) (4)	(b) (4)	(b) (4)	(b) (4)	(b) (4)
(b) (4)	(b) (4)	(b) (4)	(b) (4)	(b) (4)
(b) (4)	(b) (4)	(b) (4)	(b) (4)	(b) (4)
(b) (4)	(b) (4)	(b) (4)	(b) (4)	(b) (4)
(b) (4)	(b) (4)	(b) (4)	(b) (4)	(b) (4)



Technical Description

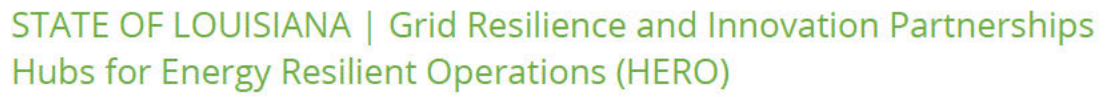
Relevance and Outcomes

(b) (4)

The Louisiana HERO Project will develop and deploy a comprehensive approach to reduce the impact of outage events on the states most vulnerable communities, through three primary phases:

Phase I: Launch Integrated Community Energy Planning. The State of Louisiana and Project Team will work closely with communities to pilot a new model for community-centric energy resilience project planning, aimed to protect disadvantaged and critical communities during extreme weather, natural disasters, and other threats to energy security (b) (4)

Phase II: Deploy Network of Community Resilience Hubs. Integrated community energy planning will prepare the State to deploy a network of Community Resilience Hubs (Hubs) (b) (4)



Country	Year	Population (millions)	Urban population (millions)	Urban population (%)	Population density (per sq km)	Population density (per sq mile)
Algeria	1990	10.2	5.2	50.9	166	430
Algeria	2000	11.5	6.2	53.9	176	456
Algeria	2010	12.8	7.2	56.3	187	487
Algeria	2020	14.1	8.2	58.2	198	513
Algeria	2030	15.4	9.2	59.7	209	541
Algeria	2040	16.7	10.2	61.1	220	570
Algeria	2050	18.0	11.2	62.2	231	597
Algeria	2060	19.3	12.2	63.2	242	624
Algeria	2070	20.6	13.2	64.1	253	652
Algeria	2080	21.9	14.2	64.8	264	679
Algeria	2090	23.2	15.2	65.5	275	707
Algeria	2100	24.5	16.2	66.1	286	735
Algeria	2110	25.8	17.2	66.7	297	763
Algeria	2120	27.1	18.2	67.2	308	791
Algeria	2130	28.4	19.2	67.6	319	819
Algeria	2140	29.7	20.2	68.0	330	847
Algeria	2150	31.0	21.2	68.4	341	875
Algeria	2160	32.3	22.2	68.7	352	903
Algeria	2170	33.6	23.2	69.1	363	931
Algeria	2180	34.9	24.2	69.4	374	959
Algeria	2190	36.2	25.2	69.6	385	987
Algeria	2200	37.5	26.2	70.0	396	1015
Algeria	2210	38.8	27.2	70.1	407	1043
Algeria	2220	40.1	28.2	70.3	418	1071
Algeria	2230	41.4	29.2	70.5	429	1099
Algeria	2240	42.7	30.2	70.7	440	1127
Algeria	2250	44.0	31.2	70.9	451	1155
Algeria	2260	45.3	32.2	71.1	462	1183
Algeria	2270	46.6	33.2	71.3	473	1211
Algeria	2280	47.9	34.2	71.4	484	1239
Algeria	2290	49.2	35.2	71.6	495	1267
Algeria	2300	50.5	36.2	71.7	506	1295
Algeria	2310	51.8	37.2	71.8	517	1323
Algeria	2320	53.1	38.2	71.9	528	1351
Algeria	2330	54.4	39.2	72.1	539	1379
Algeria	2340	55.7	40.2	72.2	550	1407
Algeria	2350	57.0	41.2	72.3	561	1435
Algeria	2360	58.3	42.2	72.4	572	1463
Algeria	2370	59.6	43.2	72.5	583	1491
Algeria	2380	60.9	44.2	72.6	594	1519
Algeria	2390	62.2	45.2	72.7	605	1547
Algeria	2400	63.5	46.2	72.8	616	1575
Algeria	2410	64.8	47.2	72.9	627	1603
Algeria	2420	66.1	48.2	72.9	638	1631
Algeria	2430	67.4	49.2	73.0	649	1659
Algeria	2440	68.7	50.2	73.1	660	1687
Algeria	2450	70.0	51.2	73.1	671	1715
Algeria	2460	71.3	52.2	73.2	682	1743
Algeria	2470	72.6	53.2	73.2	693	1771
Algeria	2480	73.9	54.2	73.3	704	1799
Algeria	2490	75.2	55.2	73.4	715	1827
Algeria	2500	76.5	56.2	73.4	726	1855
Algeria	2510	77.8	57.2	73.5	737	1883
Algeria	2520	79.1	58.2	73.6	74	

A black and white photograph of a person's face, heavily obscured by thick black horizontal bars. The bars are positioned across the eyes, nose, and mouth, leaving only the forehead and chin visible. The person appears to be looking directly at the camera. The background is dark and indistinct.



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(b) (4)

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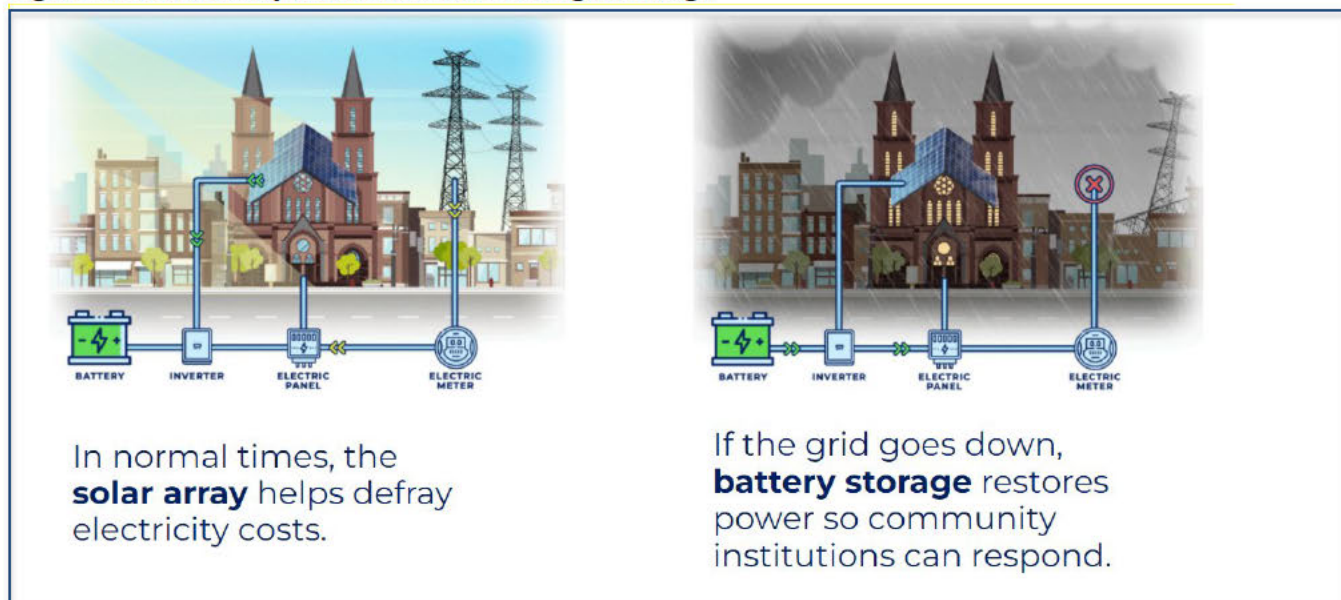
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(b) (4)

Figure 2. Community Resilience Hub microgrid design



(b) (4)

Hub Pilots

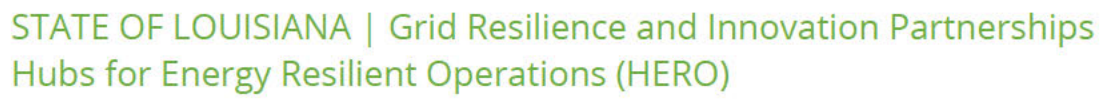
The Louisiana HERO project team believes that it will also learn best by doing. An initial set of Hubs will be identified and deployed concurrently with the Phase I Integrated Community Energy Planning effort in order to provide real-time feedback into the planning effort and to develop the basis for a significant expansion of Hub sites using additional data gathered including historical power outage data, critical infrastructure assessment data, social vulnerabilities, climate risks, industrial load congestion zones, state emergency evacuation routes, electric utility distribution systems, and other relevant factors.



(b) (4)

(b) (4)

[illegible]

[illegible]



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Hub Full Deployment

Following the guidance of the ICEP process, the HERO project team will develop a request for information and request for proposals for the full deployment of Community Resilience Hubs in Phase II of the project. The final Community Resilience Hub design will follow the framework as described in this proposal, but include additional requirements, design elements, and flexibility for site submissions and implementation.

(b) (4)

[REDACTED]

Feasibility

The Louisiana HERO project is committed to ensuring the success of all phases of the project. For Phase I, the project team includes core stakeholders involved in energy planning discussions, including community leadership, regulated utilities, and regulators. In Phase II, the project team has already identified (b) (4) potential community resilience hubs projects (b) (4)

[REDACTED] In Phase III, the project team has considered the needs for ongoing operations of community resilience hub locations, as well as O&M and other costs to ensure continued microgrid operation.



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This project builds off the work of project partners Together Louisiana and the City of New Orleans to deploy community lighthouse projects, which has already deployed an initial set of projects following the hub design. All pilot projects have access to the required infrastructure, and future hub deployments will be required to go through an engineering and site control review prior to being granted development funding.

Replicability

(b) (4)

As part of the ICEP process, the State of Louisiana stakeholders will identify options and opportunities for new resilience investments and compensation mechanisms for distributed energy resource microgrids, if possible, to enable the initial deployment of Community Resilience Hubs to scale above and beyond those identified in the projects. Additionally, through the Inflation Reduction Act, nonprofits and public facilities have the ability to capture new investment tax credits (through direct pay or transferability provisions) to provide future financial support for project replication.

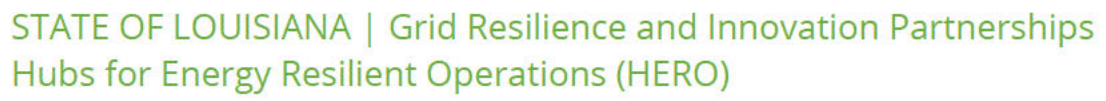
Workplan

The HERO Project would begin immediately following the initial award granted by the Department of Energy (DOE) under the Grid Resilience and Innovation Partnership (GRIP) Program. (b) (4)



(b) (4)

[REDACTED]



(b) (4)

[REDACTED]

[REDACTED]



(b) (4)

[Redacted content]



(b) (4)

[REDACTED]



(b) (4)

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(b) (4)

[Redacted text block]



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Milestone Table & Go/No-Go Decision Points

Table 5.

Milestone Summary Table							
Recipient Name:		State of Louisiana					
Project Title:		Hubs for Energy Resilient Operations (HERO)					
Task Number	Task or Subtask (if applicable) Title	Milestone Type	Milestone Number	Milestone Description (Go/No-Go Decision Criteria)	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
1	(b) (4)		1			1	1
2			2			2	1
3			3			2	2
4			4			2	2
5			5			2	2
6			6			2	2
7			7			2	2
8			8			2	2



Project Schedule

(b) (4)

Project Management Plan

The Project team will set up a Project Management Office (PMO) composed of experts and advisors with a proven track record to execute large-scale energy and community transformative initiatives to initiate and execute the 8-year implementation plan for the HERO Project. (b) (4)

Table 7. HERO Project Team Roles and Responsibilities

Team Member	Role	Responsibilities
State of Louisiana Energy Office (SEO)	(b) (4)	(b) (4)
Louisiana Interagency Work Group	(b) (4)	(b) (4)
Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)	(b) (4)	(b) (4)
Louisiana Public Service Commission (LPSC)	(b) (4)	(b) (4)



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Entergy, Cleco Power (CLECO), and Southwestern Electric Power Company (SWEPCO)	(b) (4)	
Together Louisiana		
University of Louisiana		
Xavier University of Louisiana		
City of New Orleans		
Center for Planning Excellence (CPEX)		
Terrebonne Parish Consolidated Government		
The Accelerate Group		
NextGen Energy Partners		
Louisiana Governor's Office		

(b) (4)

² The HERO Project team includes Louisiana State Energy Office, Louisiana State Public Service Commission, Office of Homeland Security and Emergency Preparedness, Entergy, Southwestern Electric Power Company SWEPCO, CLECO Power, City of New Orleans, University of Louisiana, Xavier University, Together Louisiana, and Center for Planning Excellence.



Technical Qualifications and Resources

The HERO Project Team represents a diverse set of members that collectively represent the expertise and proven capabilities needed to successfully develop and execute a comprehensive community resilience plan with next generation power infrastructure and sustainable workforce development in Louisiana. The HERO Project Team will be working to expand the project team members and core partners in the pre-planning phase of the effort. (b) (4)

[REDACTED]

Project Management Team

Project Business Lead & Project Technical Lead:

(b) (4)

[REDACTED]

Louisiana Public Service Commission (LPSC)

LPSC is the constitutional agency charged with regulating the rates, terms and conditions of service of utilities subject to its jurisdiction. The Commission and its Staff are actively engaged in all aspects of electric utility regulation through broad rulemaking and ratemaking authority.

(b) (4)

[REDACTED]

Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)

GOHSEP is the agency responsible for coordinating the State's efforts throughout the emergency management cycle. Louisiana's Emergency Operations Center (SEOC) is a state-of-the-art command and control center and is operated within and staffed by GOHSEP.

(b) (4)

[REDACTED]

Together Louisiana

Together Louisiana is a regional network of 250 religious congregations and civic organizations, representing more than 200,000 people, working on access to healthcare, flood recovery, access to healthy food, workforce development, criminal justice reform, and infrastructure.

(b) (4)

[REDACTED]

University of Louisiana (UL) Lafayette

The University of Louisiana at Lafayette (UL) is a public research university founded in 1898. UL ranked No. 195 in the world and No. 25 in the U.S. for eco-friendliness in 2019 and earned the Higher Education Excellence in Diversity Award for five years in a row.

(b) (4)

[REDACTED]



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(b) (4)

Xavier University of Louisiana

Xavier, the nation's only Catholic and Historically Black College/University, is a nationally recognized leader in the STEM and health sciences fields and has consistently ranked No. 1 in undergraduate sources of African Americans who complete medical school.

(b) (4)

Center for Planning Excellence

CPEX is a non-profit organization that coordinates urban, rural, and regional planning efforts in Louisiana to build resilient communities through their work as policy advocates, educators, and planning experts. CPEX has long-standing partnerships with community members and leaders in working towards a shared vision for the future of Louisiana.

(b) (4)

City of New Orleans

New Orleans has become recognized worldwide as a city on the forefront of the Climate Crisis. The City of New Orleans under Mayor LaToya Cantrell recently released their new Climate Action Plan in December 2022, which calls for an expansion of solar projects across the city to increase community resilience and lower the city's carbon footprint. The City's IJJA Task Force is partnered with community-based organizations on localized resilience and climate action projects, including the Community Lighthouse Project and the Get Lit, Stay Lit Project. New Orleans is now also implementing their Communities Local Energy Action Program (C-LEAP), which was awarded by the DOE in 2022 and designed to support the city's renewable goals.

(b) (4)

Entergy Louisiana and Entergy New Orleans

Entergy Louisiana and Entergy New Orleans are Louisiana regulated utilities and companies of Energy. Entergy, a Fortune 500 company that powers life for 3 million customers through its operating companies across Arkansas, Louisiana, Mississippi and Texas.

(b) (4)

Southwestern Electric Power Company (SWEPCO)

Southwestern Electric Power Company (SWEPCO) is an American Electric Power (AEP) company. SWEPCO operates in Western Arkansas, Northwestern and Central Louisiana, East Texas and the Panhandle area of



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North Texas. The company's headquarters are in Shreveport, La. SWEPCO has been providing affordable, reliable electricity to customers since 1912.

(b) (4)

Terrebonne Parish Consolidated Government (TPCG)

TPCG is a unit of government that is parish and city consolidated with one parish council and one parish president that is a southern border parish with the Gulf of Mexico lying in a predominantly flood and storm prone area.

(b) (4)

The Accelerate Group and NextGen Energy Partners

Industry experts The Accelerate Group and NextGen Energy Partners are nation-leading experts in integrated energy planning, regulatory coordination, and resilience initiatives. The team has led efforts to design and convene integrated energy planning efforts and coordinate pilot projects.

(b) (4)

Access to Equipment and Facilities

The HERO Project Team has direct access to the equipment and facilities for this project. This includes subs transmission equipment and rights-of-way, substation assets, and feeder assets. For the Community Resilience Hubs, the HERO Project Team will create agreements with the customer facilities to support the deployment of the distributed energy resources.

(b) (4)

Proven Successful Coordination

The HERO Project Team has successfully coordinated disaster recovery efforts, including thorough partnership agreements for equipment, personnel, training, and broader planning. The team has working relations in emergency response management, restoration coordination, mutual assistance, and exchanging lessons learned to strengthen resilience for Louisiana.

The diverse and multidisciplinary project team will leverage its natural disaster expertise, proven emergency response strategies, and effective community support efforts based upon decades of serving the needs of the Louisiana communities during times of crisis. The utilities, universities, community-led organizations, and state agencies who represent the collective HERO Project Team have joined forces,



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shared resources, and served the front lines during Hurricane Katrina (2005), Gustav (2008), Laura (2020), Ida (2021), and countless other major storm events. The HERO Project Team members have worked relentlessly alongside one another to best serve and protect communities throughout each phase of emergency disasters from mitigation, preparedness, response, to recovery in response to hurricanes, flash floods, winter freeze, extreme heat, tornadoes, wildfires, and other crisis events.

(b) (4)

The HERO Project is well-positioned to be a successful community-centric energy resilience initiative given the proven track record of successful coordination among the utilities, universities, community led organizations, state agencies who share a common purpose and commitment to protect and serve the communities and residents of Louisiana.