



Resilience and Planning Resources for New Orleans

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National Renewable Energy Laboratory

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CITY OF NEW ORLEANS

Notice

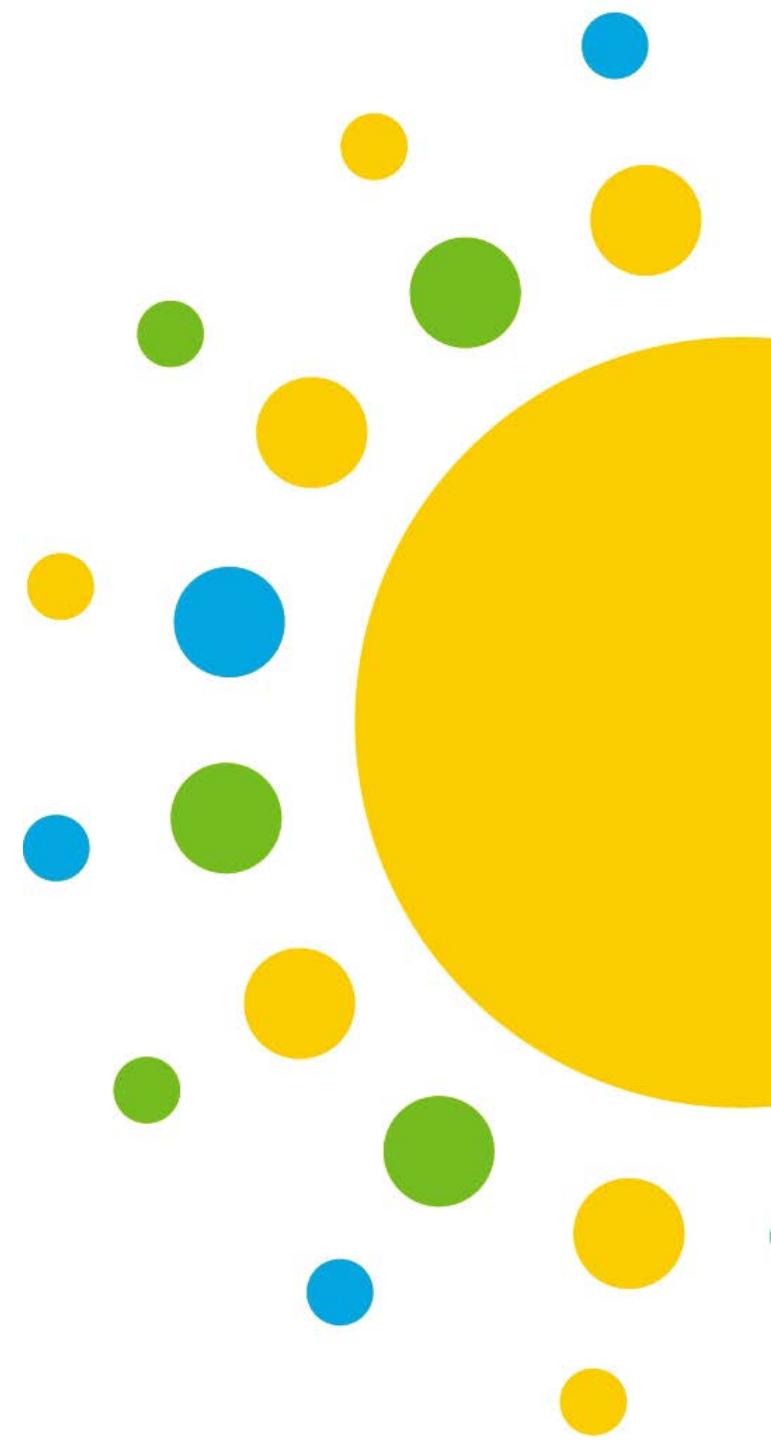
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About Communities LEAP



- The Communities Local Energy Action Program (LEAP) Pilot competitive technical assistance opportunity aims to facilitate sustained community-wide economic empowerment through clean energy, improve local environmental conditions, and open the way for other benefits primarily through the U.S. Department of Energy's (DOE's) clean energy deployment work.
- This opportunity is specifically open to low-income, energy-burdened communities that are also experiencing either direct environmental justice impacts, or direct economic impacts from a shift away from historical reliance on fossil fuels.

Communities LEAP Map



New Orleans' Goals for Communities LEAP Technical Assistance

New Orleans has long experienced power grid failures due to extreme weather such as tropical cyclones and extreme temperatures which both cause and exacerbate power failures. But power failures during fair weather conditions are also common with 53% of outages in New Orleans in 2019 occurring in fair conditions according to the New Orleans Communities LEAP application.

The impacts of Hurricane Ida highlighted the need for continued investments in power grid resilience as part of the city's long-term disaster risk mitigation strategy.

To address these issues, the city sought technical support from Communities LEAP for the following:

- Perform a techno-economic analysis of microgrid implementation.
- Provide policy and program analysis.
- Prioritize actions to meet city goals, directed by the city.



Partners

The City of New Orleans



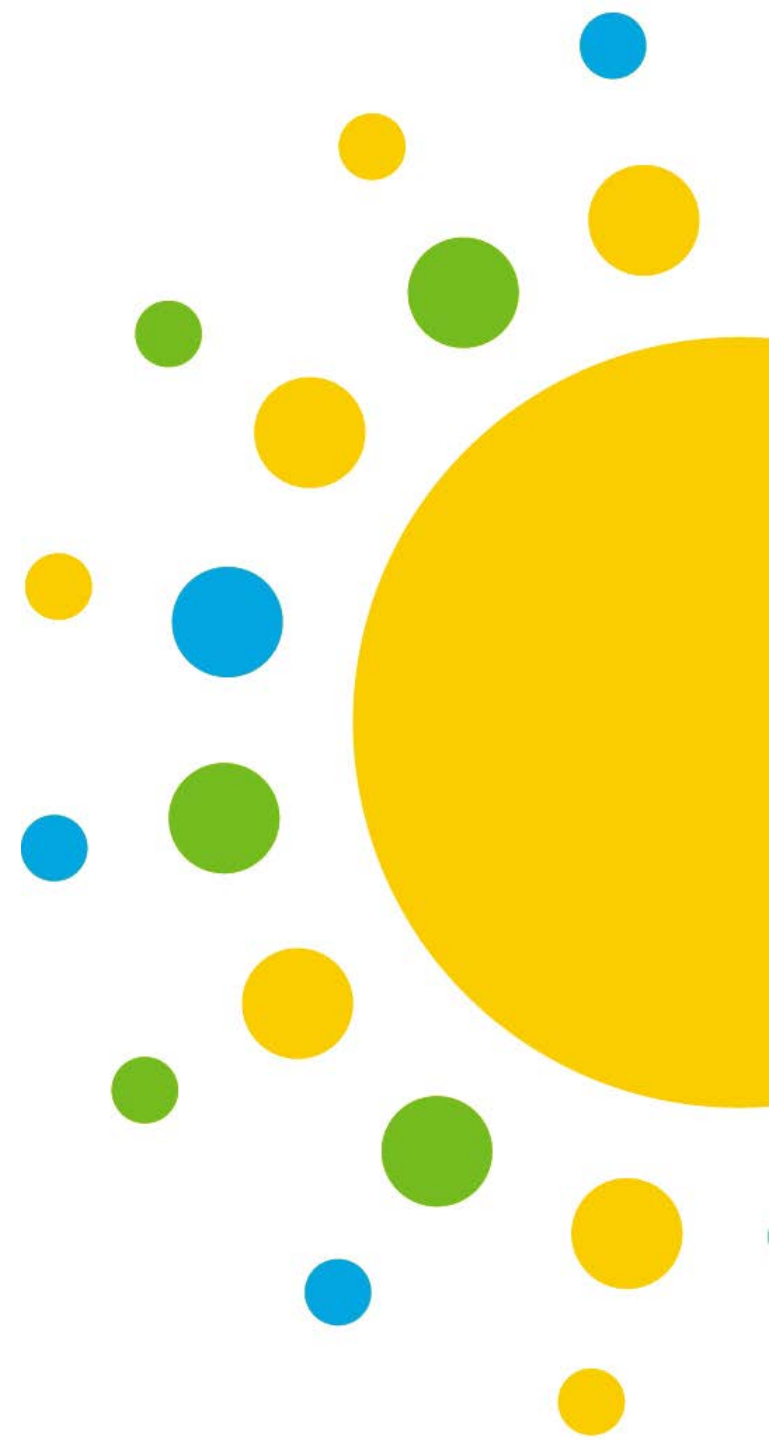
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Greater New Orleans Housing Alliance



New Orleans Plans

How New Orleans' other plans support clean energy goals



Plan Review

The following New Orleans' plans were reviewed. Following are the clean energy-related goals from each plan. Full plans can be found at the links below. These can be highlighted in grant applications and other funding requests to show commitment across City operations.

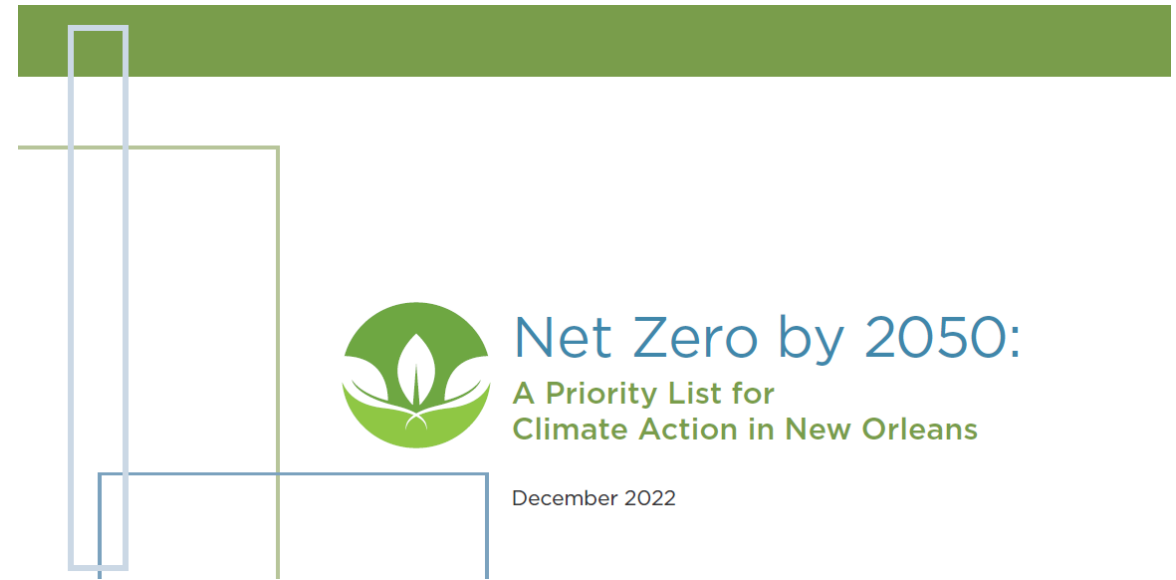
- [Climate Action Plan](#)
- [Hazard Mitigation Plan](#)
- [New Orleans Master Plan](#)
- [Plan for Generational Economic Transformation](#)
- [Renewable Portfolio Standards](#)

Climate Action Plan – 1

Actions – Overview

Ramp up the local climate action economy.

- Invest in clean energy and climate solutions.
- Establish a regional green bank with Finance New Orleans (FNO).
- Promote sustainable business practices and jobs.

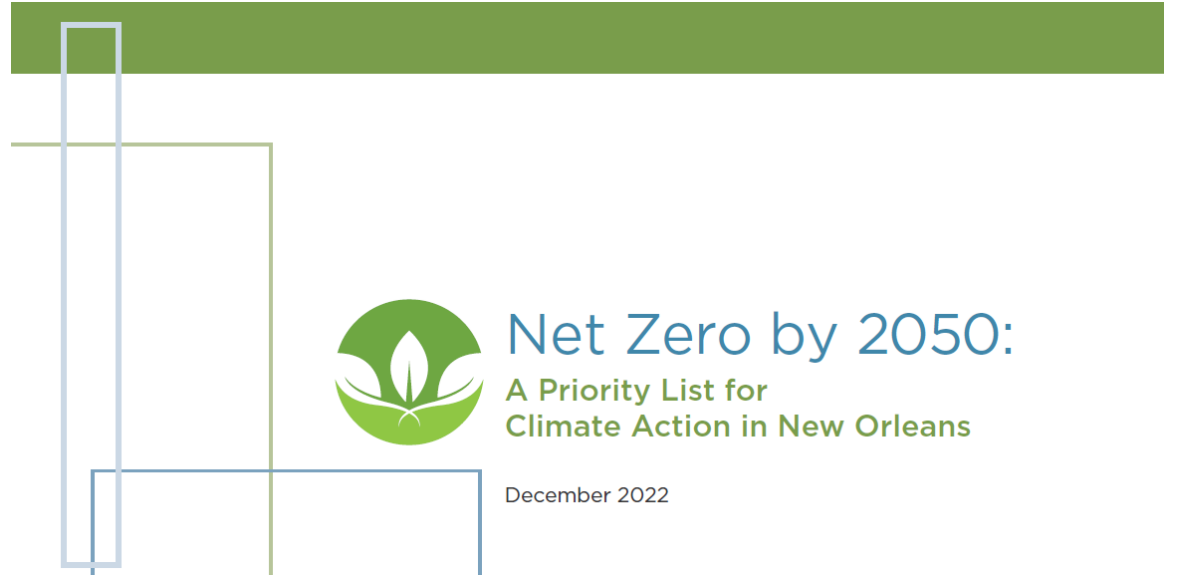


Climate Action Plan – 2

Actions – Overview

Energy

- Clean our grid—100% clean electricity by 2035.
- Generate more clean energy locally.
 - Increase local solar and regional wind energy development.
 - Launch Community Solar.
 - Increase Solar for All installations.
- Install solar on city property.
- Use less energy in our buildings.
 - Reduce energy use in City buildings by an additional 20% by 2030.
 - Adopt a benchmarking ordinance for commercial buildings.

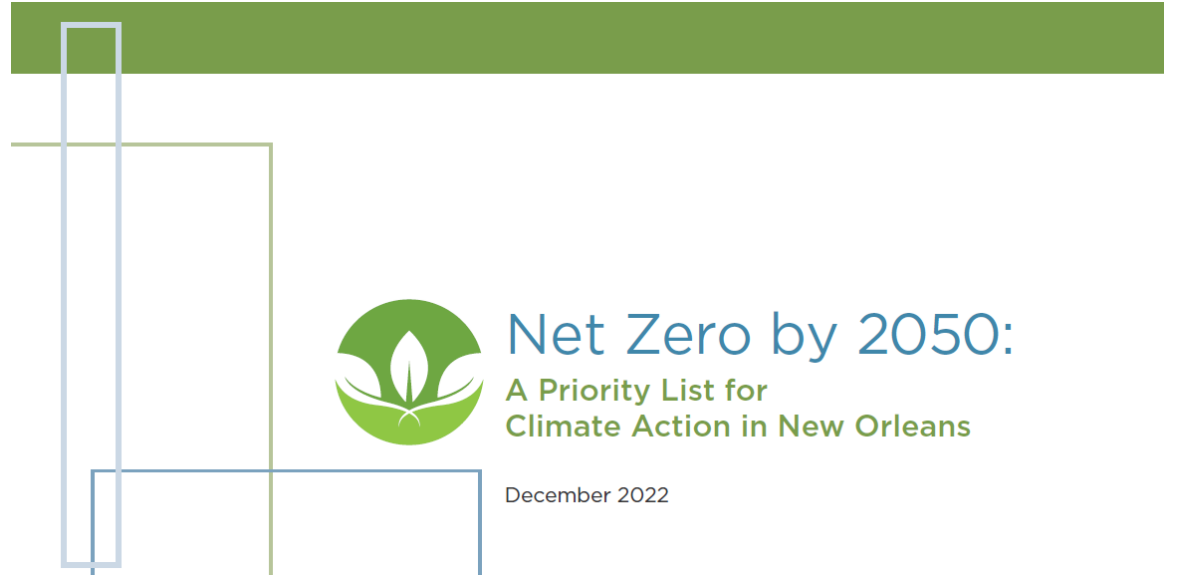


Climate Action Plan – 3

Actions – Overview

Transportation

- Diversify our travel choice to increase non-auto trips.
 - Develop Transit-oriented Communities.
 - Invest in 6 miles of transit-only infrastructure by 2027.
 - Invest in safe, low-stress, and comprehensive bicycle infrastructure.
- Zero-emission vehicles (ZEV) to reduce air pollution.
 - 75% of RTA’s fleet low- or no-emission by 2030.
 - Increase ZEV use and facilitate the development of EV charging stations throughout the city.

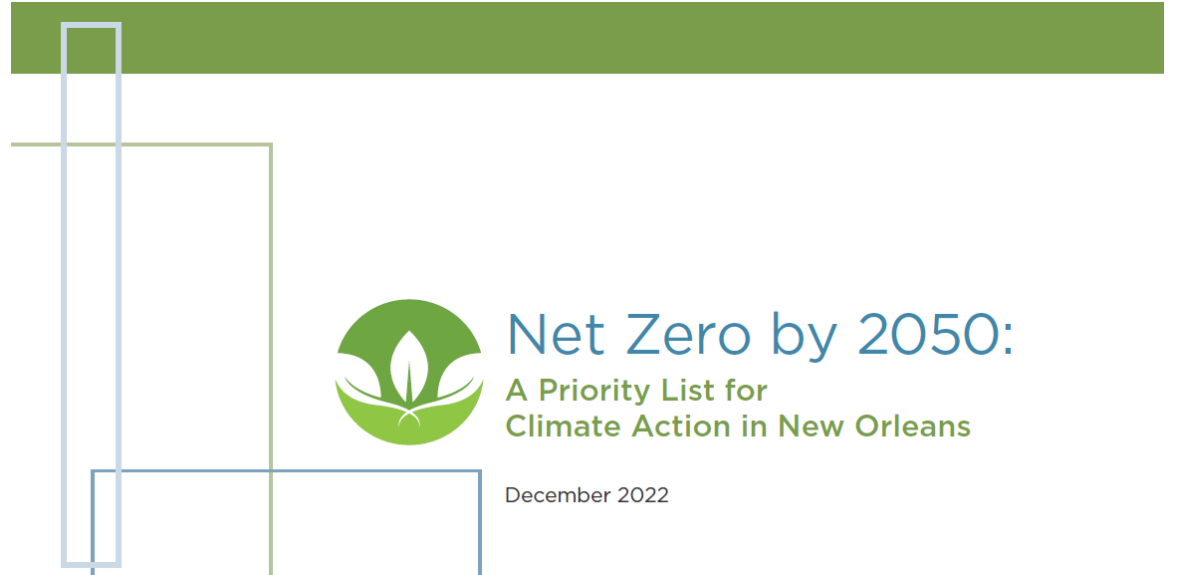


Climate Action Plan – 4

Actions – Overview

Adaptation and Nature

- Plant 40,000 trees by 2030.
- Increase resilience of our energy and water infrastructure.
- Implement microgrid pilot(s) for energy resilience.



Hazard Mitigation Plan – 1

Goal 2: Reduce risk and vulnerability to the built environment

Goal 2.5: Higher efficiency standards

Create a higher set of energy efficiency standards for building performance to reduce energy consumption and greenhouse gas emissions in new construction.



Hazard Mitigation Plan - 2

Goal 2: Reduce risk and vulnerability to the built environment

Goal 2.10: Solar for All

Make solar power a realistic and viable option for residential and commercial property owners and city-owned properties in Orleans Parish to increase energy security, reduce energy costs, and reduce dependence on fossil fuels.



New Orleans Master Plan

Recommended Strategies

Improve the redundancy and reliability of our critical infrastructure.

- Implement a microgrid pilot project.

Adopt and implement a Climate Action Plan.

- Set ambitious greenhouse gas emissions reduction targets for short- and long-term.

Promote renewable energy and energy efficiency.

- Implement ambitious energy efficiency measures in municipal buildings.
- Incentivize the adoption of energy benchmarking and energy efficiency measures in large commercial and institutional buildings.
- Seek energy efficiency financing mechanisms in partnership with banks and lenders.



Plan for Generational Economic Transformation

- Support the implementation of the City's Climate Action Plan goals; leverage to support the growth of the energy industry.
 - 100% low-carbon power and 255 megawatts local solar.
 - Support the development of a local solar program and utilization of solar on City-controlled sites.
 - Support city and state commitments to renewable portfolio standards, and work with City Council and other partners to achieve this at the local level.
 - Leverage local and state commitments to greenhouse gas reductions: the State of Louisiana has committed to being net-zero by 2050, and the City will reduce by 50% by 2035.
 - Align the energy and water sectors.
- Identify opportunities for pursuing residential, commercial, and industrial solar projects.
 - Coordinate with Port NOLA on potential for value-add.
 - Pursue pilot solar microgrid projects throughout the city.



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CITY OF NEW ORLEANS

Plan for Generational Economic Transformation

Economic Opportunity Reports Across GNO

- Greater New Orleans Housing Alliance – [New Orleans Rental Market Study](#)
 - Outlines suggested energy efficiency strategies to address energy burdens should be geared toward low-income households with high energy bills, those needing weatherization, and larger property households with central heating and cooling.
- Deep South Center for Environmental Justice – [Taking Steps Together on Equity and Climate Change](#)
 - Collection of goals and steps to achieve equitable climate action with demonstrated examples of projects that can be performed and the potential economic outcomes of expanding outreach and increased sustainable industry employment.
- Greater New Orleans Foundation – [Economic Opportunity through Green Infrastructure](#)
 - Highlights economic impact of green infrastructure, barriers to equitable career progression, and recommendation for improving accessibility to quality jobs in sustainable industries.



A Climate Action Equity Project



Renewable Portfolio Standards

Resolution R-21-182

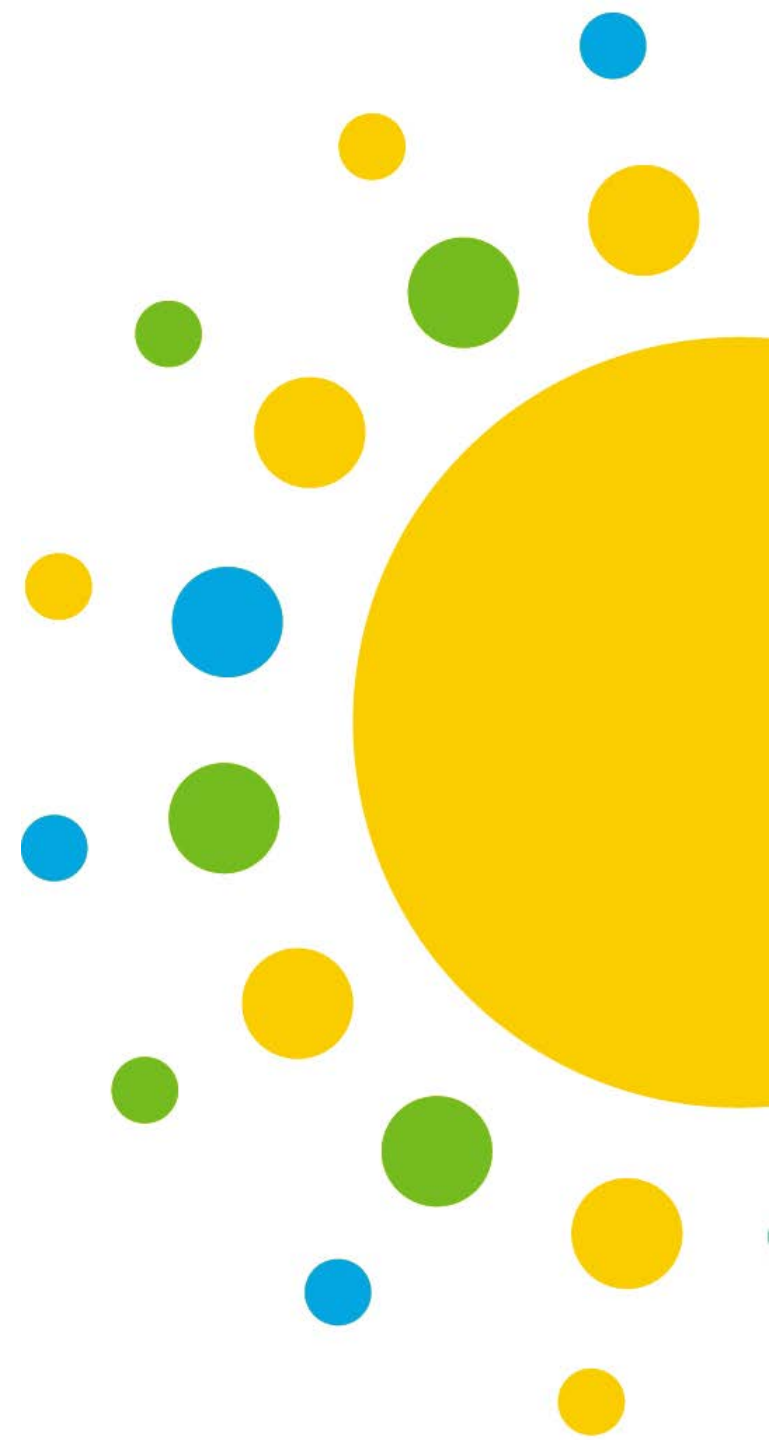
May 20, 2021

In May 2021, the New Orleans City Council passed Renewable Portfolio Standards with the goal of being:

- Net-zero carbon emissions electricity by 2040
- 100% zero carbon emissions electricity by 2050

Stakeholder Engagement

Extensive stakeholder engagement was conducted during the technical assistance. The following describes these efforts and summarizes the feedback obtained.



Stakeholder Engagement – Overview

- As part of the Communities LEAP process, efforts were made to engage local stakeholders, residents, and others.
- This effort included 25 stakeholder interviews to learn about priorities for the community, local efforts already underway, and potential barriers.
- A two-day, in-person workshop was held in December 2022 that brought together 70 diverse stakeholders from the community.
- Greater New Orleans Housing Alliance (GNOHA) shared updates on the project at community listening sessions.
- 200 questionnaires for residents and business owners were shared to get additional input on community priorities and perspectives.

Stakeholder Engagement – Interviews

Interviews were conducted with the stakeholders below who were identified through stakeholder mapping.

- Alliance for Affordable Energy
- APTIM
- Center for Sustainable Engagement and Development (Sustain the Nine)
- City Council
- City Planning Commission
- Council Utility Regulatory Office (CURO)
- Energy Future New Orleans
- Energy Smart
- Entergy New Orleans
- Financing New Orleans
- Footprint Project
- Greater New Orleans Housing Alliance (GNOHA)
- Greater New Orleans, Inc.
- Green Coast Enterprise
- Housing Authority of New Orleans
- New Orleans Recreation Department
- New Orleans Redevelopment Authority (NORA)
- New Orleans Regional Transit Authority
- NOLA Public Library
- NOLA Public Schools
- PosiGen
- Red Beans/Get Lit, Stay Lit
- Sewerage and Water Board
- Thrive New Orleans
- Together New Orleans

In Person Workshop – Agenda

University of New Orleans

Dec. 13–14, 2022

Day 1

- Climate Action Plan update released
 - Greg Nichols, Deputy Chief Resilience Officer
 - Austin Feldbaum, Director of Hazard Mitigation
 - Jeff Schwartz, Director of Office of Economic Development
- New Orleans energy landscape
 - SLOPE findings
 - REopt overview
- Microgrid discussion
 - Priority locations from stakeholder engagement
- Mapping exercise

Day 2

- Funding opportunities for clean energy
- Justice40
- Presentation by GNOHA
 - Housing Resiliency and Disaster Recovery
- Presentation by Dr. Siobhain Lash
 - “Environmental Justice & Economic Incentives”
- Workforce development opportunities
- Small group discussion

In-Person Workshop – Attendees

Attendees included representatives from the following:

- Aptim/Energy Smart
- Audubon Delta
- Center for Sustainable Engagement and Development
- Congressman Steve Scalise’s office
- EcoBuild
- Entergy
- Finance New Orleans
- Footprint Project
- GNO, Inc.
- Green Coast
- Gulf Wind Technology
- LifeCity LC3
- Louisiana Green Corps
- New Orleans Ernest N. Morial Convention Center
- New Orleans Health Department
- New Orleans Recreational Department
- Office of Homeland Security and Emergency Preparedness Orleans Parish School Board
- Port NOLA
- PosiGen
- Regional Transit Authority
- Thrive New Orleans
- Together New Orleans

In-Person Workshop

*University of New Orleans
Dec. 13–14, 2022*

Photo Credit: City of New Orleans



Net Zero by 2050:
A Priority List for
Climate Action in New Orleans

nola.gov/climateaction



Resident Outreach – 1

Greater New Orleans Housing Alliance

- GNOHA conducted a regional listening tour starting on Jan. 30 to craft the region’s legislative priorities.



- Organizers were provided with paper surveys about Communities LEAP, a link and QR code for an online survey, and an informational flier developed by the National Renewable Energy Laboratory (NREL) to share with residents.



Clean Energy and Microgrid Opportunities to Make Electricity Affordable, Reliable, and Clean in New Orleans

The City of New Orleans, Louisiana, is participating in the U.S. Department of Energy’s (DOE) Communities Local Energy Action Program (LEAP) Pilot, which is supporting 24 communities across the United States in their efforts to transition to clean energy to improve energy reliability, lower energy costs, and strengthen local economies. Communities LEAP is specifically open to low-income, energy-burdened communities that are also experiencing either direct environmental justice impacts, or direct economic impacts from a shift away from historical reliance on fossil fuels.

Through Communities LEAP, a New Orleans community coalition will work with a technical assistance (TA) provider network to develop an implementation roadmap that makes recommendations for future investments to:

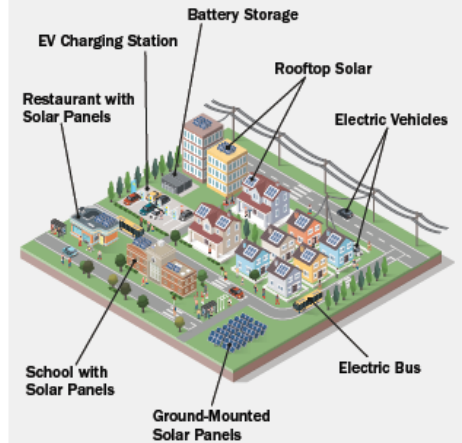
- Lower energy bills for residents who pay a disproportionately high share of their incomes for natural gas and electricity
- Build microgrids to make electricity services more reliable, even during storms
- Reduce pollution from energy generation to improve air quality, promote environmental justice, and address climate change
- Develop a local clean energy workforce.

The community coalition includes staff from the New Orleans Office of Economic Development, the Office of Resilience and Sustainability, the Hazard Mitigation Office, and the Greater New Orleans Housing Alliance (GNOHA). The Communities LEAP TA provider network is coordinated by the National Renewable Energy Laboratory (NREL) and includes private and public organizations with expertise in clean energy, environmental justice, economic development, and equitable investment.

For more information about Communities LEAP, visit energy.gov/communitiesLEAP

What is a microgrid?

Microgrids are small-scale electrical grids that can enable local sources of energy, like rooftop solar and battery storage, to keep electricity on in a community even when storms or other disruptions shut down the larger grid.



NREL is coordinating a wide range of community stakeholders and experts to analyze the community’s energy needs, priorities, and resources and will provide an analysis for the New Orleans community coalition to develop microgrids and help meet the city’s clean energy goals. The roadmap will make recommendations for future investments that can create green jobs, reduce emissions, help address climate change, protect natural resources, and keep the power on, even after a storm.

Email cleap@nola.gov with any questions.

Produced for the U.S. Department of Energy by the National Renewable Energy Laboratory (NREL).
DOE/GO-102022-5839 • January 2023

Resident Outreach – 2

The City of New Orleans used their social media accounts to share information about the Communities LEAP project and request residents and businesses to respond to the questionnaire.



Resident Questionnaire

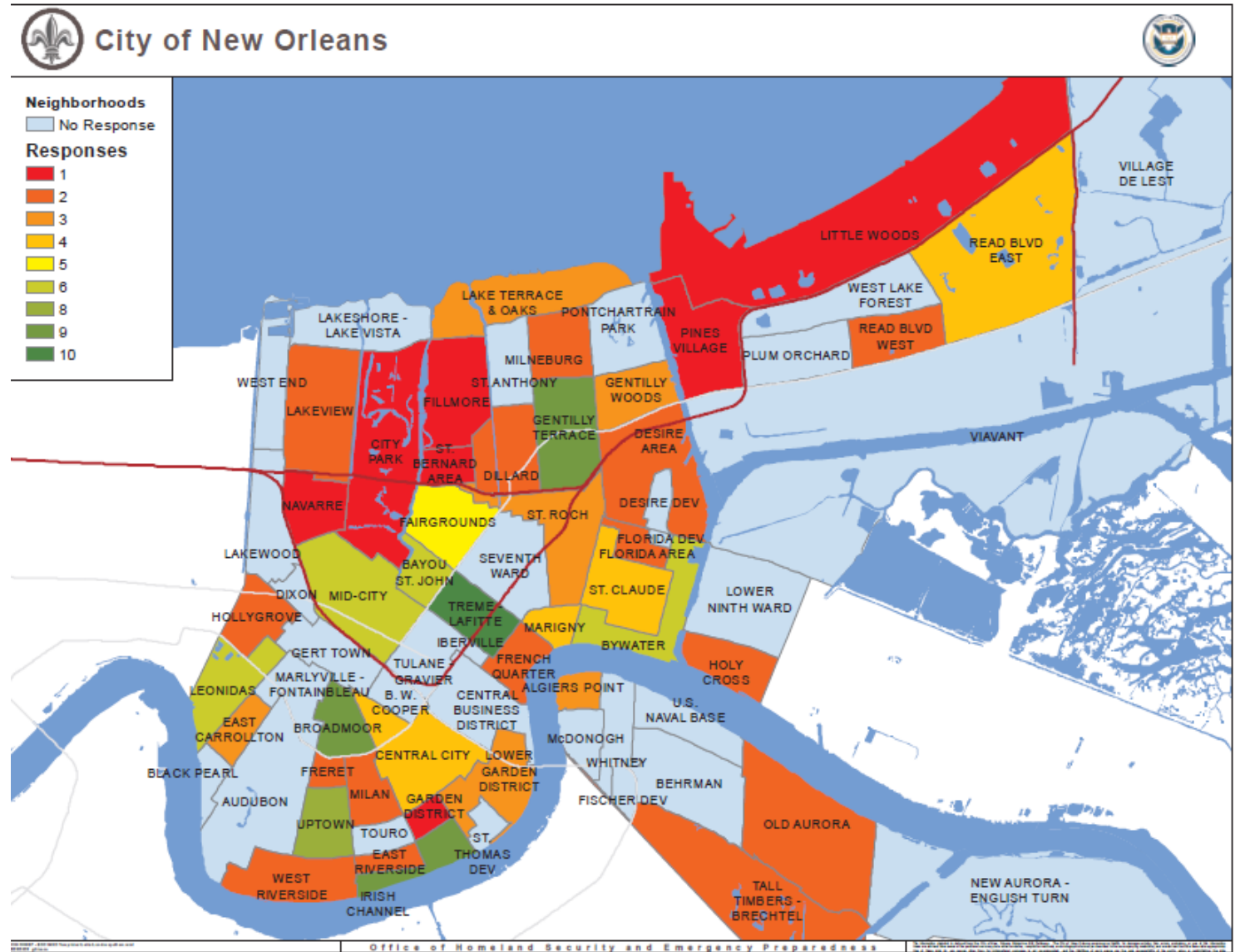
A questionnaire for residents was made available online and in paper. This was shared by the coalition partners and on social media. Below are the questions asked and residents were given 60 days to fill it out.

- What are the most important things to keep powered during an outage?
- What is your largest concern during a power outage?
- What are the impacts of power outages?
- What places do you rely on when the power is out?
- Do you have a disaster recovery plan outlined?
- Is your disaster recovery plan outlined with your landlord (homeowner) or tenant?
- What does your disaster recovery plan look like and how does it include your landlord (homeowner) and/or tenant?
- How much money do you lose due to power outages?
- Are you interested in working in renewable and sustainable industries?
- Which renewable and sustainable industries are you interested to work in?
- Would you be interested in participating in a Microgrid solution?
- What are your hesitations towards participating in a Microgrid?
- Are you familiar with Community Solar?
- Would you be interested in subscribing to a Community Solar project?
- Are you familiar with Solar Gardens?
- Would you support a Solar Garden on a vacant lot in your neighborhood if it provided power to your home when the grid was down?
- What are your hesitations towards participating in a Solar Garden solution?
- Are you aware of grid resiliency initiatives in your neighborhood, community, and/or district?

Resident Questionnaire – Response Geography

Responses to the residential questionnaire came from across New Orleans.

Gentilly Terrace, Treme-Lafitte, and Broadmoor neighborhoods had the highest response rate.



Resident Questionnaire Highlights

Out of 173 responses:

When asked about the most important things to keep powered, the following were most commonly mentioned:

- Refrigerator or freezer 169
- Cell phones 159
- Cooling fans 144
- Medical devices 126

The main impacts that were identified were:

- Spoilage of food 179
- Lost wages 100
- Medical complications 97

The places people rely on during an outage:

- Neighbors, friends, or family 42
- Gas stations 45
- Groceries 28
- Libraries, Community/Cooling Centers 17
- Only 24 were aware of resilience efforts in their neighborhood.
- 132 were interested in an area microgrid.

Business Questionnaire

A questionnaire targeting small businesses was deployed online, through social media, and by the New Orleans Office of Economic Development. Below are the questions. Businesses had 60 days to fill it out.

- How long have you done business in New Orleans?
- Business zip code
- Business categories
- Power outage impacts
- Threats of power outages influence my business decisions. Y/N
- My business provides essential disaster recovery services. Y/N
- My business insurance covers power outage disruptions. Y/N
- I own the building where my business is located. Y/N
- Building system upgrades I've considered: Solar, Battery Storage, Insulation and weatherization, Energy Star appliances, Smart thermostats, LED lights, Other.
- Have you considered solar and battery storage specifically? Y/N Why or why not?
- My business would support local power generation by using a microgrid. Y/N
- My business would support local power generation through community solar. Y/N
- Are you aware of any solar and battery initiatives in your area? Y/N Please provide if so.
- My business has a plan for disasters/emergencies. Y/N
- My business would like support creating a disaster/emergency plan. Y/N
- My business would like to learn more about Partners in Preparedness to help in disaster/emergency recovery efforts. Y/N
- Anything else you wish to share?

Business Questionnaire Highlights

Total of 25 responses.

Primary impacts in order of responses:

- Loss of business revenue (18)
- Disruption for employees, including lost wages (16)
- Security and surveillance (14)

22 of 25 said that the threat of power outages influences their business decisions.

22 of 25 respondents have considered efficiency upgrades, including solar (13), LED lighting (12), battery backup (11), and smart thermostats (10).

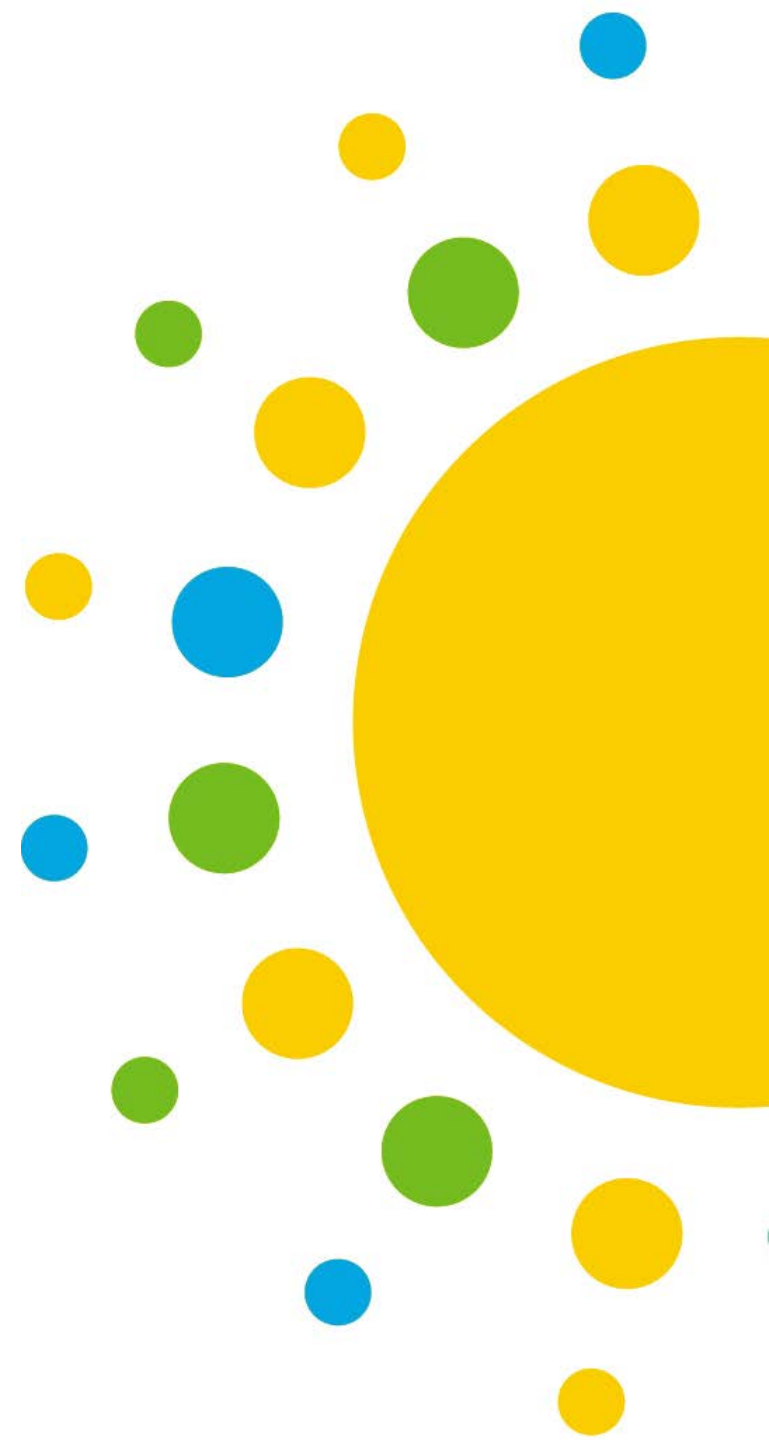
21 of 25 would support a solar garden in a vacant lot if it provided power to their business.

23 of 25 are interested in opportunities for community solar.

23 of 25 were unaware of any solar/battery initiatives in their neighborhood, community, and/or district.

Recommended Tools

Based on engagement with the city and stakeholders, the following tools were identified as the most useful for addressing the energy issues faced by New Orleans.



Recommended Tools

[REopt](#)[®]

- REopt is an NREL-designed tool that models optimization of energy systems for buildings, communities, microgrids, and more. This tool can recommend optimal mixes of renewable energy, conventional, and energy storage technologies to meet cost and resilience goals.

[SLOPE](#)

- This online data viewer delivers modeled energy data at the state and local jurisdictional levels. Users can explore multiple scenarios to meet their goals, evaluate the most cost-effective energy efficiency measures, and better understand building type uses.

[PV Watts](#)

- The online tool allows for estimation and sizing of rooftop and ground-mounted solar installations based on geography and system.

REopt Analysis Overview for Communities LEAP New Orleans

NREL used the **REopt** tool to evaluate distributed **solar photovoltaics (PV) and battery storage** for energy **resilience**, along with electricity bill **cost savings** and **decarbonization**, at two locations within the New Orleans community.

Specifically, the analysis focused on identifying **cost-optimal** solar + storage system sizing and project economics to help specific neighborhoods and community facilities provide **essential services via microgrid in case of an electric grid outage**, while also benefiting the community during normal operations.

REopt Deliverables

- Communities LEAP Deliverable
 - REopt analysis of 1-4 city selected sites with economic viability, needed system size, dispatch strategies, and prioritized sites with estimates of necessary critical load during grid outage analysis.
 - Final deliverable is a technical report and executive summary.
 - The final report on the two sites will be published in April and made available to the city.

SLOPE: State and Local Planning for Energy

How to use SLOPE

The [SLOPE Data Viewer](#) is designed to deliver modeled energy data resolved at state and local jurisdictional levels. Users can explore energy data potential and projections to better understand opportunities and options in energy planning. Population and building area data provide metrics to enable quantifiable goal setting.

Each data set has a description detailing the assumptions, methodology, and robust tools and models used to generate the data with links where users can seek additional details. Users can prioritize actions using SLOPE's localized data in the following areas:



ENERGY EFFICIENCY

- Projected energy efficiency potential by sector and incentive level.
- Top ten electricity and natural gas savings measures in single-family homes.



RENEWABLE ENERGY

- Technical generation potential (a combination of resource and development potential) for 14 renewable energy technologies.
- Projected levelized cost of electricity for 16 renewable energy and fossil fuel technologies and scales.



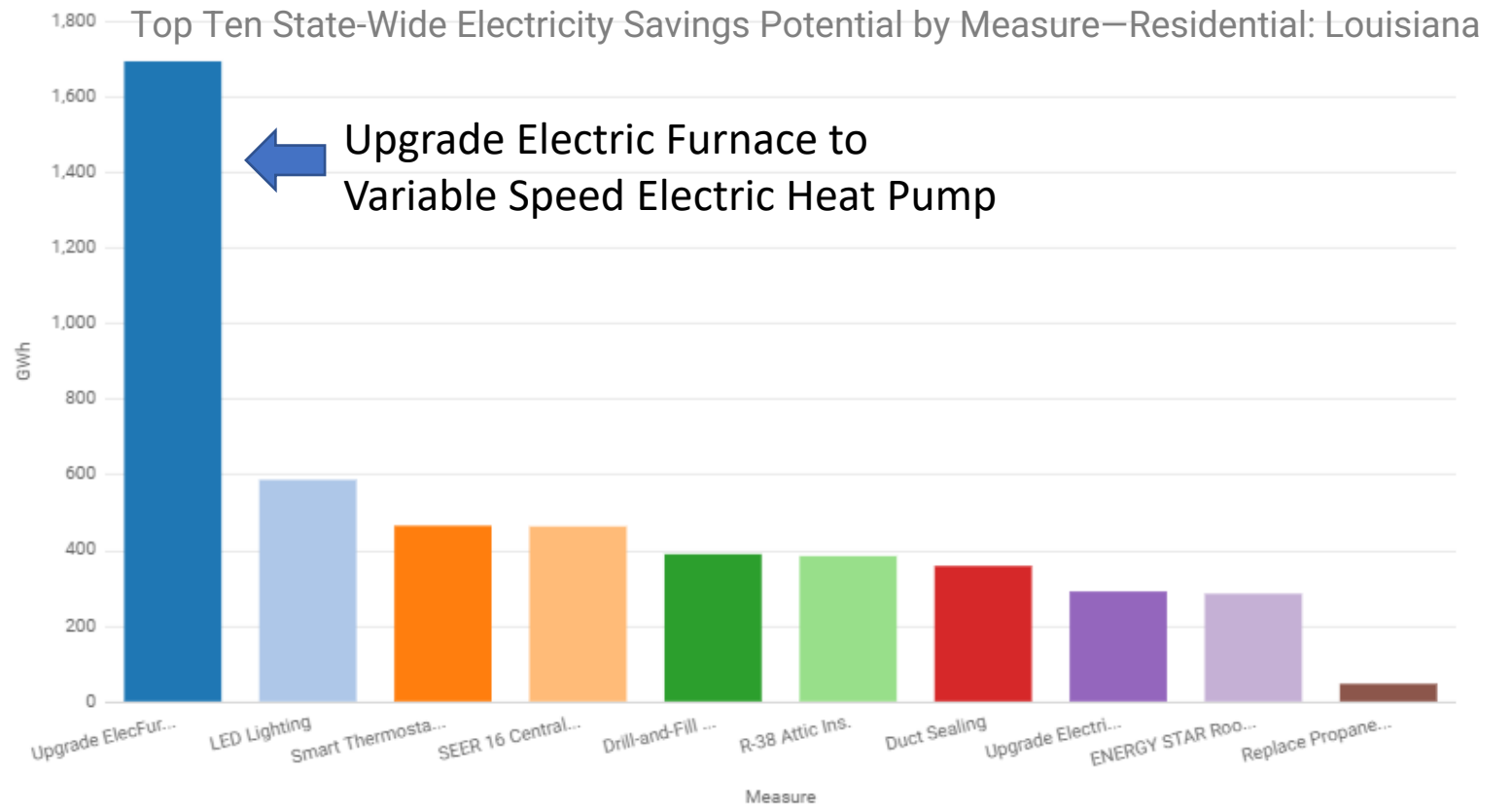
SUSTAINABLE TRANSPORTATION

- Current estimates and future scenarios for:
 - Vehicle registration by fuel type.
 - On-road vehicle fuel consumption.
 - Vehicle miles traveled (VMT).

Top Ten State-Wide Electricity Savings Potential by Measure—Residential

SLOPE can be used to prioritize investments and incentives that will provide the most cost and electricity savings for residential programs. This state-wide data is based on a representative sample of housing stock to show potential measures for energy efficiency.

Results shown are for Louisiana.



Data Filters

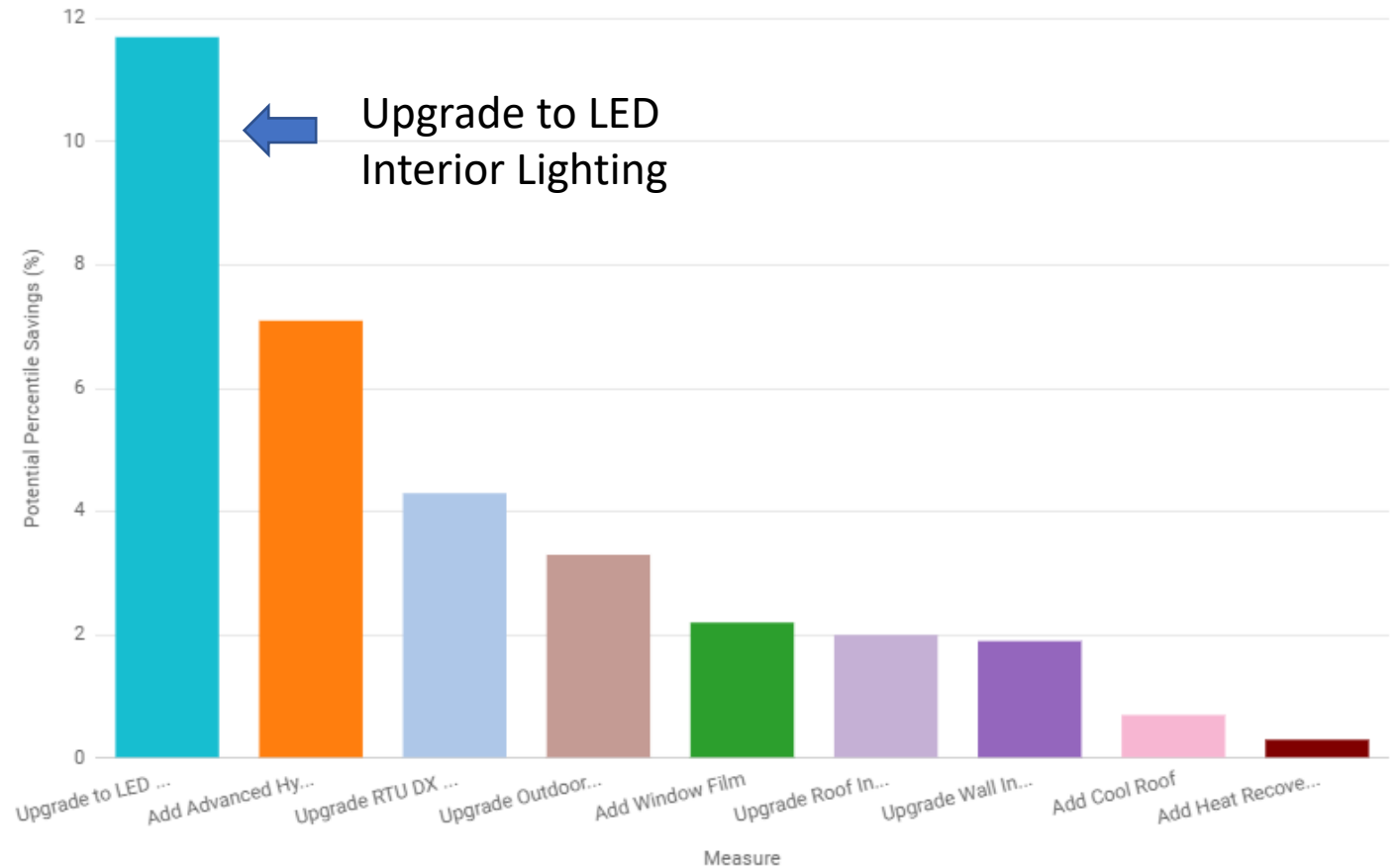
- Smart Thermostat
- Low-E Storm Windows (DIY)*
- SEER 18 Central AC*
- Drill-and-Fill Wall Insulation
- Duct Sealing
- R-49 Attic Ins.*
- LED Lighting
- ENERGY STAR Room AC (EER 12)
- Upgrade Electric WH to HPWH
- R-10 Crawlspace Walls*
- Replace Propane Furnace with VSHP
- Air Sealing*
- Upgrade ElecFurn to VSHP at Wear Out
- DHP (displaces electric baseboard today)*
- R-60 Attic Ins.*
- SEER 16 Central AC
- R-5 Wall Sheathing*
- R-10 Basement Wall Insulation*
- Replace Oil Furnace with VSHP*
- ENERGY STAR Boiler - Oil*
- ENERGY STAR Furnace - Propane*
- R-38 Attic Ins.
- ENERGY STAR Furnace - Oil*

Top Ten State-Wide Electricity Savings Potential by Measure—Commercial

SLOPE can be used to prioritize investments and incentives that will provide the most cost and electricity savings for commercial enterprises. This state-wide data is based on a representative sample of commercial building stock to show potential measures for energy efficiency. Top savings potential will vary by building and can be determined through an energy audit.

Results shown are for Louisiana.

Top Ten State-Wide Electricity Savings Potential by Measure - Louisiana



Data Filters ⓘ

- Add Advanced Hybrid RTUs
- Add Window Film
- Upgrade RTU DX Air Conditioner (IEER-17.0)
- Upgrade to LED Interior Lighting
- Add Cool Roof
- Upgrade Boiler (AFUE-94)*
- Upgrade Roof Insulation (R-30)
- Upgrade Wall Insulation (R-30)
- Add Heat Recovery
- Upgrade Outdoor Lights



NREL's PVWatts® Calculator

Estimates the energy production of grid-connected photovoltaic (PV) energy systems throughout the world. It allows homeowners, small building owners, installers and manufacturers to easily develop estimates of the performance of potential PV installations.

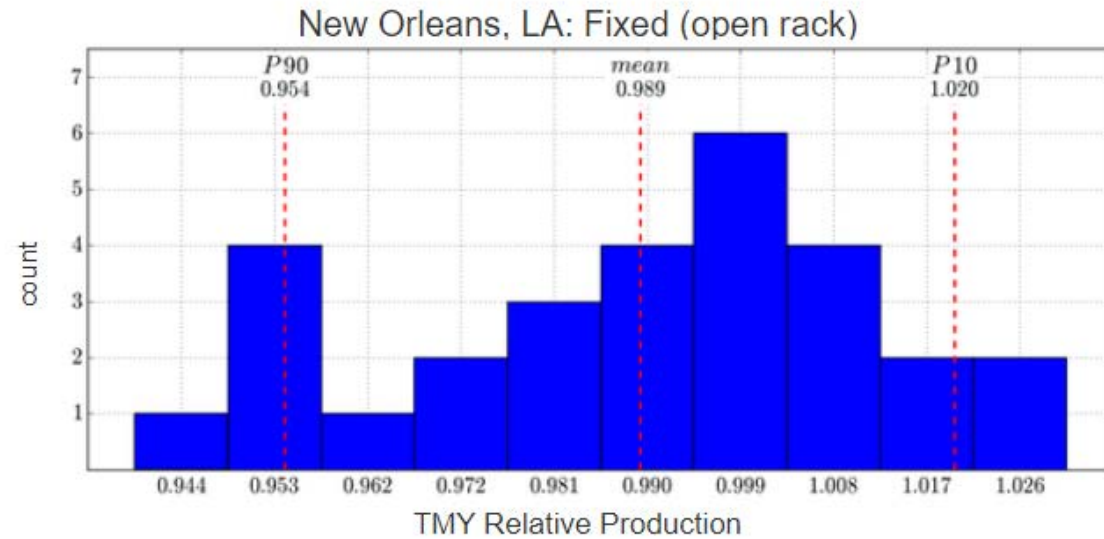
RESULTS

Print Results

5,915 kWh/Year*

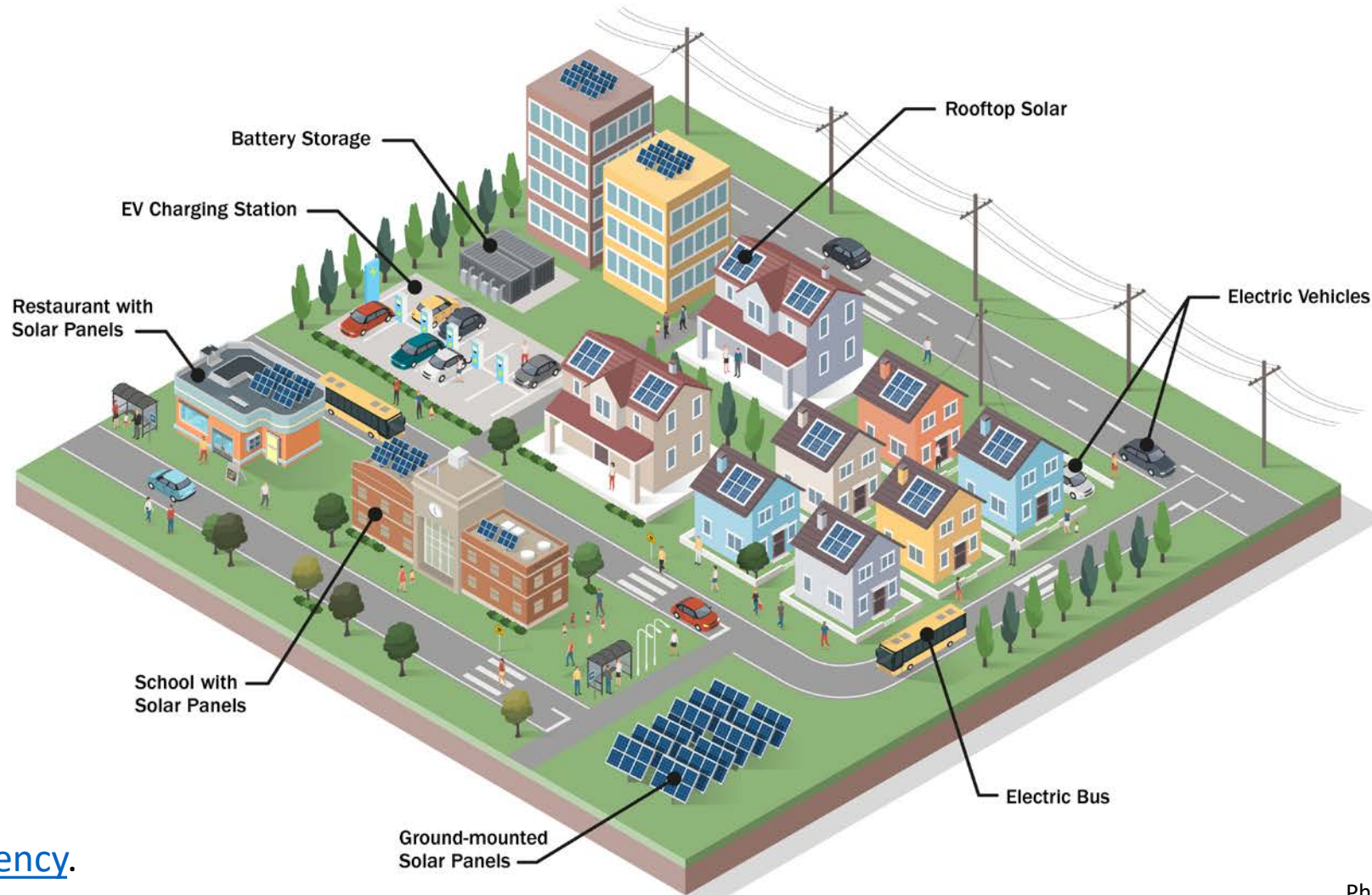
System output may range from 5,645 to 6,033 kWh per year near this location.
Click [HERE](#) for more information.

| Month | Solar Radiation (kWh / m ² / day) | AC Energy (kWh) |
|---------------|---|----------------------|
| January | 3.71 | 373 |
| February | 4.33 | 387 |
| March | 5.50 | 533 |
| April | 6.00 | 552 |
| May | 6.40 | 597 |
| June | 6.02 | 533 |
| July | 5.71 | 524 |
| August | 5.57 | 514 |
| September | 5.86 | 531 |
| October | 5.65 | 543 |
| November | 4.69 | 447 |
| December | 3.79 | 382 |
| Annual | 5.27 | 5,916 |



[PVWatts](#) is a free online tool that can be used to determine the best areas for investment in community and rooftop solar, including where to focus incentive programs.

Microgrids for Resiliency



Read more about [Microgrids for Resiliency](#).

Photo credit: NREL/FS-7A40-84707

Microgrid Definition and Benefits

Microgrid:

A microgrid is a group of interconnected loads and distributed energy resources that acts as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode. Microgrids can improve customer reliability and resilience to grid disturbances. (Narang et al. 2022)

Microgrids can disconnect from the area electric power system (EPS) and operate in parallel with the local utility. They are not exclusively designed to provide emergency back-up generation.

Intentional Island:

Intentional islanding is a feature of microgrids and refers to a "planned electrical island that is capable of being energized by one or more local EPSs. These (1) have distributed energy resources (DERs) and load, (2) have the ability to disconnect from and to parallel with the Area EPS, (3) include one or more Local EPS(s), and (4) are intentionally planned." (IEEE 2018)

Sources:

Narang, David, Sigifredo Gonzalez, Michael Ingram, and Michael Ropp. 2022. Overview of Functional Technical Requirements for Intentional Islands. Golden, CO: National Renewable Energy Laboratory. NREL/TP-5D00-83301. <https://www.nrel.gov/docs/fy23osti/83301.pdf>.

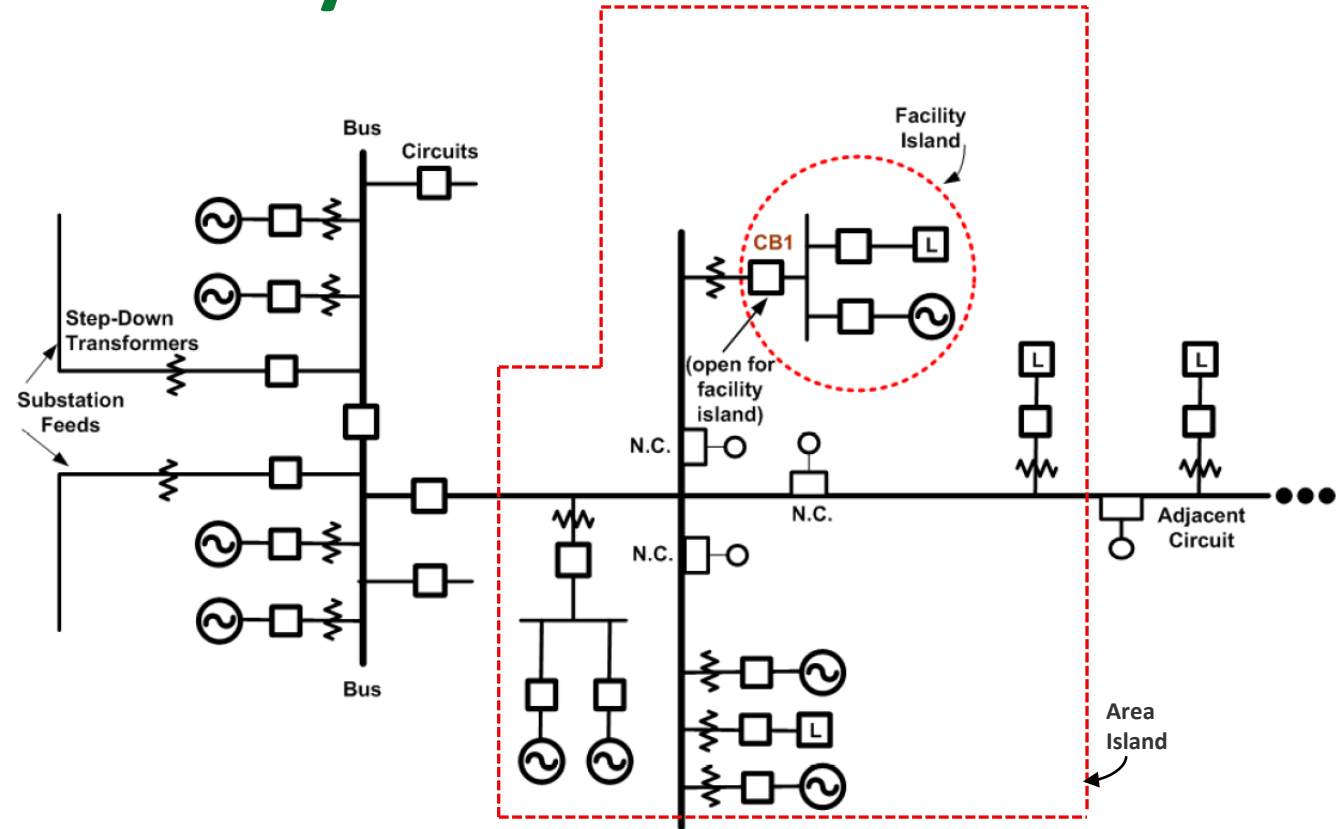
Institute of Electrical and Electronics Engineers (IEEE). 2018. IEEE Std 1547-2018 – IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces. Piscataway, NY. <https://standards.ieee.org/standard/1547-2018.html>.

Microgrids and Energy Security

- Types of microgrids:
 - Facility
 - Area (multiple facilities) – from campus to community
 - Regional scale

Microgrids provide Energy Security:

“Having assured access to reliable and sustainable supplies of energy and the ability to protect and deliver sufficient energy to meet operational needs.” (U.S. Navy definition)

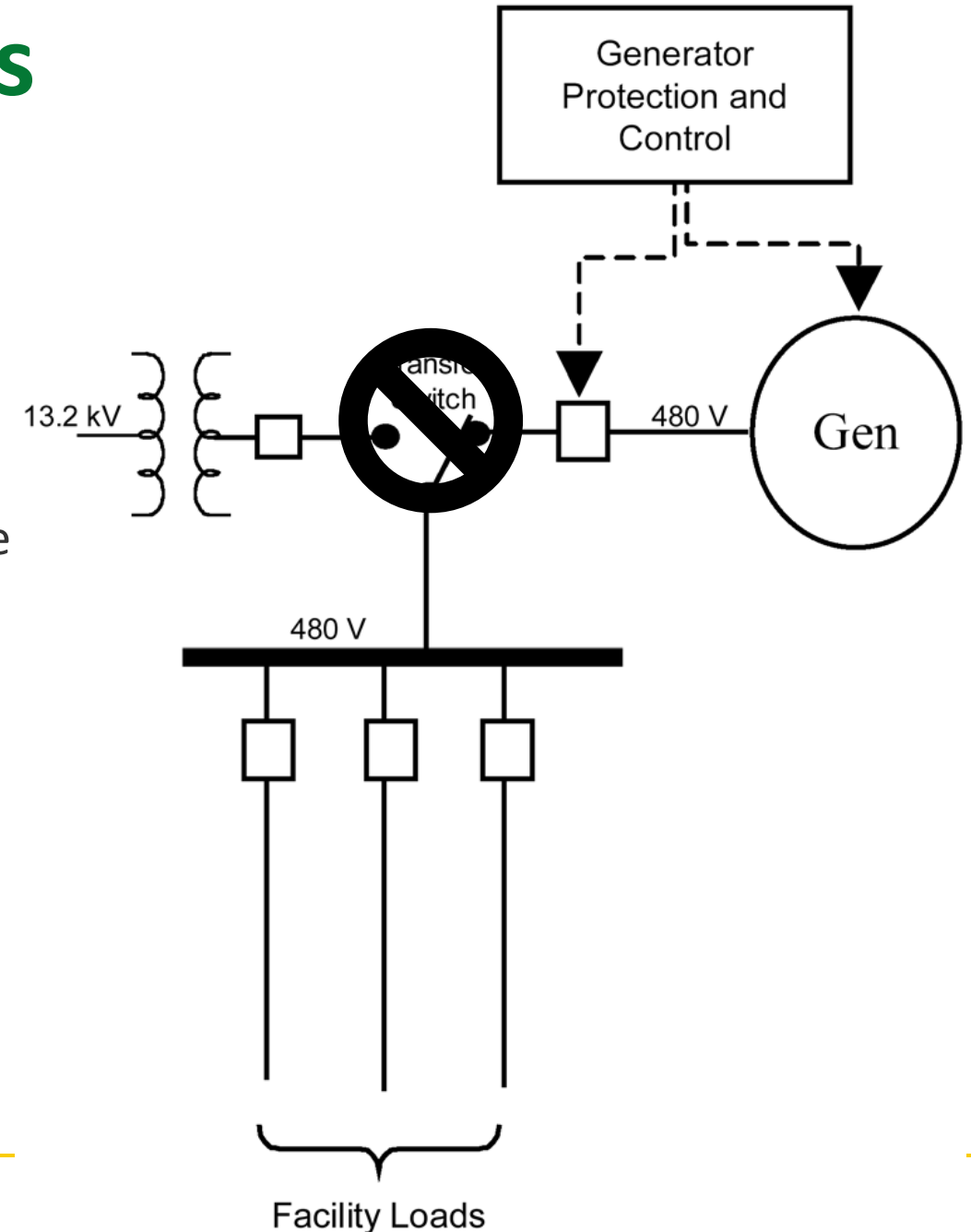


Energy Security factors include:

- Resiliency
- Sustainability
- Safety

Microgrid Operating Modes

- **Two basic modes of microgrid operation:**
 - Grid-connected - Peak shaving and demand response functions through interaction with building management, energy storage, and/or distributed resources
 - Islanded or isolated
- **Simple microgrid controllers** monitor electrical service and transfer to backup generators when the utility supply is compromised.
- **More complex controllers** monitor the state of the integrated electrical system, manage energy resources and loads for optimal performance and economic benefits, and transition the system to isolated operation from the utility when necessary.
- **Energy security/priority load management** is a key function in islanded operating mode.



Islanding and Interoperability

Intentional island: An electrical island that is capable of being energized by one or more local electric power systems (IEEE Std. 1547-2018, p. 23).

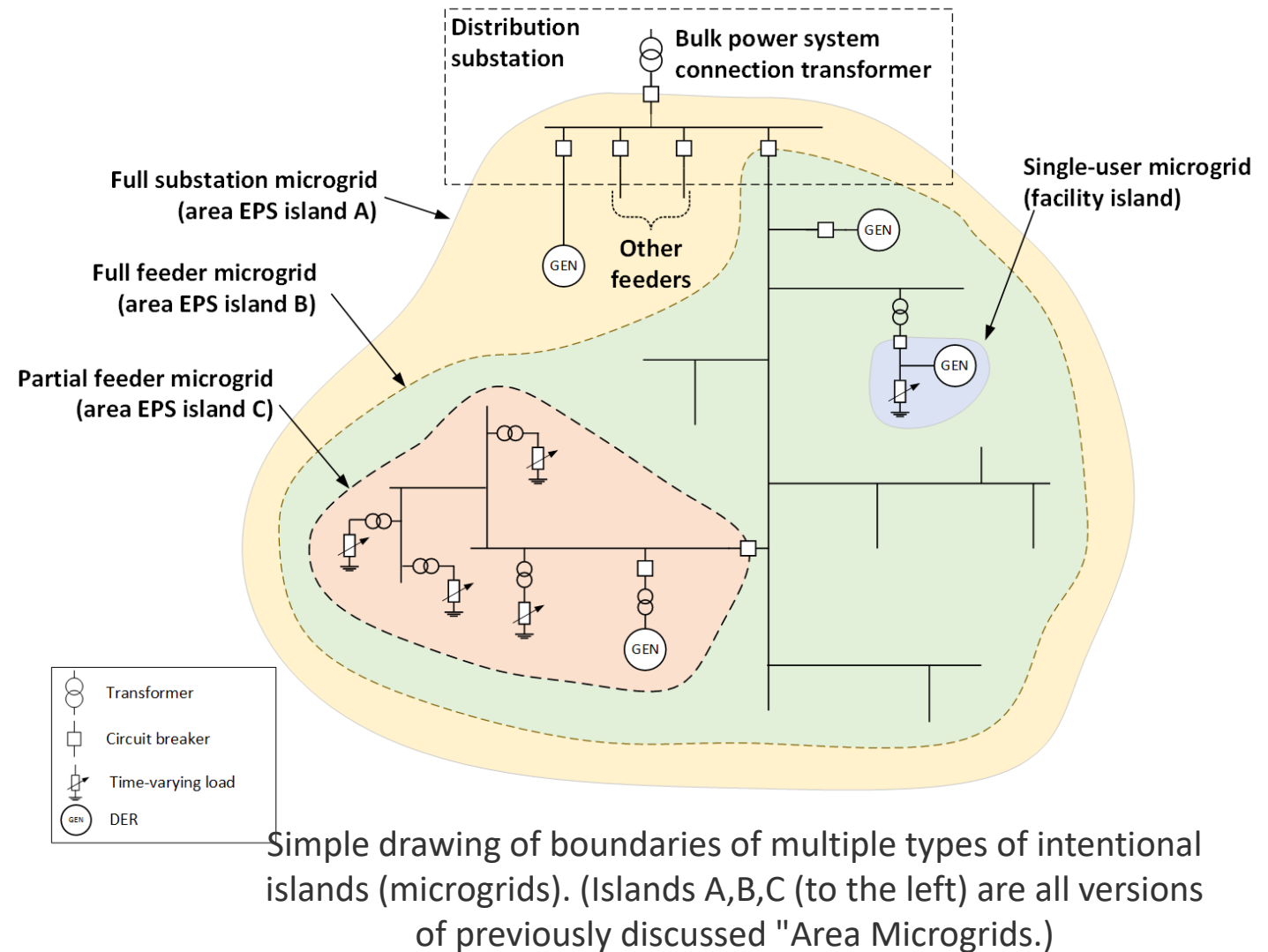
Value of interoperability:

- Increase resiliency (e.g., to grid events or weather events that incapacitate the grid).

Potential Stakeholder Discussion Topics

- Coordination with utility operations.
- Integration with utility SCADA* and with DER management tools.
- Special technical requirements.
- Changes to protection settings.

*SCADA: Supervisory Control and Data Acquisition used to monitor and control an energy plant.



Policy and Regulatory Analysis

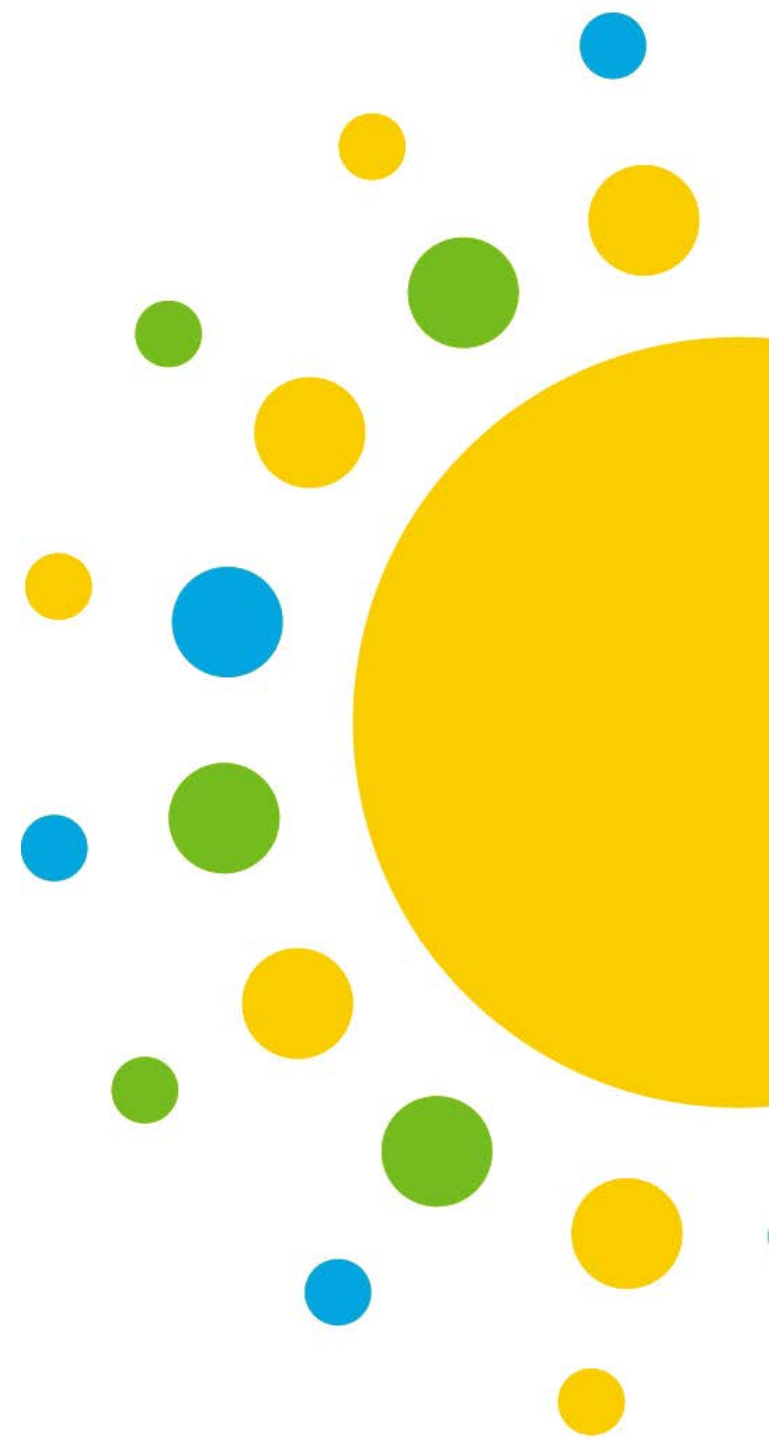
Current Entergy New Orleans (ENO) policy *disallows the islanding required for microgrids.*

- ENO’s policy defines “unintentional islanding” in Section 2.0 but does not define “intentional islanding” or “intentional area islanding.”
- ENO’s policy does not provide the technical requirements for *intentional islanding and/or intentional area islanding* in subsection 3.42 – Categories for Distribution-Level Interconnections.

Potential Approaches:

- Begin collaborative stakeholder process to address these identified issues.
- Include *Intentional Island* and *Intentional Area Island* in Section 2.0 Definitions.
- Consider adding case(s) for Intentional Islanding in *Introduction and Summary of Interconnection Types*, and in subsection 3.42.

Potential Microgrids and Resilience Hubs in New Orleans



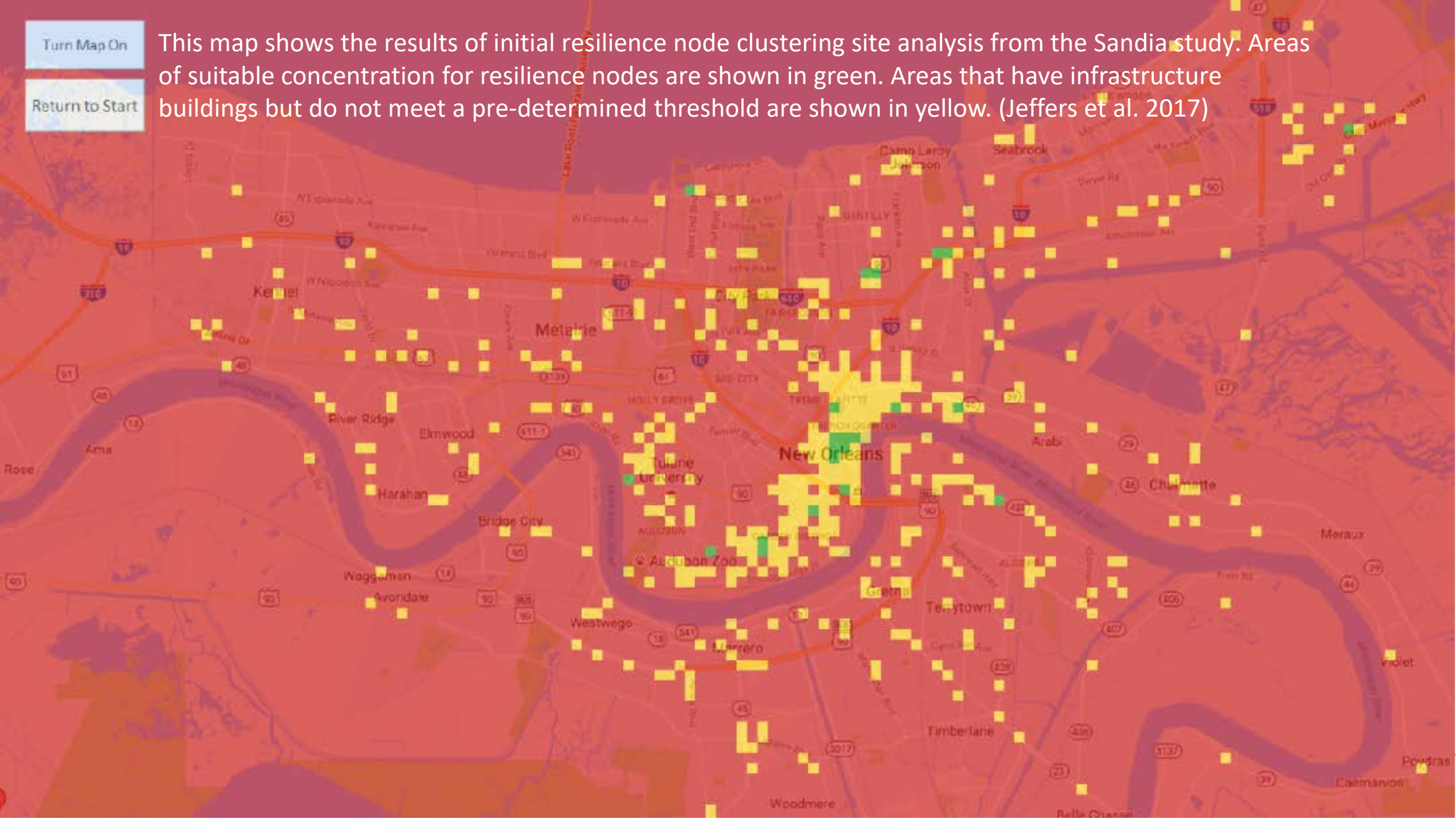
Background

- In 2017, the City of New Orleans worked with Sandia National Laboratories to examine optimal microgrid locations. This analysis was based on infrastructure services and the ability to support critical needs of the community during a reasonable worst consequence storm (Category 2 or low Category 3).
- The Sandia report identified 22 draft locations that could provide infrastructure services equitably to New Orleans residents. (See map on next slide.)
- This work started as the conceptual starting point for the city's exploration of microgrids and helped inform the sites considered for REopt analysis through Communities LEAP.

Turn Map On

Return to Start

This map shows the results of initial resilience node clustering site analysis from the Sandia study. Areas of suitable concentration for resilience nodes are shown in green. Areas that have infrastructure buildings but do not meet a pre-determined threshold are shown in yellow. (Jeffers et al. 2017)



Potential Microgrids in New Orleans

- The following slides show locations under consideration by New Orleans for potential microgrids. These sites were considered for REopt analysis but not selected as they currently have funding for further analysis from other sources. They demonstrate the characteristics New Orleans is considering in identifying potential microgrid locations.

Potential Microgrids in New Orleans – 1

[Agriculture Street Former Landfill](#)

Contamination at the site has been addressed with excavation and disposal of materials as well as a permeable cap, which is monitored by bi-annual inspections and Five-Year Reviews.

This site was evaluated for solar in 2021 with support from the U.S. Environmental Protection Agency’s Superfund Redevelopment and RE-Powering America’s Lands programs. A renewable reuse assessment and solar feasibility study examined the 45-acre landfill and nearby residential properties.

The site is located in a historically Black community that faces the compound impacts of low-lying area flood damage and the fact that many homes and neighborhood amenities were built in an area later designated as a federal Superfund site. The City’s interest in a solar development at the site meets several goals, including improving resiliency against natural disasters, greening New Orleans, addressing historical environmental justice concerns in the Desire Area Neighborhood, and decreasing the City’s carbon footprint. The site could potentially host community solar in addition to a microgrid.

Available acreage: 40 acres

Potential size: 6,400 kW

Annual site load: 40,680,252 kWh

Federal tax incentives now available to local municipalities were not included in this evaluation.

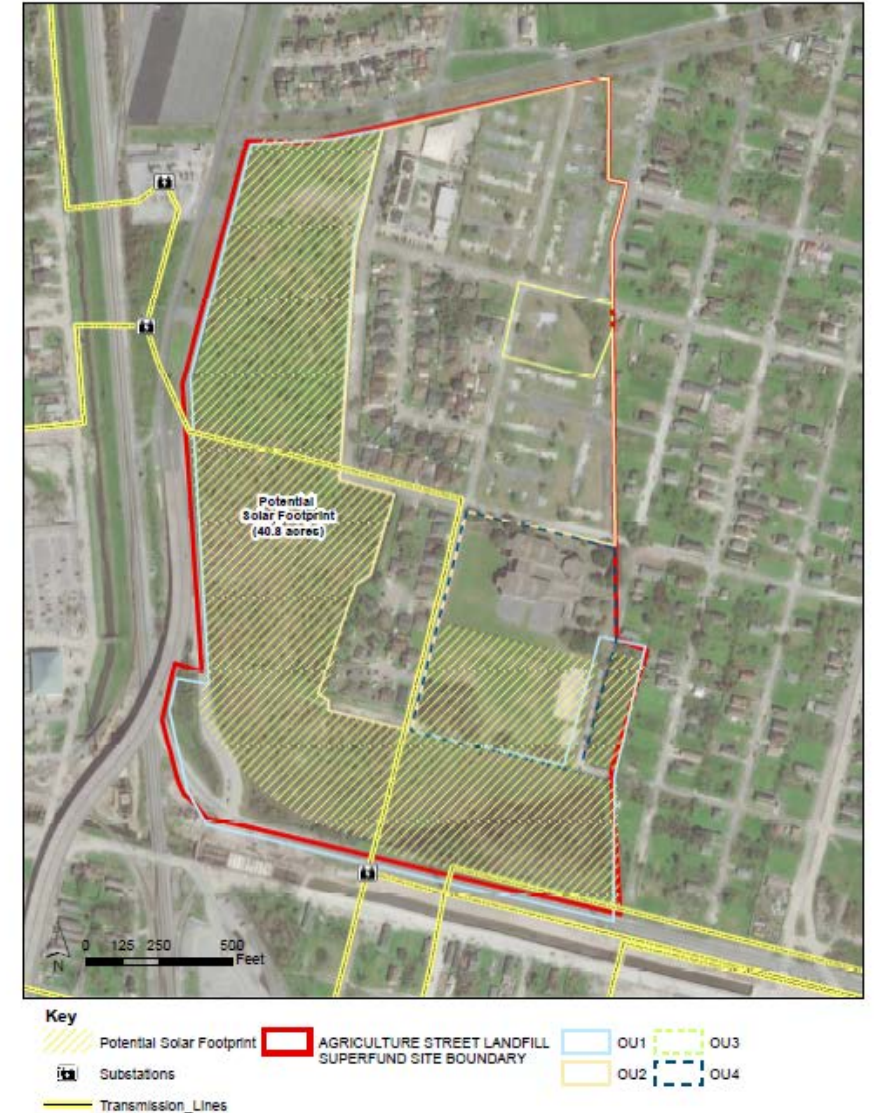


Figure 3. Potential Solar Footprint and Electric Transmission Lines.

Potential Microgrids in New Orleans – 2

[Sanchez Multi-Service Center](#)

The Federal Emergency Management Agency's Building Resilient Infrastructure and Communities (BRIC) grant has provided funds to design a solar + battery storage emergency backup power system at the Sanchez Multi-Service Center, 1616 Fats Domino Avenue, in the Lower Ninth Ward.

Funding from the award will be used to plan and design the City's first solar-powered generator system to be used for emergency response efforts during power outages and disasters.

The planning and design phase will also investigate the feasibility of future expansion of the project to build a neighborhood-wide, solar-powered microgrid to prevent long-term power outages to the area.



Potential Microgrids in New Orleans – 3

Joe W. Brown Recreation Center

The Joe W. Brown Recreation Center at 5601 Read Boulevard in New Orleans East is the site of a proposed microgrid project with solar and battery storage. The initial phase would include a detailed design for photovoltaics and battery installation that could, in the future, support a larger area microgrid.

The project would use Hurricane Ida Hazard Mitigation Grant Program funds for the initial design.



Potential Microgrids in New Orleans – 4

RTA Downtown Transit Center

New Orleans Regional Transit Authority was awarded funds through a RAISE grant for a downtown transit center in the Innovation District. This site is the hub of the RTA network, served by the high-frequency/high-capacity Canal Streetcar line and the intersecting Loyola-Rampart Streetcar, as well as the junction of RTA and Jefferson Parish Transit routes.

This project will improve safety for transit riders, pedestrians, and cyclists; expand access to essential services; improve reliability and on-time performance with travel time savings; and help meet the City's emissions reduction and sustainability goals.

The project will include an electric bus charging infrastructure with the potential for a future microgrid.

Barriers to be addressed:

- Currently in a net-metering prohibition area.
- Some of the oldest energy infrastructure in the city.

Possible solutions:

- Work with ENO to address net-metering rule.
- Work with ENO for timeline on infrastructure investments.
- Identify possible funding sources.



Solar Feasibility Study

C40 analyzed city-owned buildings and properties for solar.

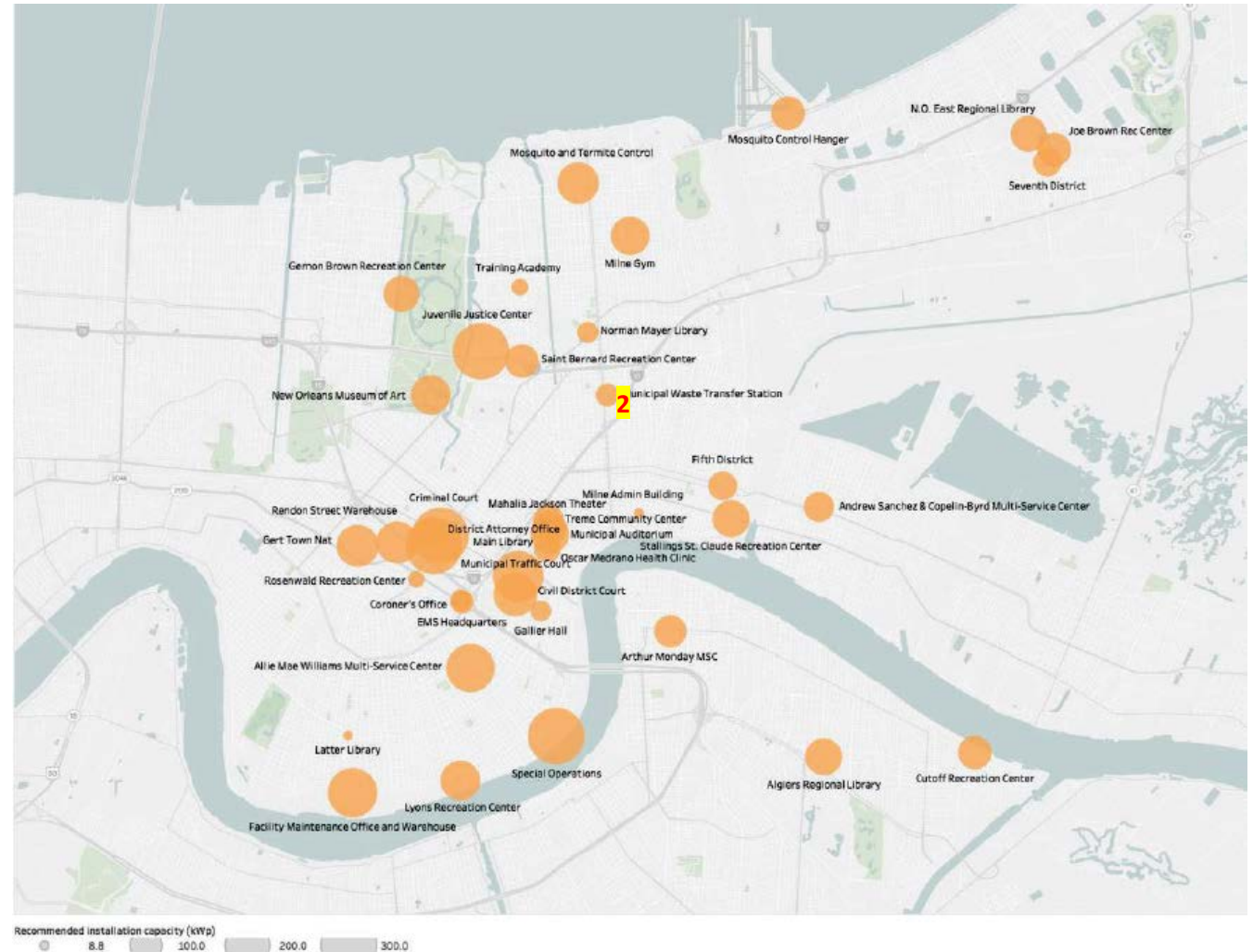
| Summary of the analysis | City-owned buildings | City-owned lands |
|----------------------------------|----------------------|------------------|
| Number of sites | 40 | 22 |
| Available area | 426,154 sq ft | 11,649,620 sq ft |
| Solar PV Capacity | 5 MW (recommended) | 23.3 MW |
| Annual generation | 7.2 GWh | 34.6 GWh |
| Lifetime CO ₂ savings | 62,983 tonnes | 303,357 tonnes |
| Installation cost | \$9,210,674 | \$24,697,194 |
| Average payback years | 18 | 9 |
| Average IRR | 2.3% | 9.5% |

- Conducted by C40 in 2020.
- Prior to Inflation Reduction Act allowance of tax credits for municipalities.
- Next steps:
 - Structural review of rooftops.
 - Re-evaluation with tax credits.
 - RFP development.
 - Inclusion of select facilities/properties in REopt analysis.
- The following two slides show locations of buildings and properties evaluated in this report.

Solar Feasibility Study: City Buildings

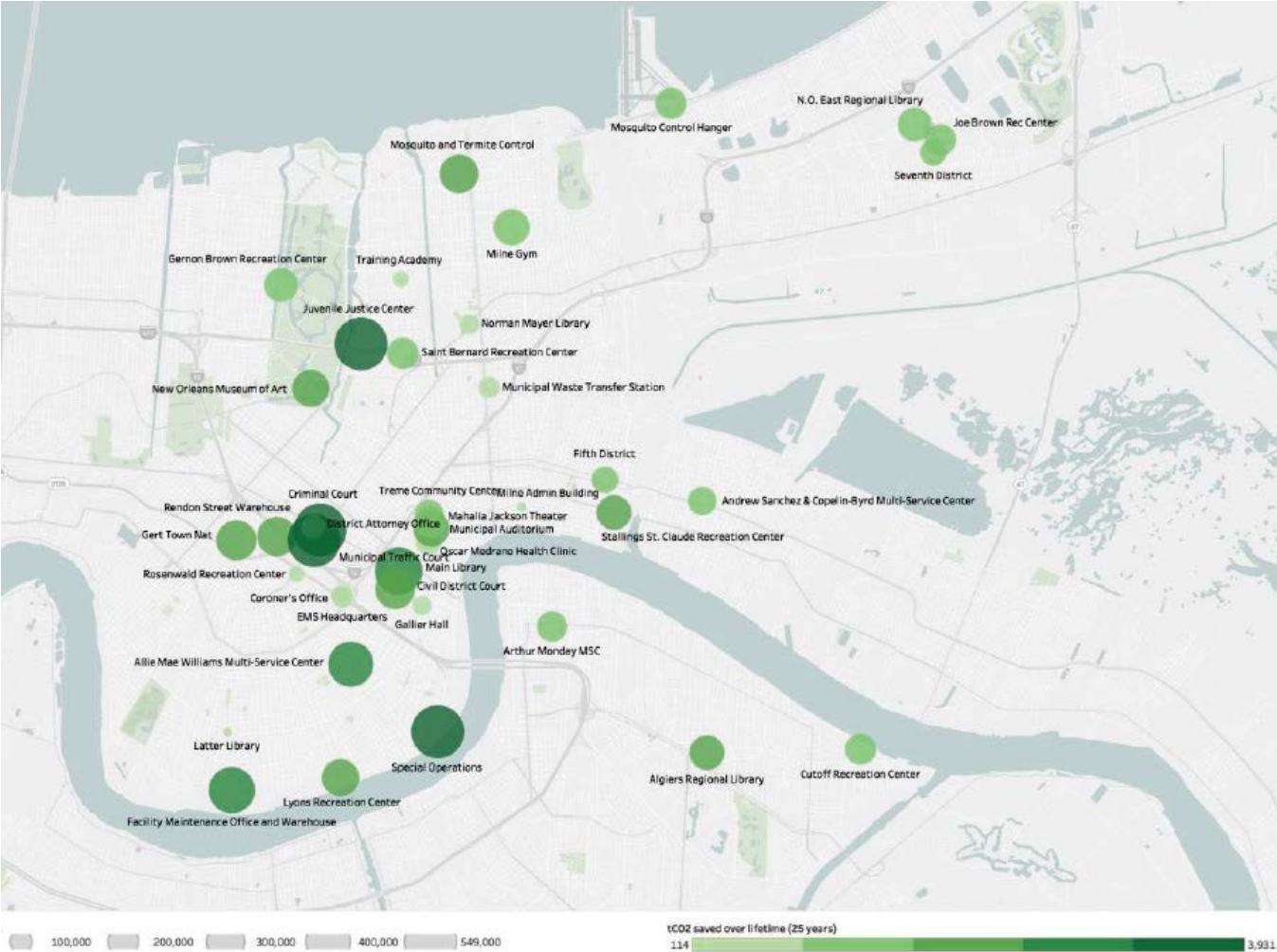
Solar PV Capacity: 5 MW
Annual Generation: 7.2 GWh

28



Solar Feasibility Study: City Properties

Solar PV Capacity: 23.3 MW
Annual Generation: 34.6 GWh



Opportunities for Resilience Hubs

These properties were identified through stakeholder engagement as potential sites for future resilience hubs.

- Libraries
 - Multiple locations across the city
 - 4 have temporary natural gas generators.
 - Serve as resilience hubs/FEMA sites.
 - Provide cooling, charging, computer access.
- Schools
 - 2 serve as disaster response sites.
 - Downsizing as enrollment declines.
 - Multiple properties available for ground-mounted solar arrays + battery storage.
 - Committed to providing community benefit.
- Transit Authority properties
 - Buses can act as cooling centers in disaster.
 - Currently a 300 kW system on streetcar barn.
 - Goal is electrification of 75% of fleet by 2030.
 - Looking for sites for EV bus charging stations.
 - Has bonding authority.
- Vacant lots
 - Space for community solar gardens in neighborhoods.

Possible Microgrid Locations

From stakeholder engagement

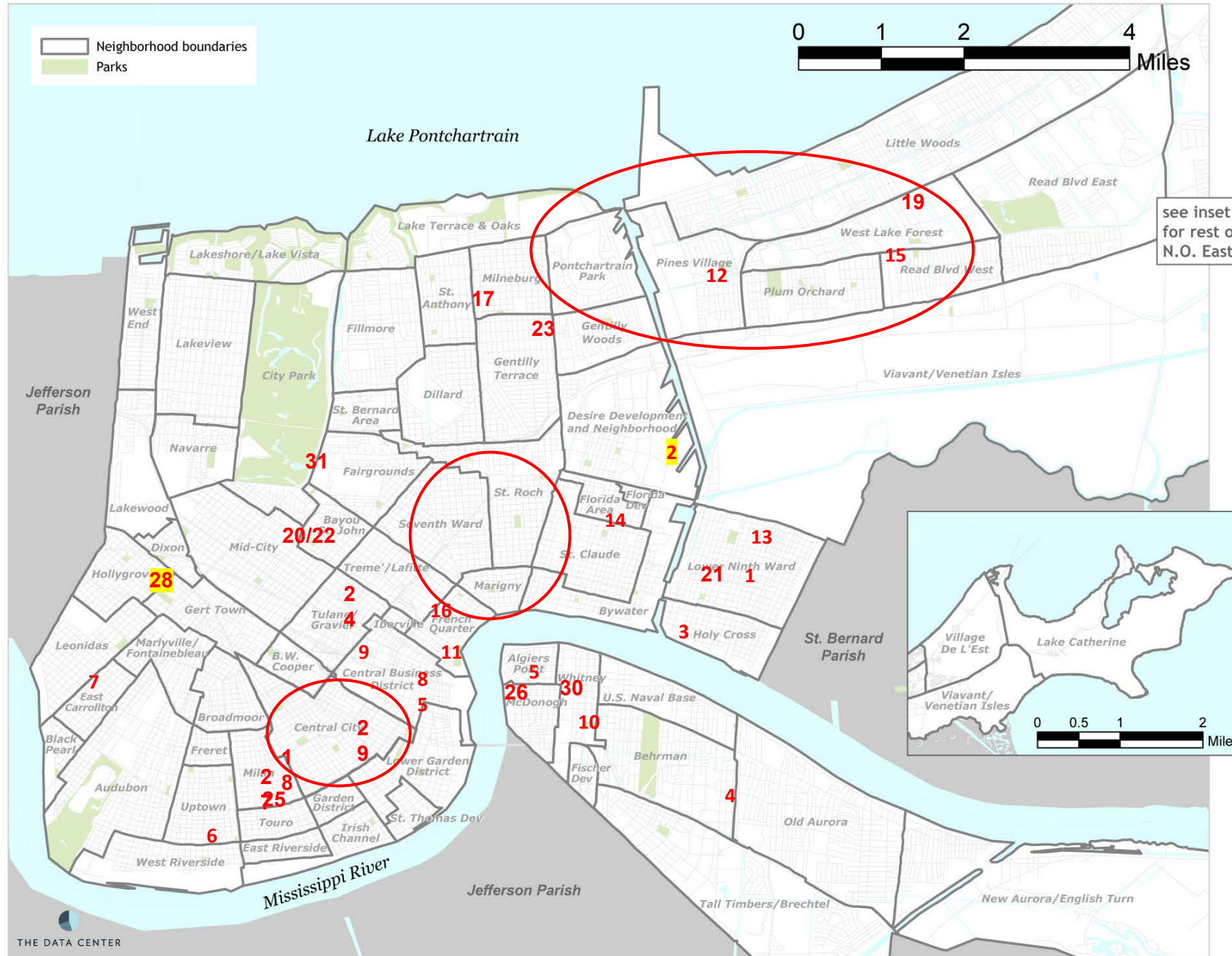
- Neighborhoods
 - Lower 9th Ward
 - New Orleans East
 - Upper 9th Ward
- Resilience Hubs
 - Community centers, libraries
- Fire, EMS
- Ag Street former landfill
- City-owned buildings
- Near public transportation
- RTA facilities



Site Selection for REopt Analysis

- A list of possible sites for REopt analysis was created based on the following:
 - Stakeholder input.
 - Current and upcoming funding (BRIC, Hurricane Ida Hazard Mitigation Grant Program, RAISE, GRIP).
 - Benefit to disadvantaged neighborhoods.
 - Funding to build a microgrid in each council district.
- Ultimately, two sites were selected for in-depth REopt analysis: The Ag Street site and the Carrollton-Hollygrove Senior Center.
- The following map shows all sites considered.

New Orleans neighborhoods 2010



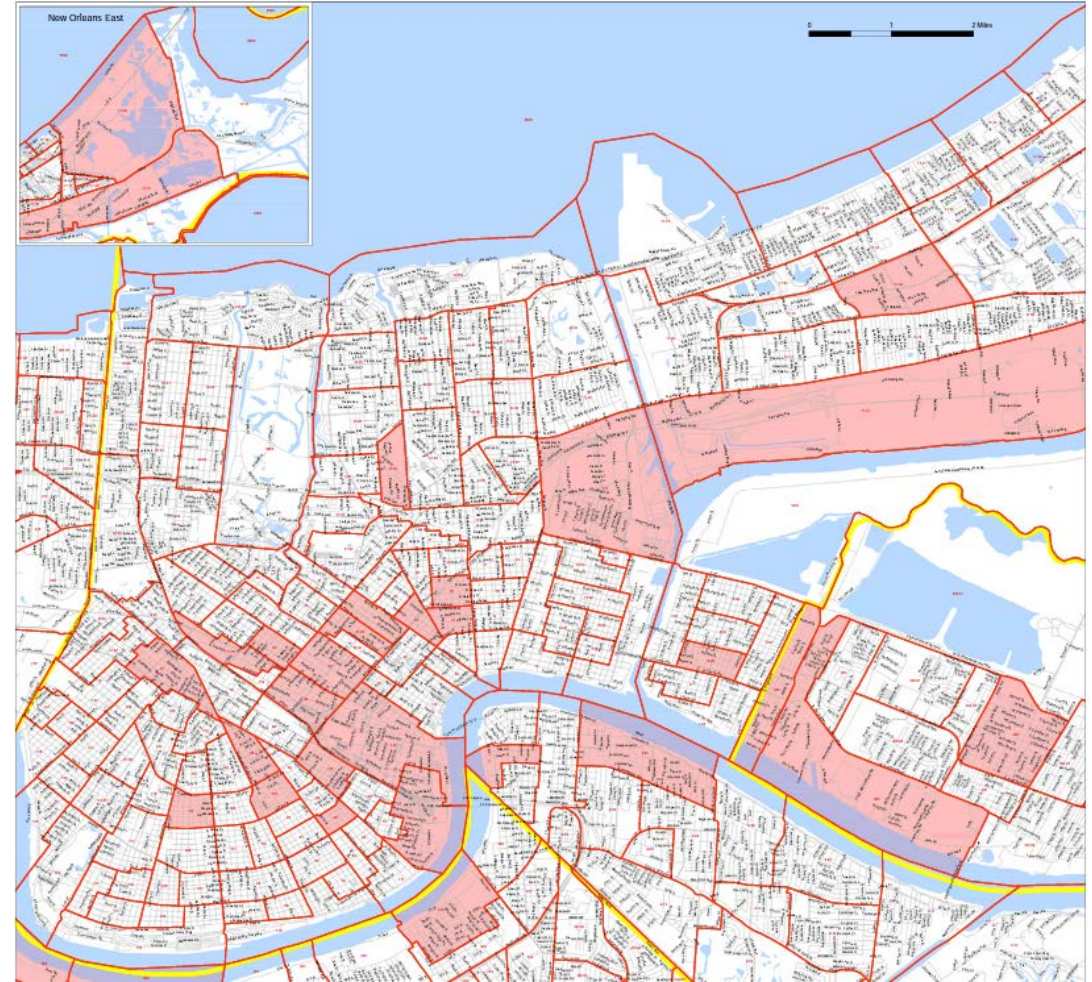
1. Sanchez Center
 2. Ag Street former landfill
 3. CSED
 4. Algiers Regional Library
 5. Hubble Library
 6. Latter Library
 7. Nix Library
 8. City Hall/Courthouse
 9. New Orleans EMS
 10. Landry High School
 11. Fire Department Headquarters
 12. NO East—NORA vacant properties
 13. Lower 9th Ward—NORA vacant properties
 14. Upper 9th Ward—NORA vacant properties
 15. Joe Brown Rec Center
 16. Proposed RTA Transit Hub
 17. Gentilly Resilience District
 18. Former Incinerator, 7th & Saratoga
 19. Community Lighthouse Household of Faith
 20. Community Lighthouse First Grace UNC
 21. Community Lighthouse Central Missionary
 22. Queen Trini Lisa*
 23. Lit Afrodesiac*
 24. Fritai*
 25. Wakin Bacon on Prytania **
 26. Plume Algiers **
 27. Mosquito Supper Club **
 28. Carrollton-Hollygrove Senior Center
 29. Allie Mae Williams Multi-Service Center
 30. Arthur Monday Multi-Service Center
 31. Juvenile Court
- Most climate vulnerable neighborhoods (Climate Change & Health Report 2018)
- Sites highlighted in yellow were selected for in-depth REopt analysis.
- * Get Lit/Stay Lit location
- ** In the pipeline for Get Lit/Stay Lit

THE DATA CENTER
 Data sources: Water & parish boundaries (Census Tiger files), parks (ESRI StreetMap 2003), neighborhood boundaries (City Planning Commission of New Orleans)

Other Considerations

Financial considerations will depend on the ownership structure. Additional funding in the form of [tax credits](#) for a private developer or a “direct pay” to the city may apply in highlighted areas depending on the model used.

DOE Disadvantaged Communities



IRS Opportunity Zones

REopt Analysis

- The Ag Street Landfill site and the Carrollton-Hollygrove Senior Center were selected based on community input, feasibility, and diversity of project types.
- Additional REopt analysis is being provided by NREL through BRIC funding at the Sanchez Center.
- Students at the Colorado School of Mines will be conducting REopt analysis of three additional sites under the supervision of NREL staff.
 - Arthur Monday, Allie May, and Desire/Florida MCS

REopt Deliverable

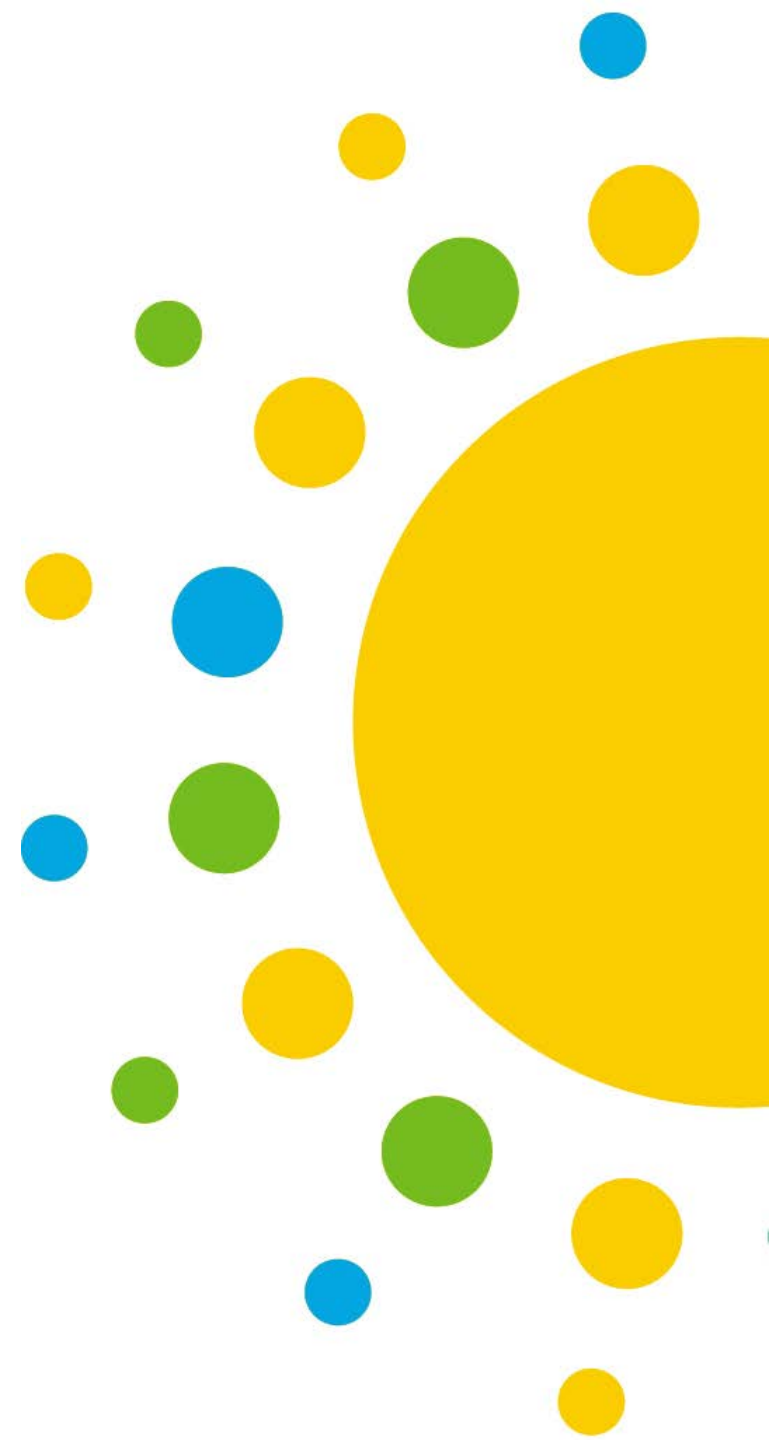
- Communities LEAP Deliverable
 - Final deliverable is a technical report and executive summary that will be published in April 2024

Funding Opportunities

Upcoming funding opportunities are in the

[Communities LEAP funding database:](https://www.energy.gov/communitiesLEAP/funding-database)

www.energy.gov/communitiesLEAP/funding-database



Inflation Reduction Act (IRA)

- Clean Energy tax credits (up to 70%)
 - “[Direct Pay](#)” - The IRA allows tax-exempt entities, such as municipalities and municipal utilities, to monetize the full value of the investment tax credit (ITC) and receive a payment from the Treasury Department in lieu of claiming the credit on their taxes.
 - Additive to the 30% are a possible [10% tax credit](#) for electricity generation facilities in low-income communities and [20% tax credit](#) for energy storage in low-income communities.
- Clean Electricity Investment Credit creates a new, technology-neutral, 10-year ITC in 2025 for energy generation or storage facilities.
- Tax credits should be carefully reviewed for eligibility.

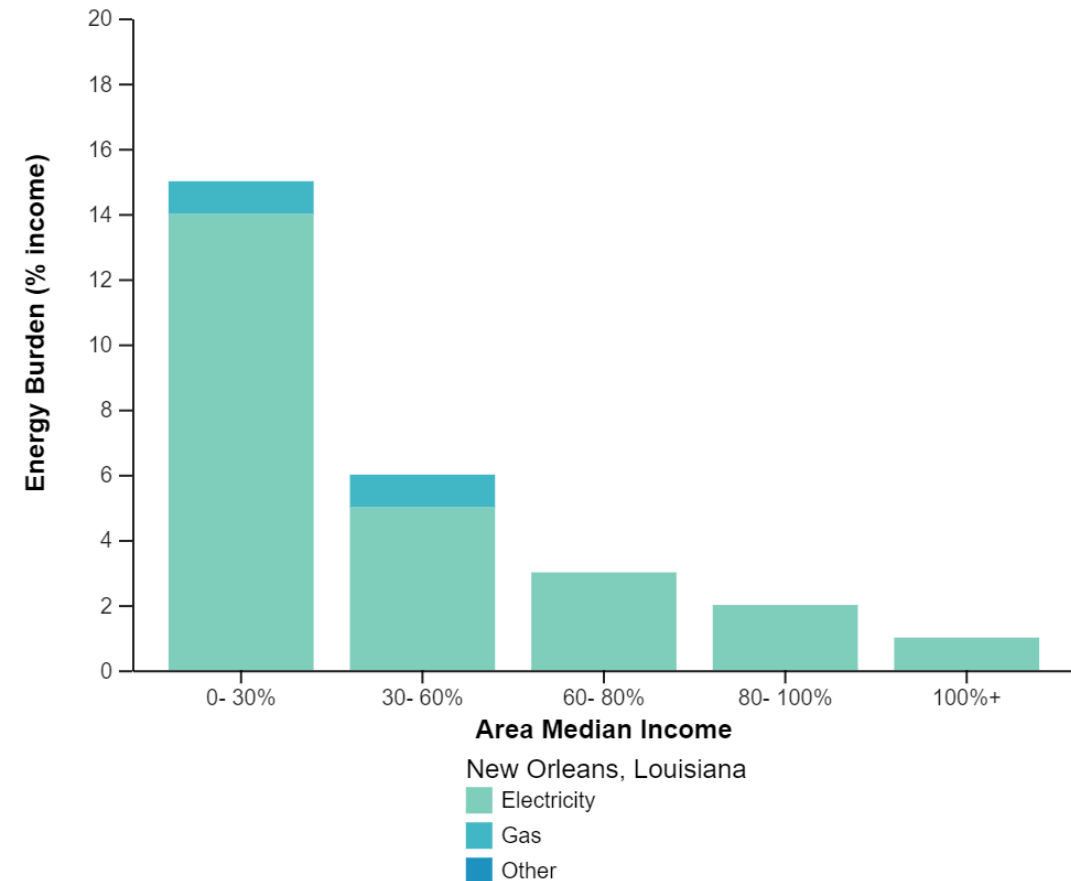
Funding to Address Energy Burden

The most cost-effective method of reducing energy burden is to increase home efficiency.

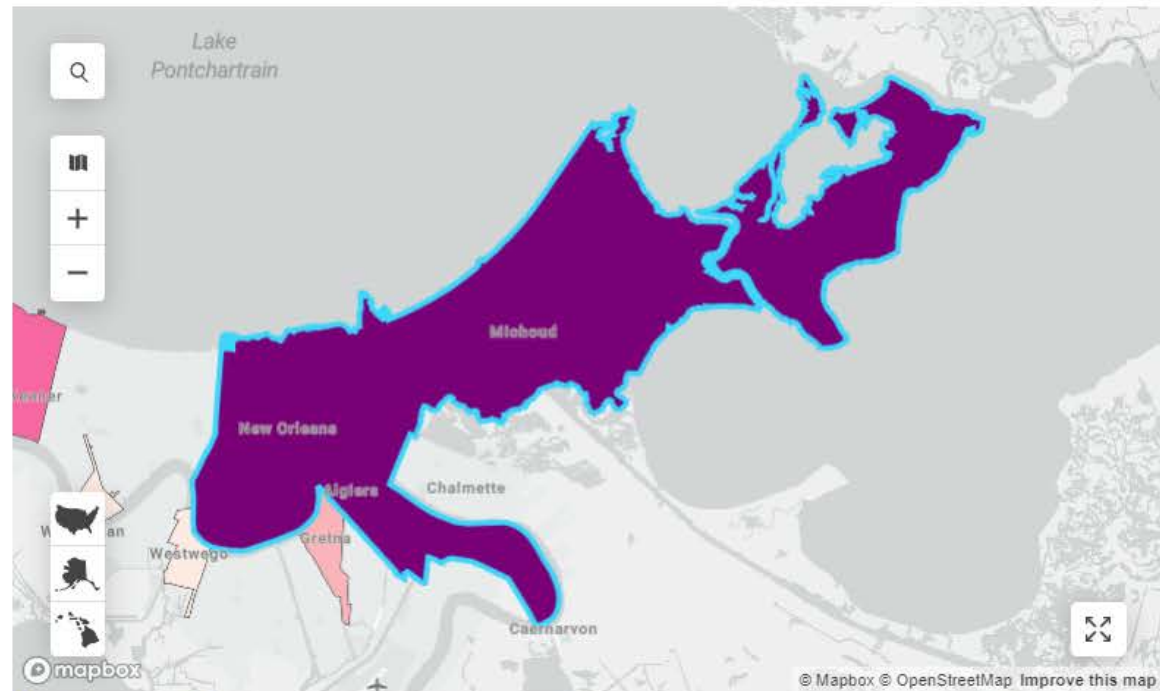
Energy burden is the percentage of total income spent on energy. In New Orleans, those at 0%–30% of the Area Median Income spend an average of 14% of their income on electricity.

Many federal programs are prioritizing energy-burdened communities in order to alleviate energy burden for low-income families.

Energy Burden for New Orleans, Louisiana



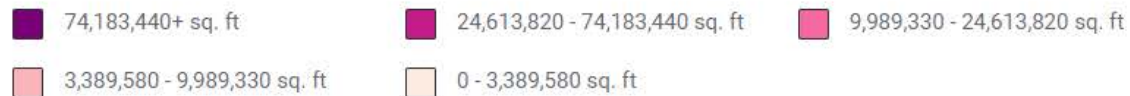
Commercial Building Area (2020) by City



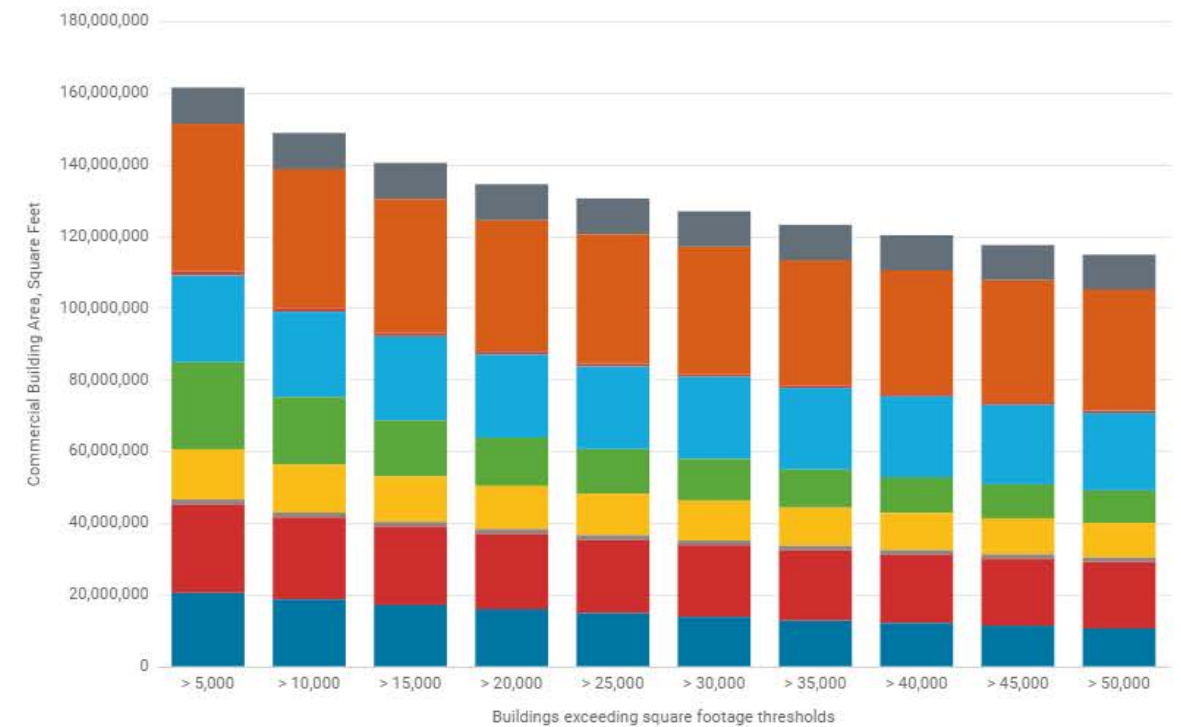
Map & Graph Resolution: City State: Louisiana City: New Orleans

Map Legend

(Commercial Building Area, Square Feet)



Commercial Building Area by Building Size and Type (2020) by City - New Orleans



Data Filters



The SLOPE tool described earlier can help prioritize where to focus energy efficiency incentives or outreach. This shows the predominant commercial uses in New Orleans. Note that multifamily housing is one of the most common uses by square footage.

For further information, visit the SLOPE's [Data Viewer](#), select the "Controls" panel, select "City", and search New Orleans, LA.

Commercial Energy Efficiency

Commercial energy efficiency can reduce utility bill costs for both large and small businesses as well as contributes to emissions reductions goals. In New Orleans, commercial businesses account for about 20% of the City's greenhouse gas emissions.

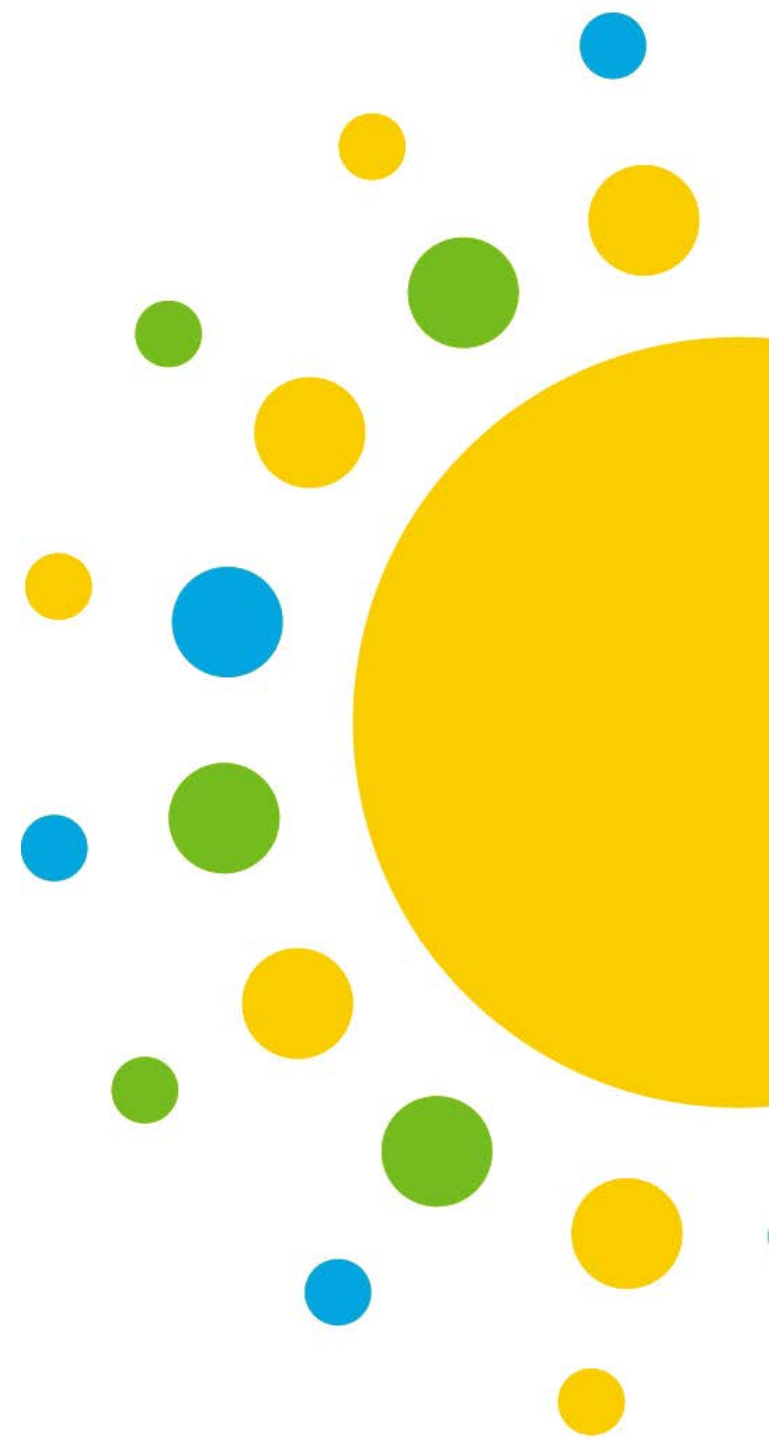
In order to reduce energy use in commercial buildings, the City of New Orleans joined the White House Council on Environmental Quality's National Building Performance Standard (BPS) Coalition. The Coalition will help municipalities create and implement energy efficiency standards for large buildings, driving investment in building improvements and quality jobs that reduce housing and energy costs.

IRA: [Deduction for energy-efficient commercial buildings beginning after 2022](#). Buildings that reduce their annual energy and power costs by more than 25% can qualify for tax deductions.

Resources for Funding Opportunities

- See all clean energy infrastructure program and funding announcements from the U.S. Department of Energy [here](#).
- Curated list of funding opportunities for Communities LEAP by NREL can be found [here](#).

Workforce Development Opportunities



Workforce Development

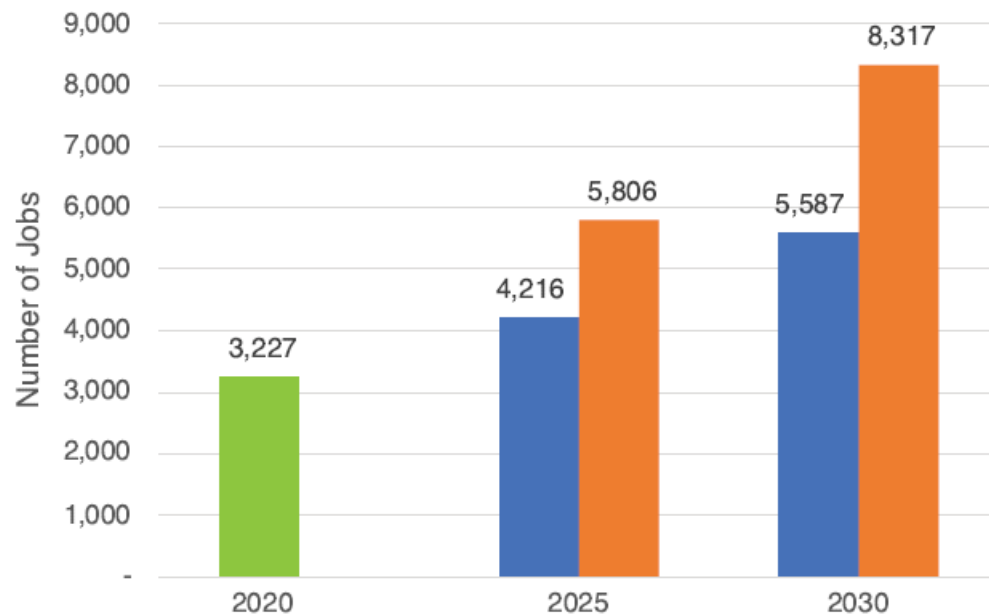
- As New Orleans works to transition to clean energy and reduce energy burden for residents, workforce development will be critical not only to ensure sufficient workers but also as a way to benefit residents of environmental justice communities who are most impacted by energy cost and climate change.
- Developing robust pipelines for the training of workers can provide good-paying jobs and an opportunity for residents to be part of the clean energy transition.
- The following slides show job potential for several clean energy career tracks.

Louisiana's Clean Energy Jobs Potential

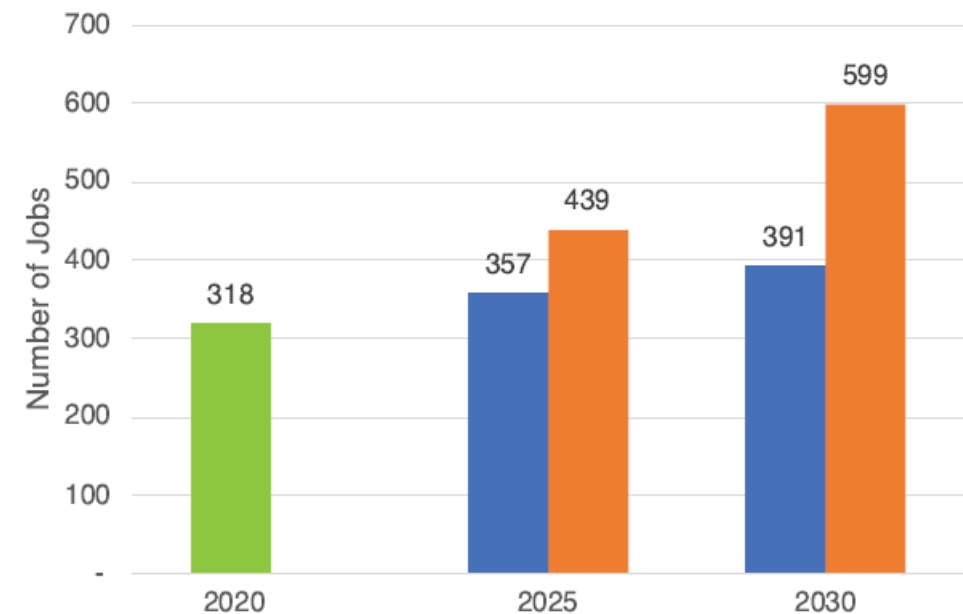
Projected number of total jobs in each industry over 10 years.

Legend ■ Jobs (reported) ■ Jobs (modeled with IMPLAN) ■ Jobs (low, modeled; see methodology) ■ Jobs (high, modeled; see methodology)

Solar Energy Job Estimates 2020–2030 (photovoltaics)







Wind Energy Job Estimates 2020–2030 (land-based)

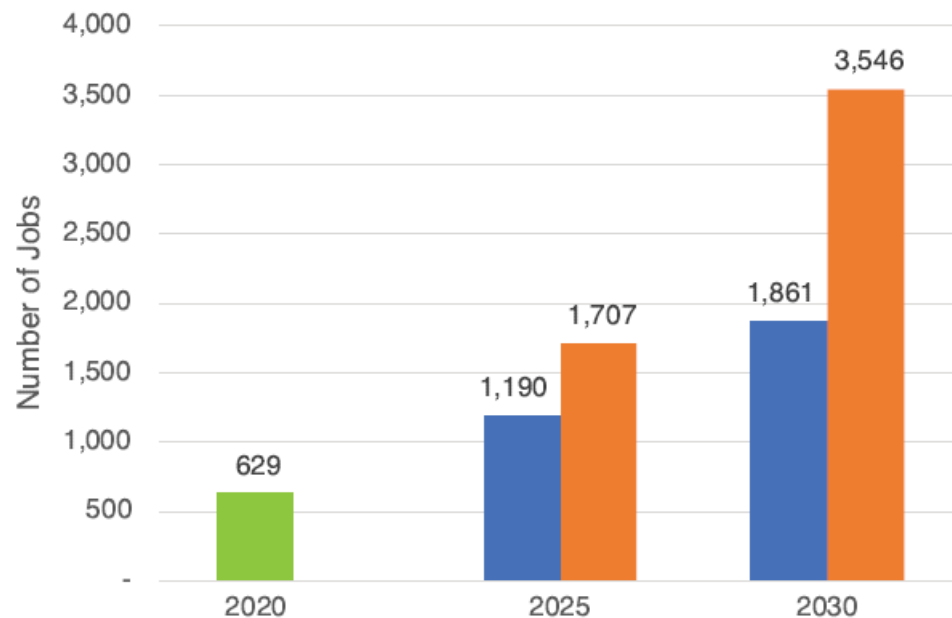


Louisiana's Clean Energy Jobs Potential

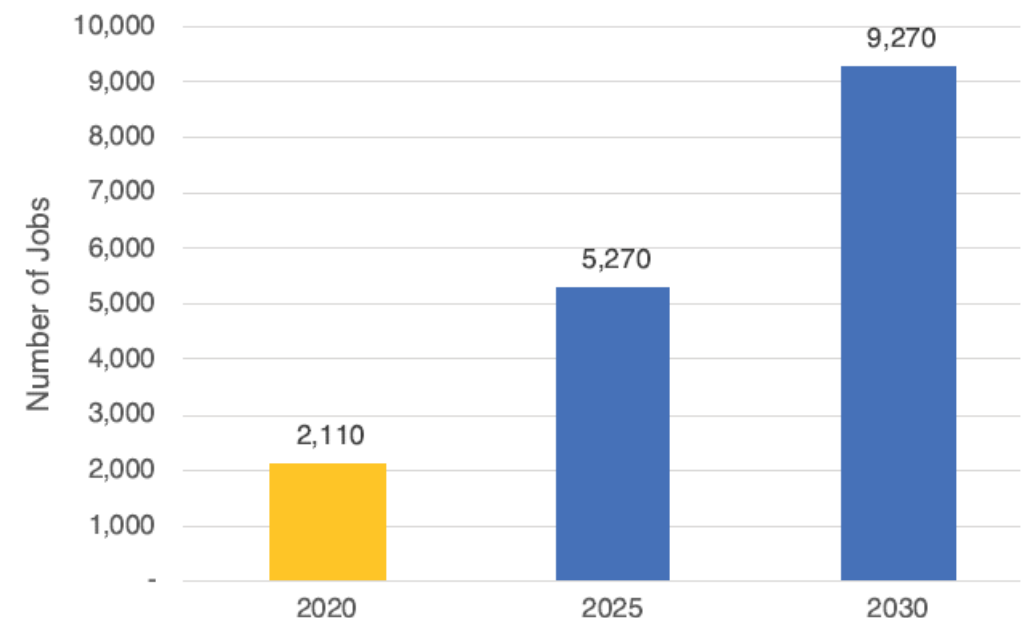
Projected number of total jobs in each industry over 10 years.

Legend  *Jobs (reported)*  *Jobs (modeled with IMPLAN)*  *Jobs (low, modeled; see methodology)*  *Jobs (high, modeled; see methodology)*

Battery Storage Job Estimates 2020–2030 *(stationary, grid-connected)*



Energy Efficiency Job Estimates 2020–2030 *(utility cost-effective measures in buildings)*

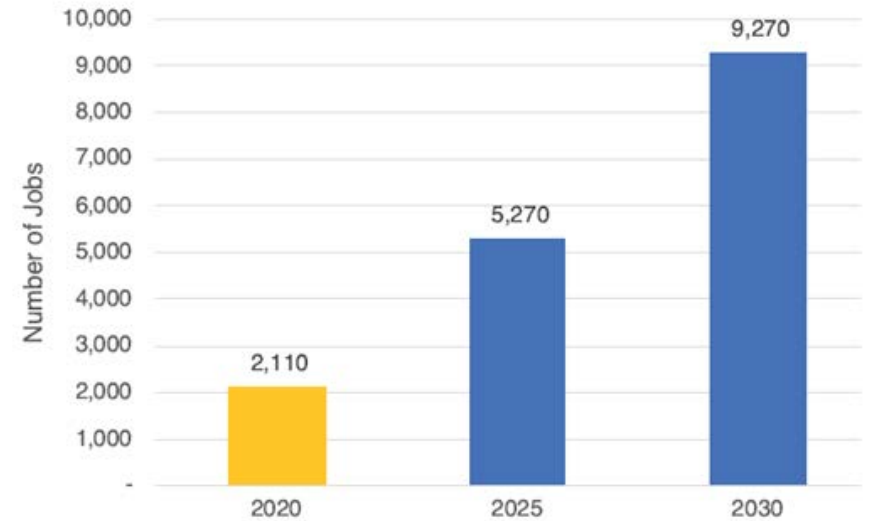


Workforce Development Opportunities

The clean energy job industry that is projected to require the most new workers in Louisiana by 2030 is energy efficiency (9,270). This includes a wide range of job types including heating, ventilation, and air conditioning (HVAC); electricians; and insulation contractors.

Due to New Orleans older housing stock, energy efficiency upgrades could provide a significant reduction in energy use for many residents, decreasing energy burden for low-income households. The number of residential electrical and HVAC contractors in Orleans Parish declined from 2018 to 2022, according to Bureau of Labor Statistics data.

Energy Efficiency Job Estimates 2020–2030 *(utility cost-effective measures in buildings)*



State-Level Employment Projections for Four Clean Energy Technologies in 2025 and 2030—NREL 2022



Energy Efficiency Jobs are Underrepresented in New Orleans

Data from the Bureau of Labor Statistics can be used to identify potential gaps in employment based on national trends. The Annual Average Employment Location Quotient compares the share of the workforce a job type represents locally to the share it represents nationally. A location quotient of 1 means that a job type has a similar share of the workforce locally as nationally. A quotient over 1 means that that job type is a larger share of the workforce locally compared to nationally. This measure does not evaluate if the share represented is sufficient to meet workforce demands, but only compares the local share to the national share.

The table shows the location quotient for job types related to energy efficiency in New Orleans. All listed job types are well below 1 and indicate that these jobs are a smaller share of the workforce than similar jobs nationally.

For comparison, the location quotient for professional services such as engineering and architecture is over 1 and increased slightly between 2018 and 2022.

| Job Type | Location Quotient | |
|--|-------------------|------|
| | 2018 | 2022 |
| Residential remodelers [?] | 0.45 | 0.46 |
| Residential roofing contractors [?] | 0.16 | 0.22 |
| Residential electrical contractors [?] | 0.29 | 0.17 |
| Residential plumbing and HVAC contractors [?] | 0.18 | 0.14 |
| Electrical and wiring contractors [?] | 0.45 | 0.37 |
| Plumbing and HVAC contractors [?] | 0.16 | 0.31 |
| Drywall and insulation contractors | 0.63 | 0.56 |
| Building inspection services | 0.68 | 0.75 |
| | | |
| Engineering services [?] | 1.09 | 1.14 |
| Architectural, engineering, and related services | 1.10 | 1.11 |
| Architectural services [?] | 2.07 | 2.22 |

Location quotients for selected jobs in 2018 vs. 2022.

Source: Bureau of Labor Statistics, Community Workforce Baseline Analysis

Green Buildings Career Map

The [Green Buildings Career Map](#) is a highly interactive tool that explores an industry with increasing job opportunities across four major sectors of the green buildings and energy efficiency industry, charting possible progression between those occupations, and identifying the sorts of credentials necessary to do them well.

This example shows the required and preferred education, training, skills, and requirements for Certified Home Energy Rater.

CERTIFIED HOME ENERGY RATER/ASSESSOR/HOME INSPECTOR

Alternate Title: Building Energy Consultant, Building Performance Consultant, Building Performance Specialist, Energy Auditor, Energy Consultant, Home Performance Consultant, Residential Energy Auditor

SECTOR

Architecture, Engineering & Other Professional Services

SALARY RANGE

\$33,000-\$48,000; \$16-\$23/hr

REQUIRED EDUCATION & TRAINING

Entry-level trainees typically have a high-school degree and basic construction skills; firms offer on-the-job training.

PREFERRED EDUCATION & TRAINING

Associate's Degree; vocational or technical school degree

Recognized Certifications:

RESNET, HERS Rater, BPI Building Analyst Technician (BA-T), BPI Building Analyst Professional (BA-P), BPI Energy Auditor

WORK EXPERIENCE

1-3 years

SKILLS & REQUIREMENTS

Ability to work independently

Proficient with computers phones, and other office equipment

Outstanding customer service skills

Outstanding verbal and written communication skills

Ability to communicate technical knowledge to a non-technical audience

Demonstrate an attention to detail

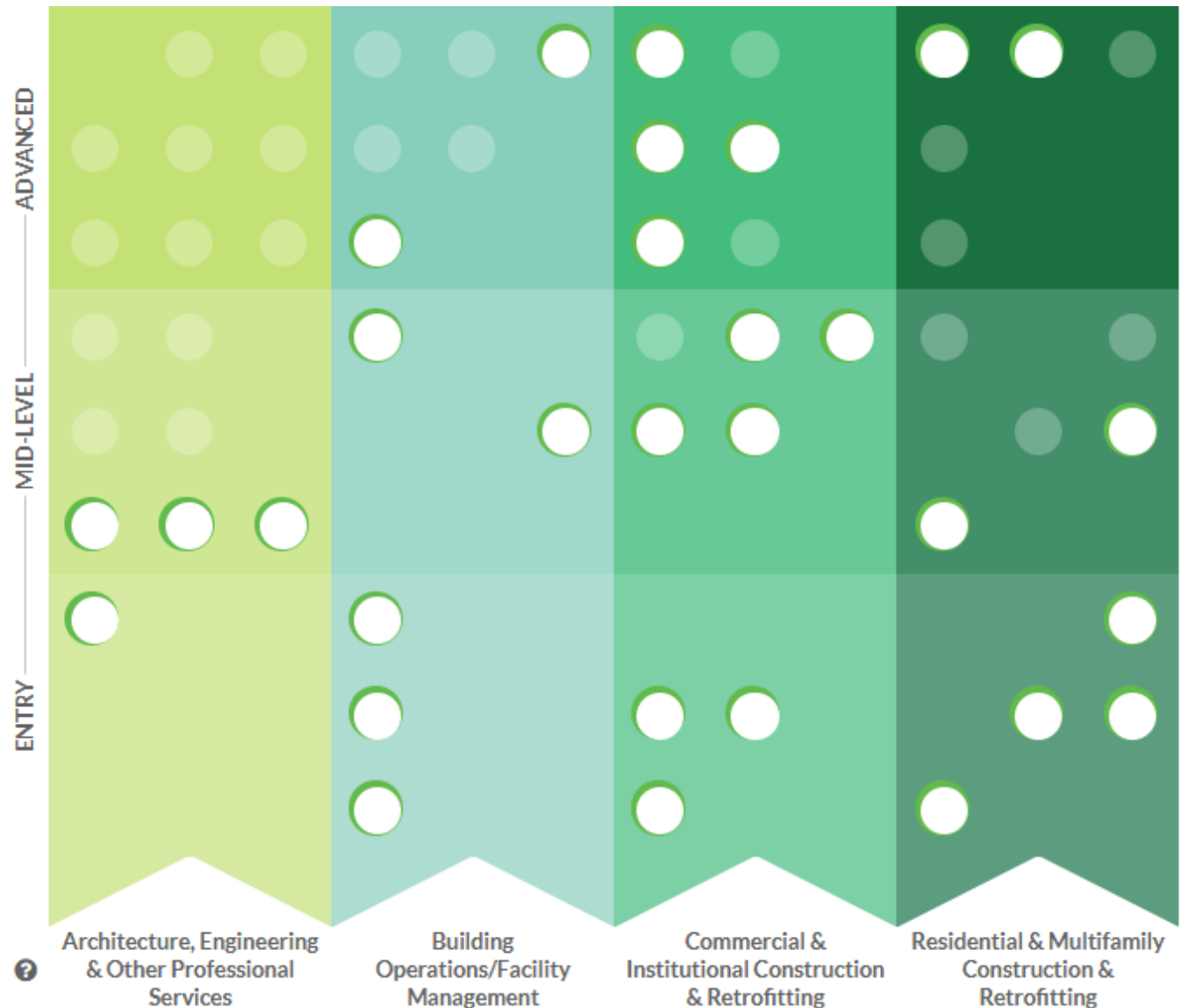
Ability to work safely with hand and power tools

Ability to work at heights and on ladders

Ability to work in confined spaces, attics, & basements

Green Buildings Career Map

This tool shows jobs across sectors, from entry-level to advanced, that do not require 4-year degrees such as a Home Performance Contractor in the Residential & Multifamily Construction & Remodeling.

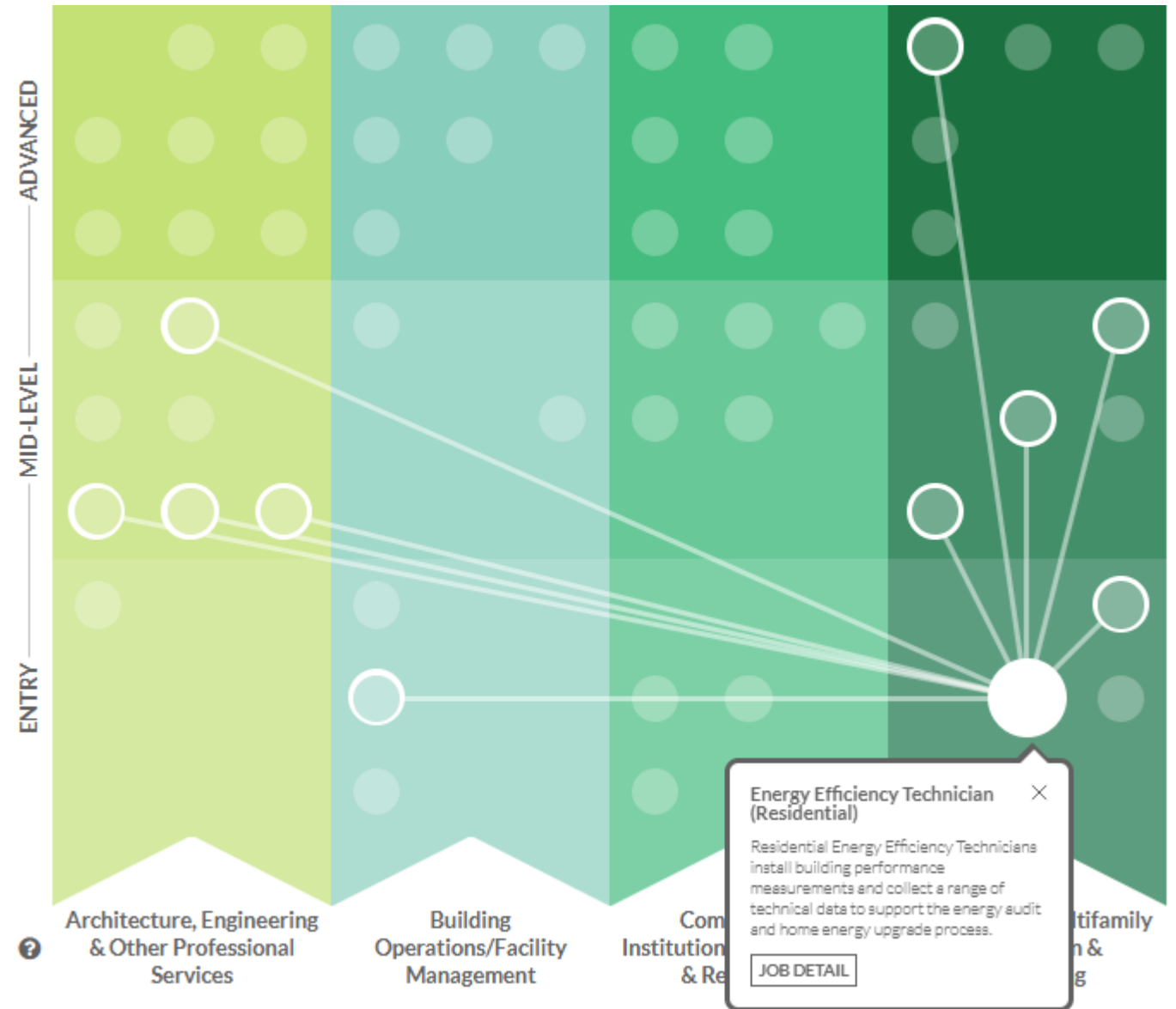


Source: U.S. Department of Energy and Interstate Renewable Energy Council
[Green Buildings Career Map](#)

Green Buildings Career Map

The tool also shows possible advancement routes for careers in each sector. For example, a worker who starts as entry-level Energy Efficiency Technician is well placed to advance within their occupation type or seek the skills and credentials to advance between occupation types.

Source: U.S. Department of Energy and Interstate Renewable Energy Council
[Green Buildings Career Map](#)



Training Resources

The DOE Office of Energy Efficiency & Renewable Energy through their [Building Science Education program](#) provides industry standards for training in various technology areas including Codes & Standards, Heat Pump Water Heater, HVAC, Indoor Air Quality, Plumbing, Quality Management, and Whole-Building Performance.

Current Workforce Development

University of Louisiana at Lafayette (Lafayette, LA): This project will create the [Louisiana Solar Corps](#), a statewide solar workforce training and apprenticeship program that will establish eight new degree programs at five community colleges and four universities, including Historically Black Colleges and Universities. (Award: \$1 million by U.S. Department of Energy)



Photo by Joe DelNero, NREL

Current Workforce Development in New Orleans

Louisiana Green Corps provides environmental education and career building opportunities for people aspiring to improve their lives and our community



Louisiana Green Corps provides on-the-job training for students pursuing careers in the green construction, water, and infrastructure industries.

Green Corps' students receive paid on-the-job training and earn nationally recognized industry-related credentials including:

- OSHA-10
- National Center for Construction Education & Research (NCCER)
- Forklift Certification
- Transportation Worker Identification Credential (TWIC)
- Clean Water Certification (CWC)

Complementary Community Efforts

- [Get Lit/Stay Lit](#) (New Orleans)
 - Solar + batteries, making each restaurant a facility micro-grid.
 - Partner in workforce development.
 - *Winner of DOE Energy Innovation Prize.*
- [Footprint Project](#) (New Orleans)
 - Deploy solar generators.
 - Workshops on how to build solar generators.
- [Together New Orleans](#)
 - Community Lighthouse Project
 - Building the nation's largest network of solar + storage resilience hubs at churches and community centers across south Louisiana.
- Center for Sustainable Engagement and Development (CSED) aka [Sustain the Nine](#) (New Orleans)
 - Created disaster hubs with resources in neighborhoods.
 - Support community voice in decision-making.
- [Thrive New Orleans](#)
 - Workforce Development in Green Infrastructure



GREEN INFRASTRUCTURE

We provide comprehensive stormwater management installation training so that locals can join the rising climate change mitigation industry as it grows.

Workforce Training Recognition

Consider [DOE recognition](#) for existing training programs.



Workforce Training Recognition

To support the development of a robust building systems workforce, the Department of Energy recognizes training and certification programs that are aligned with DOE goals. These DOE-recognized programs cover key occupations and knowledge areas relevant to DOE's mission. Organizations that provide training and/or credentials related to these job types can **Submit for Recognition**.

Recognition from DOE allows certification programs to align with DOE's clean energy transition work and distinguish themselves as leaders who are preparing workers for meaningful and in-demand job opportunities. Recognition also allows certification programs to be approved as eligible within applications for **Training for Residential Energy Contractors** (TREC), through the Inflation Reduction Act.

Images from U.S. Department of Energy

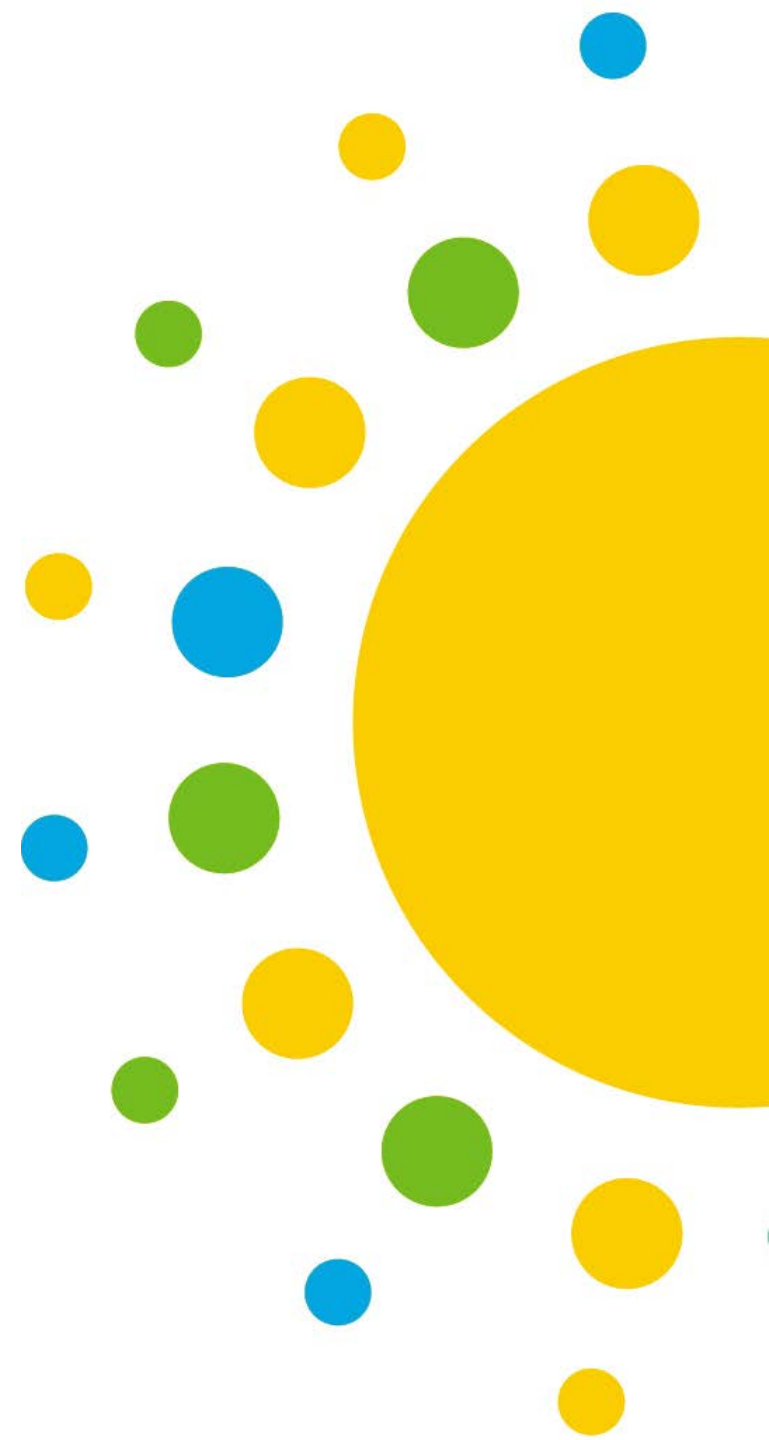
Community Toolkit for Designing and Implementing a Contractor Accelerator Program

This [toolkit](#) is designed to provide communities with an overview of the methodology and approach to designing, developing, and implementing *contractor development programs*. These programs support small businesses from historically under-represented communities so that they can better compete and become leaders in the clean energy marketplace. The toolkit was developed by Elevate and NREL for the Communities LEAP program.



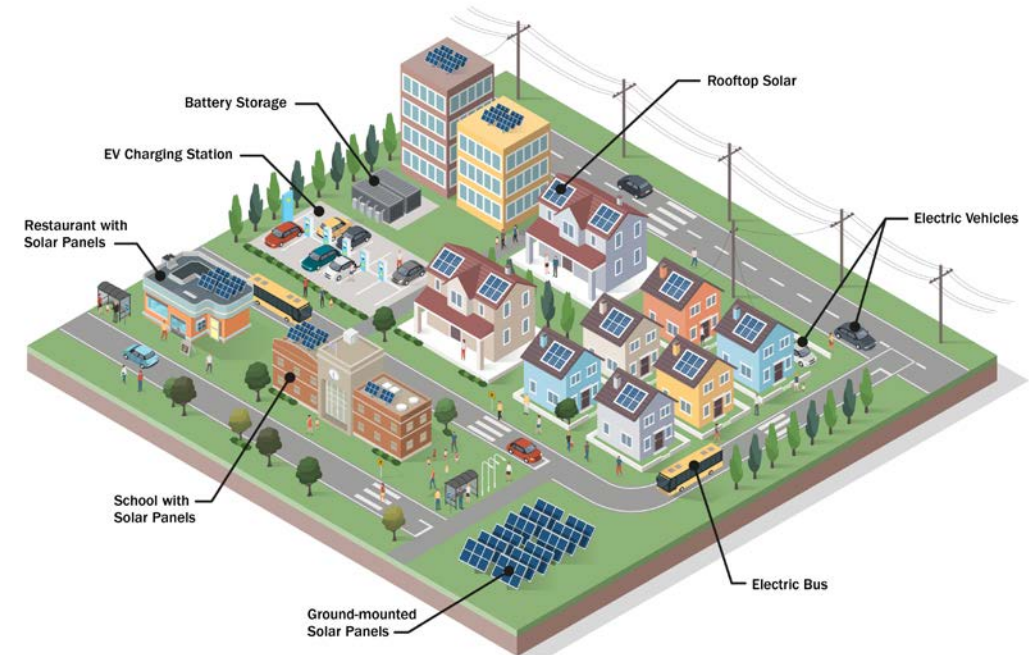
Photos by Werner Slocum, NREL

Possible Actions



Possible Actions: Microgrids

- Address ENO barriers to microgrid policy (*in process*).
- Implement pilot microgrid beginning with a city-owned facility (*in process at Sanchez Center*).
- Re-evaluate cost/benefit of solar economic feasibility studies (city buildings/properties) including new provisions in the Inflation Reduction Act of 2022.
- At the conclusion of Communities LEAP technical assistance, New Orleans was on a path to secure funding for 15 microgrids at community facilities across the city, including through a state [GRIP award](#) to fund resilience hubs in critical city facilities and a [BRIC grant](#) to install solar/battery at the Sanchez Multi-Service Center in the Lower Ninth Ward.



Possible Actions: Community Efforts

- Establish community solar program.
 - Explore neighborhood solar gardens on vacant lots.
 - Work with nonprofits, houses of faith, and others who now qualify for a direct-pay rebate of 30% or more to develop community solar programs that benefit low-income residents.
- Continue and expand Solar For All program.
- Increase community awareness of the City's resilience and sustainability efforts through active engagement.



Possible Actions: Government Energy Efficiency

- Update energy audits of government-owned facilities.
- Prioritize and implement most cost-effective measures.
- Consider reinvesting energy savings into an account that can fund future investments.
- Consider a [Performance Savings Contract](#)—requires no upfront cost and is paid for with realized savings.



Possible Actions: Residential Energy Efficiency

- Consider an in-depth analysis of New Orleans housing stock to determine most impactful energy efficiency measures by housing type (for example [ResStock](#), an NREL tool. Also see slides on [SLOPE](#), which provides state-level data.)
- Provide residents with information on all [tax incentives](#) and [rebates](#) available for residential energy efficiency.
- Consider a group purchasing program for energy efficiency measures similar to [Solarize](#).
- Support expansion of FNO ([Finance New Orleans](#)) green bank services to provide low-interest financing for energy efficiency and DERs.
- Locate funding sources for direct-pay for installation of energy efficiency measures for low-income residents (e.g., [Community Development Block Grant/CDBG](#)).



Possible Actions: Commercial Energy Efficiency

- Provide businesses with information on all [tax incentives](#) and [rebates](#) available for energy efficiency and clean energy.
- Explore energy benchmarking and Building Performance Standards for commercial buildings particularly multifamily dwellings.



Possible Actions: Workforce Development

- Map and coordinate workforce development opportunities for residents.
- Explore hosting a workforce development summit to bring all providers together.
- Consider an in-depth market analysis to understand the diversity of contractors, their needs, existing barriers, and current support.
- See [Community Toolkit for Designing and Implementing a Contractor Accelerator Program](#) for more information.

Grants

- National Oceanic and Atmospheric Administration's (NOAA) [Climate-Ready Workforce](#)
 - Seek to establish programs aimed at placing people across the country into good jobs that advance climate resilience and assist employers in developing a 21st-century workforce.
 - Current deadline 2/13/2024
- Economic Development Administration's (EDA) [Public Works and Economic Adjustment Assistance Programs](#)
 - Supports strategies that advance general economic development that incorporate equity, workforce development, and climate change resiliency.
 - Rolling application



Thank You

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