STATE OF LOUISIANA
GOVERNOR JOHN BEL EDWARDS

LOUISIANA CLIMATE ACTION PLAN

ANNUAL REPORT

FEBRUARY

LETTER FROM THE GOVERNOR

Dear Climate Initiatives Task Force Members,

I am proud to receive the 2023 Annual Report of the Climate Initiatives Task Force. This report overviews the implementation status of the Climate Action Plan, which contains a high level set of strategies and actions that, if implemented aggressively and swiftly, will put Louisiana on a path to net zero by 2050.

In the year since its unanimous approval by the Climate Initiatives Task Force, the Climate Action Plan has served as the state's North Star for climate action. The actions, strategies, and fundamental objectives in the Climate Action Plan have steered the efforts of my administration, the private sector, academia, NGOs, and individuals in Louisiana. While it is important to recognize, celebrate, and build on our successes from 2022, we still have a long and challenging journey ahead to reach the goals I set forth in Executive Order JBE 2020-18.

The strength of the Climate Action Plan comes from the many people and organizations who contributed to its creation and remain committed to its implementation. If we are going to achieve climate action at scale, the ongoing engagement, coordination, and collaboration of many diverse stakeholders and organizations must continue to grow over the years and decades.

Just as now is the time to strengthen and grow support for climate action, we are also in a critical moment to secure significant federal funding for climate action in Louisiana. The Climate Action Plan has guided the state's pursuit and use of federal funds, including the generational funding opportunities in the Bipartisan Infrastructure Law and the Inflation Reduction Act. These funds will propel Louisiana closer to its near and mid-term decarbonization goals, and by having a climate plan rooted in equity and the clean energy workforce, Louisiana is more competitive for these funds. The value of a clear, unifying plan simply cannot be overstated.

As we embark on the last year of my administration, we are committed to maximizing every opportunity available to advance the Climate Action Plan and catalyze climate action in the years and decades to come through partnerships, policy, programs, and funding. To this end, we will remain dedicated to the public and stakeholder outreach and engagement that underpins this Task Force, the Climate Action Plan, and its implementation. It is only by working together that we will give ourselves the best opportunity to avoid the worst impacts of climate change and realize a brighter, cleaner, and more sustainable future for Louisiana.

Sincerely,

Louisiana Governor John Bel Edwards

Photo by Warren Photography for CPEX

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INTRODUCTION: COMMITMENT TO ACTION

Louisiana's Climate Action Plan is the first statewide plan of its kind in the Gulf South and serves as a major first step in Louisiana's effort to proactively mitigate the root causes of climate change.[1] By providing an actionable path to reduce greenhouse gas (GHG) emissions to net zero by 2050, the Climate Action Plan complements ongoing adaptation efforts, such as the Louisiana Coastal Master Plan, the Louisiana Watershed Initiative, and the Adaptive Governance Initiative. Collectively, these efforts provide a comprehensive, statewide approach to climate action.

Since the adoption of the Climate Action Plan on February 1, 2022, **Louisiana has taken swift and significant steps forward in the plan's first year of implementation**, even as the national landscape for climate action continues to evolve. This first Annual Report highlights key progress on climate action at the local, regional, state, and federal levels. As Louisiana continues to commit to climate action, the many benefits of reducing net GHG emissions become clearer.

First, **the economic case for Louisiana's energy transition is stronger than ever**. Utility of renewable energy is cost competitive, and federal support for emerging technologies will increase the likelihood of newer technologies becoming cost competitive as well. Job opportunities in renewable energy generation and storage, industrial clean hydrogen, and the retrofitting of manufacturing facilities throughout the state are immense. The growth of new energy industries and increased demand for domestic energy production also buffer against the employment fluctuations in the fossil energy industry and provide new opportunities for manufacturing in Louisiana.

Second, **climate investments can provide multiple co-benefits for health, quality of life, equity, the natural environment, and adaptation if thoughtfully and strategically implemented.** These benefits compound across Louisiana landscapes, from the state's urban centers and rural communities to its natural lands. For example, energy efficient homes and buildings are more resilient to the negative impacts of severe weather events (e.g., hurricanes) while reducing energy burdens in all communities, especially those that are disadvantaged. Electrification projects that harness renewable energy can reduce pollution broadly as well as reduce GHG emissions, generate new markets, and support new jobs and businesses. Further, coastal wetland restoration projects mitigate coastal land loss while protecting vulnerable communities, preserving cultural heritage, providing and improving wildlife habitat, and enhancing nature-based carbon sequestration potential.

Finally, **climate action helps ensure a resilient future for Louisiana**: one with a diversified economy enhanced by more education, training, and job opportunities for Louisianans; stronger and modernized power infrastructure; more energy-efficient homes and buildings; transportation systems with fewer emissions and more choices; and natural and working lands that sequester carbon while upholding Louisiana's unique culture and heritage.

Implementation of Louisiana's Climate Action Plan will not succeed without coordinated action by partners across all sectors and levels of government. This Annual Report highlights the important partners who are leading the way on climate action through their work, investment of their time and capital, and support in educational and grassroots efforts. This report highlights the extensive efforts underway to implement the Climate Action Plan and summarizes efforts both completed and underway between February and December of 2022. Climate action in Louisiana continues to advance at a rapid pace, and this report may contain outdated information.

LOUISIANA'S PATH TO NET ZERO

In Louisiana, the industrial sector contributes to 66% of overall state emissions; this is a much higher proportion than at the nationwide scale, where the industrial sector contributes 17% of emissions (Figure 1). Louisiana's industrial sector emissions are primarily derived from chemicals production and petroleum refining. The state's unique emissions profile means that the state's path to net zero must break new ground for state climate action.

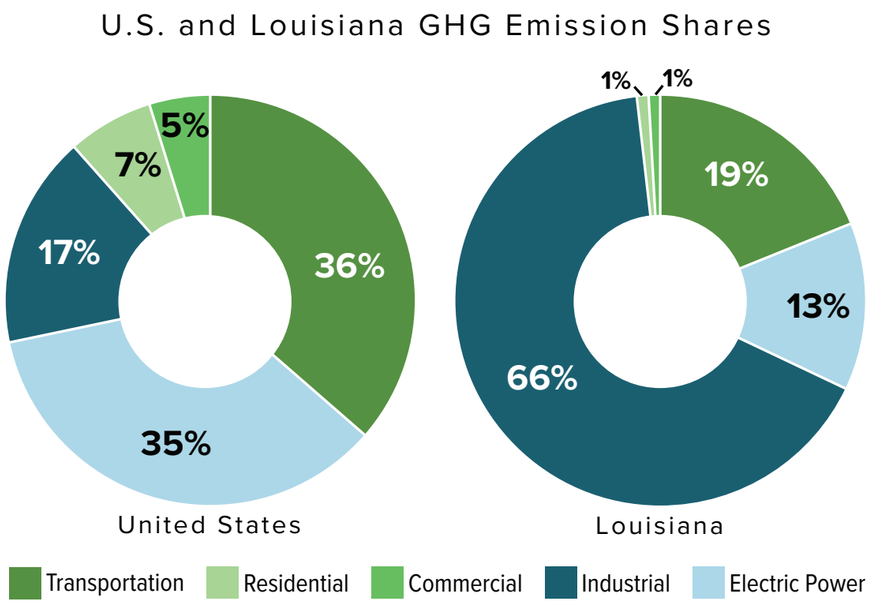


FIGURE 1. SUMMARY OF U.S. AND LOUISIANA GHG EMISSION SHARES. FIGURE REPRODUCED FROM FIGURE 4 OF THE LOUISIANA CLIMATE ACTION PLAN, ORIGINALLY BASED ON FIGURE 4 OF THE LOUISIANA 2021 GHG INVENTORY REPORT.[2]

The Climate Action Plan lays out three policy pillars for Louisiana to reach net zero GHG emissions by 2050: **Renewable Electricity Generation, Industrial Electrification, and Industrial Fuel Switching to Low- and No-Carbon Hydrogen** (Figure 2 and 3). Without these three pillars, Louisiana cannot significantly reduce its GHG emissions. Where possible, shifting industrial processes to electricity and hydrogen (particularly where high heat is needed) is critical. However, that shift must be powered by renewable energy to ensure emissions reductions, not simply a swap in an emissions pathway. **Synergized implementation of the three pillars is crucial for success.**

Though significant, heavy industry is not the only sector of emissions in Louisiana. The state must also reduce emissions from electricity production, oil and gas infrastructure, agriculture, buildings, and transportation.

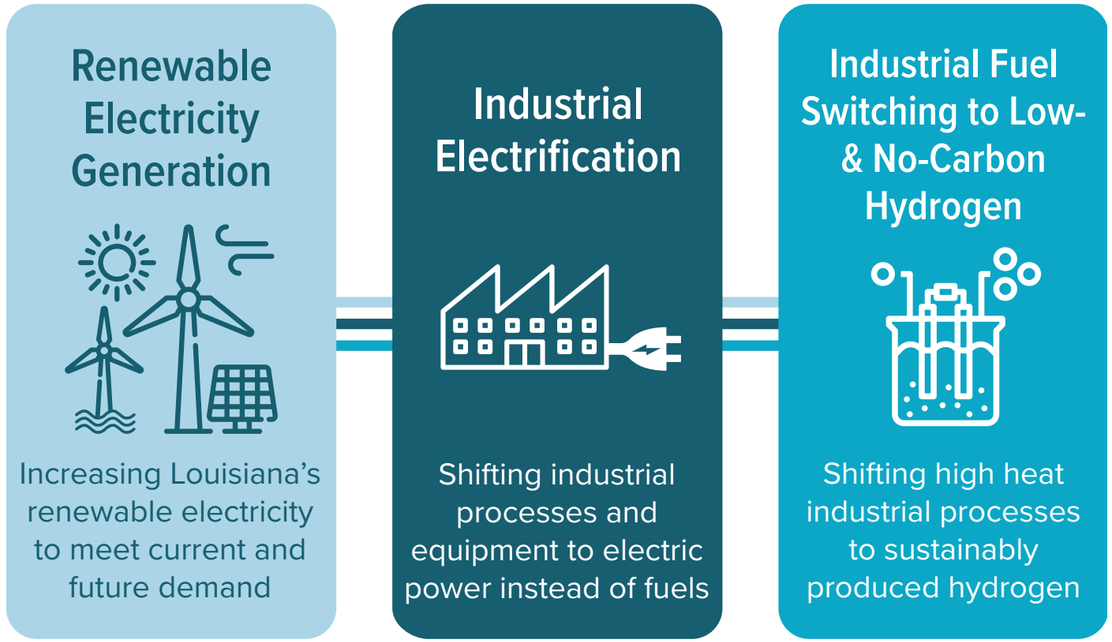


FIGURE 2. LOUISIANA'S THREE CLIMATE POLICY PILLARS THAT MUST BE IMPLEMENTED TOGETHER TO REACH NET ZERO. FIGURE REPRODUCED FROM FIGURE 17 OF THE LOUISIANA CLIMATE ACTION PLAN.

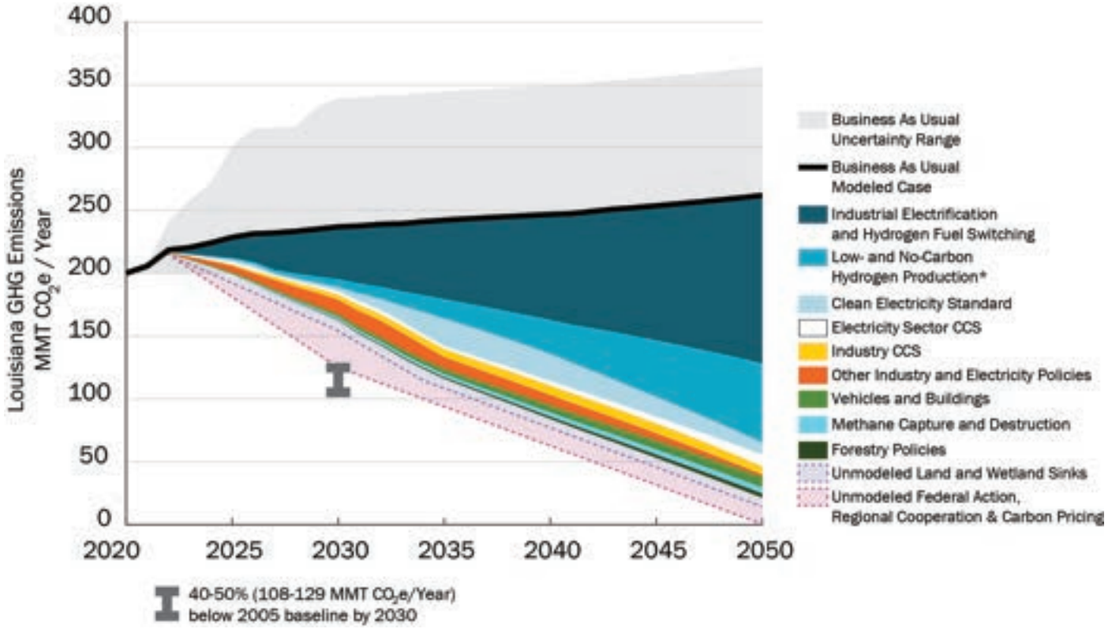


Figure 3. GHG emissions for Louisiana, 2020-2050. Modelled GHG emissions reductions are based on the strategies and actions outlined in the Climate Action Plan. Figure reproduced from Figure 16 of the Louisiana Climate Action Plan.

ACHIEVING OUR FUNDAMENTAL OBJECTIVES: First Year of Implementation

Aligning with the Governor's Executive Order, the state recognizes that it must reduce net GHG emissions to zero by 2050 to limit the impacts of climate change that harm the state's natural and cultural heritage. While reducing GHG emissions is the primary objective, how Louisiana achieves these emissions reductions is equally important. The climate actions advanced during the first year of implementation provide an opportunity to realize additional benefits for Louisiana's communities, environment, and economy.

The Climate Action Plan identifies clear objectives across the seven key themes that serve as a fundamental basis for developing, evaluating, and refining climate action strategies and guiding implementation. Since there is no single path to net zero, **the energy transition must intentionally prioritize Louisiana workers, businesses, communities, and environment to ensure climate action improves health and quality of life, strengthens the economy and workforce, adapts to a changing climate, conserves natural resources, creates greater equity, and manages for short- and long-term success as the state reduces net GHG emissions** (Figure 4).

The strategies and actions in the Climate Action Plan, and the work to implement them for the past twelve months, are meant to advance multiple objectives. While not every objective can be implemented or evaluated on the same schedule, these objectives have been and will continue to be prioritized in the design and development of policies and programs.

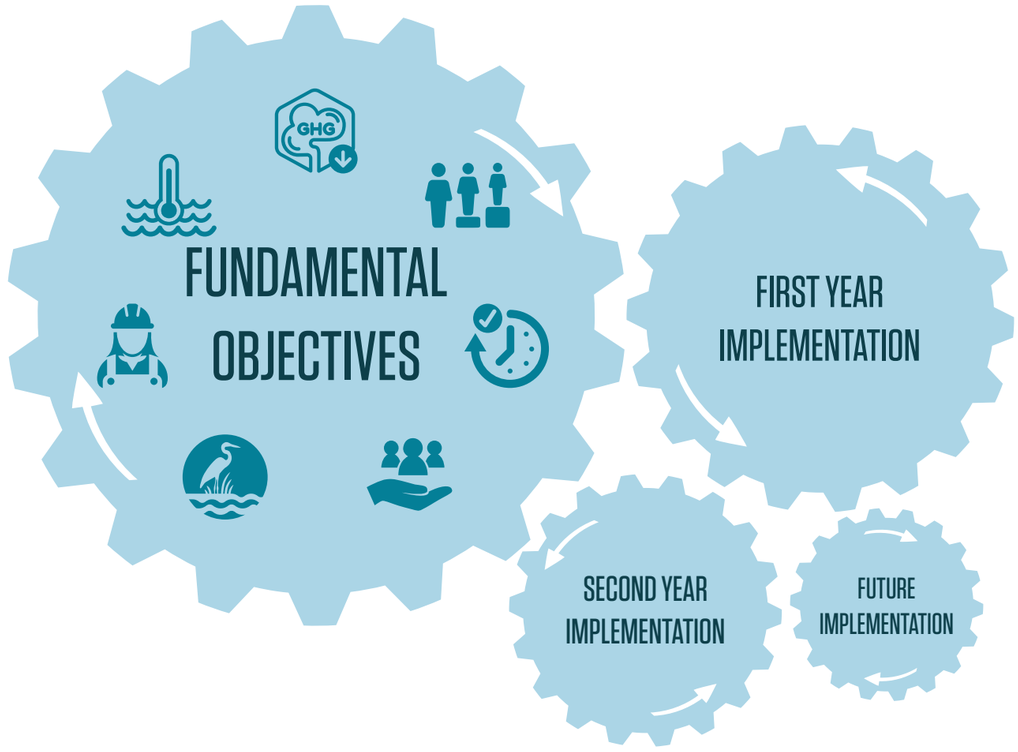


FIGURE 4. SCHEMATIC ILLUSTRATING THE LINKAGES BETWEEN CLIMATE ACTION IMPLEMENTATION AND FUNDAMENTAL OBJECTIVES.

EXAMPLES OF HOW IMPLEMENTATION IS ADVANCING FUNDAMENTAL OBJECTIVES

REDUCE NET GHG EMISSIONS

As the overall fundamental objective for the plan, direct or indirect reduction of GHG emissions is a component of most actions. Specifically, installation of utility and residential scale solar helps to lower the emissions of Louisiana's electricity generation, and low-carbon industrial production lowers Louisiana's industrial emissions. See sections for ***Clean Energy Transition*** and ***Industrial Decarbonization***.

CREATE A MORE EQUITABLE SOCIETY

Ongoing effort to create equity metrics by the Governor's office will help state and local partners ensure that equity is prioritized throughout climate action implementation. See ***Accountability and Adaptability to Ensure Lasting Success***.

MANAGE FOR SHORT- AND LONG-TERM SUCCESS

Louisiana's partnership efforts to secure long-term funding for climate plan implementation show that this work must proceed on multiple time scales. See ***Collaboration and Partnership to Ensure Successful Implementation***. Additionally, Louisiana's work on electric vehicle charging improves opportunities today and lays the groundwork for future widespread switching to electric vehicles. See ***Transportation, Development, and the Built Environment***.

IMPROVE HEALTH AND QUALITY OF LIFE

When orphaned wells leak methane, nearby communities can experience impacts to their health. Louisiana's efforts to plug orphaned wells and reduce methane leaks will improve community health and quality of life. See ***Actively Managed Methane Emissions***.

CONSERVE NATURAL RESOURCES AND PROTECT THE ENVIRONMENT

The new Louisiana Outdoors Forever conservation program will directly increase the state's conservation holdings, furthering this objective. See ***Natural and Working Lands and Wetlands***.

STRENGTHEN THE ECONOMY AND WORKFORCE

The H2theFuture project's emphasis on education and training for the hydrogen workers of the future helps to further this fundamental objective. See ***An Inclusive, Low-Carbon Economy***.

ADAPT TO A CHANGING CLIMATE

Adaptation projects like resilient microgrids will help Louisianans cope with future storms and extreme weather events. See ***Clean Energy Transition***.

POSITIONING LOUISIANA FOR FEDERAL FUNDING

Recent federal legislation provides an unprecedented investment in nationwide climate action and offers a variety of mechanisms to fund new decarbonization technology development, wide-scale deployment of renewable materials and energy, and economic opportunity for disadvantaged communities and less-resourced applicants. **Two pieces of legislation are critical pieces of the federal investment: (1) the Infrastructure Investment and Jobs Act (IIJA), and (2) the Inflation Reduction Act (IRA)**; together, this legislation provides hundreds of billions of dollars in competitive grant opportunities, tax credits, project loans, and formula funds (dollars distributed to recipients based on formulas set by Congress) with a generational opportunity to invest in the strategies and actions of Louisiana's Climate Action Plan. Enacted in November 2021, the IIJA invests in traditional transportation infrastructure projects, such as roads and bridges, alongside more innovative infrastructure needed in the energy transition, such as power reliability and energy resilience, holistic community transportation planning, mitigation of oil and gas legacy pollution, and electric vehicle (EV) charging infrastructure. Enacted in August 2022, the IRA offers wide range of tax incentives to support community access to energy efficiency measures, EVs, and distributed solar, while also to support large-scale production and investment in clean hydrogen, zero-emission nuclear, and utility-scale renewable energy and materials. IRA and IIJA investment opportunities provide a generational opportunity to implement the strategies and actions of the Climate Action Plan.

Further, the seven fundamental objectives of the Climate Action Plan align with the Biden Administration's implementation objectives for reducing GHG emissions, creating high-quality jobs, and investing in disadvantaged communities to create greater equity. Importantly, most provisions in both the IIJA and IRA are covered by the Biden Administration's Justice40 initiative, which states that 40% of benefits of federal investments from covered programs must benefit disadvantaged communities who are "marginalized, underserved, and overburdened by pollution," as defined by the White House. In the one year since IIJA was enacted into law, $4 billion in funding has been announced for over 120 projects across Louisiana, from infrastructure upgrades like bridge repairs to climate-related projects like EV charging infrastructure and component manufacturing.[3]

This infusion of capital has the potential to be followed by even more funding. Select upcoming opportunities available within the IIJA are summarized in Figure 5.

Governor Edwards speaks at a January 2023 workshop of state and federal leaders focused on implementation of IRA funding. Photo by Warren Photography for CPEX

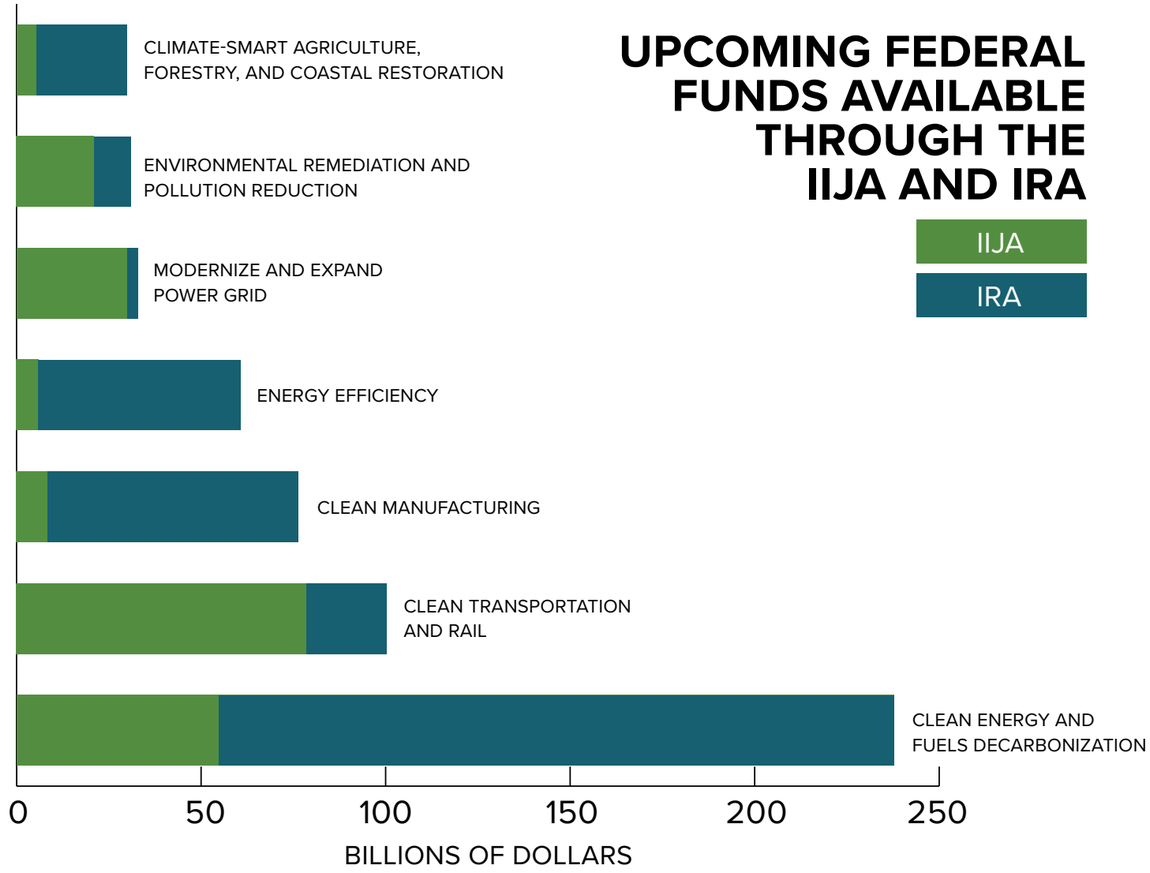


FIGURE 5. SUMMARY OF SELECT UPCOMING FEDERAL FUNDS AVAILABLE THROUGH THE IIJA AND IRA.

The IRA builds on these investments by making a historic federal investment in widescale deployment of technologies that will mitigate GHG emissions. Over $177 billion in clean energy, $39 billion in clean fuels and vehicles, $43 billion in manufacturing, and more are complemented by over $60 billion in community investments, including environmental justice block grants, equity grants for reconnecting communities, and investments in monitoring and reduction of air pollution. The IRA also includes over $30.6 billion in investments in climate-smart agriculture, rural energy, coastal habitats, and forests.

To make the most of these opportunities, **Governor Edwards designated an Infrastructure Coordinator to lead interagency implementation and represent Louisiana federally on the IIJA**. The Infrastructure Coordinator has established six interagency work groups that meet monthly to discuss progress and hurdles of implementation. Additionally, the Center for Planning Excellence (CPEX) hosted a two-day workshop with Governor Edwards and his cabinet in March 2022 to debrief state leadership on the breadth of opportunities in the IIJA, its alignment with the Climate Action Plan, and the necessary steps to make Louisiana successful and competitive. Governor Edwards convened a second all-day meeting of his cabinet in January 2023 to debrief agencies on the IRA, align on strategic vision and ambition, and to set agency priorities for action in 2023. Most recently, **Governor Edwards issued Executive Order JBE-2022-19 in November 2022, tasking agencies to develop plans as to how they will increase access to these federally funded or supported projects for small businesses and businesses that are owned by women, minorities, veterans, or are disadvantaged**.[4] Additional work to capitalize on these opportunities is detailed throughout this Annual Report.

CLIMATE ACTION PLAN PROGRESS UPDATES

Louisiana's Climate Action Plan is organized into five sector-based and three crosscutting sections. Each section contains high-level strategies and actions. Mirroring the Climate Action Plan, this Annual Report is structured around the same eight sections and provides: a brief overview of the section, key highlights and successes from the past year, and a look forward at anticipated future climate action relevant to the section.

Actions in every section of the plan are in progress and preparatory work is being done to unlock future action. While there is a lot of work to be done for Louisiana to reach net zero by 2050, this report demonstrates that there is statewide commitment to address climate action and documents progress to date.

Each section contains high-level strategies (seen here) and actions.

CLEAN ENERGY TRANSITION

1. Shift towards a clean, renewable, and resilient power grid
2. Increase access to and deployment of distributed energy resources

INDUSTRIAL DECARBONIZATION

3. Monitor, inventory, certify, and support industrial decarbonization ft towards a clean, renewable, and resilient power grid
4. Improve efficiencies in and modernization of industrial processes and facilities
5. Accelerate industrial electrification, switching to low- or no-carbon fuels and low- or no-carbon feedstocks
6. Promote reduced-carbon materials

ACTIVELY MANAGED METHANE EMISSIONS

7. Increase and mobilize resources for decommissioning legacy oil and gas infrastructure
8. Monitor and regulate methane emissions

TRANSPORTATION, DEVELOPMENT, AND THE BUILT ENVIRONMENT

9. Accelerate adoption and accessibility of low- and zero-emission vehicles and fuels
10. Reduce vehicle miles traveled and increase transportation efficiencies
11. Increase urban, rural, and regional public transit service
12. Coordinate land use planning to reduce sprawl and support healthy and resilient communities
13. Improve the efficiency and resilience of homes and non-residential buildings

NATURAL AND WORKING LANDS AND WETLANDS

14. Preserve and expand natural lands and urban green spaces to maximize climate mitigation and adaptation goals
15. Restore and conserve Louisiana's coastal wetlands to maximize climate mitigation and adaptation goals
16. Support the sustainable management and conservation of working agricultural and forestry lands

AN INCLUSIVE, LOW-CARBON ECONOMY

17. Build a more inclusive and resilient economy for all Louisiana residents
18. Strengthen climate education, research, and innovation as a focus of Louisiana's energy transition
19. Prioritize Louisiana workers and businesses in the transition to a low-carbon economy

COLLABORATION AND PARTNERSHIP TO ENSURE SUCCESSFUL IMPLEMENTATION

20. Ensure Louisiana is prepared to maximize potential federal funding opportunities
21. Position Louisiana as a climate leader by engaging in national and regional dialogues and planning
22. Align climate action approaches across state government
23. Coordinate action with local governments
24. Call upon the private sector to align their practices and play a leading role in climate action
25. Improve engagement with and track progress on outcomes for disadvantaged communities and Indigenous peoples

ACCOUNTABILITY AND ADAPTABILITY TO ENSURE LASTING SUCCESS

26. Advance an equitable, efficient, and sustainable siting and permitting process for new energy and infrastructure projects
27. Ensure that Climate Action Plan strategies are effectively and transparently implemented
    Track progress in reducing net GHG emissions reductions and adapt the approaches taken as needed

CLEAN ENERGY TRANSITION

Clean energy generation is one of the pillars of Louisiana's Climate Action Plan. Without clean electricity, work to electrify buildings, vehicles, and industrial processes will remain reliant on power that produces GHG emissions. The Climate Action Plan projects a four- to seven-fold increase in electricity demand over the next three decades; therefore, it is imperative that Louisiana increase its clean energy generation capacity to support greater demand on the power grid while meeting emissions reduction goals. Utility-scale electricity generation and distributed energy availability, such as solar microgrids with battery storage, are critical strategies that Louisiana can employ to ensure an uninterrupted power supply during extended outages and hazardous weather events. Power grid expansion, modernization, and increased electricity reliability and security are key focal areas to accompany Louisiana's buildout of clean energy generation.

Block Island Wind Farm, near Rhode Island, is the first offshore wind farm in the US. The platforms were built by Louisiana companies experienced in offshore construction. Photo by Matthew Tarr / University of New Orleans

FIRST YEAR PROGRESS

LOUISIANA IS LAYING THE FOUNDATION FOR A CLEAN, RENEWABLE, AND RESILIENT POWER GRID.

Price fluctuations in the global natural gas market, increased demand from large energy users, and cost-competitive prices for solar have facilitated greater demand for utility-scale renewable electricity generation in Louisiana. Highlights include:

Planned large-scale solar projects will triple Louisiana's solar operations from one gigawatt to three gigawatts.

- Entergy Louisiana was approved by the Louisiana Public Service Commission (PSC) to develop 475 megawatts of solar power, tripling its existing renewable capacity.[5]
- Ventress Solar, the largest solar farm in Louisiana at 345 megawatts, is under construction in Pointe Coupee Parish.[6] Parish President Major Thibaut calls this the largest economic development project in the area in 30 years. The farm will help power McDonald's and eBay, who have signed Power Purchase Agreements (PPAs) with the operating company.
- Amazon is planning two solar farms, a 100 megawatt farm in St. Landry Parish and a 200 megawatt farm in Morehouse Parish.[7]
- Southwestern Electric Power Company (SWEPCO) will add 72.5 megawatt of solar from the Shreveport area near Hosston.[8]
- Cleco, an electric utility company, contracted a PPA for 240 megawatts of solar on the site of their retired Dolet Hills coal-powered plant, enabling a green tariff for large customers. They are also optioning sites for an additional 50-200 megawatts of solar in their region.[9]

Offshore wind continues to gain momentum, as utilities, manufacturers, and federal regulators are aligned towards building wind energy off the coast of Louisiana.

- Entergy New Orleans recently signed a Memorandum of Understanding (MOU) with Diamond Wind to explore the transmission needs to develop offshore wind in the Gulf of Mexico.[10]
- The Bureau of Ocean Energy Management is preparing for the first offshore wind lease sale in the Gulf of Mexico in June 2023, which will include lease areas south of Lake Charles. The planned Wind Energy Area off of Louisiana totals 174,275 acres and has the potential to power over 740,000 homes.[11,12]
- The Louisiana Department of Natural Resources (DNR) is updating its regulations for offshore wind leasing and operations in state waters.[13]

Large-scale solar installations, like this one in Lafayette, can provide power for the main electricity grid. Photo by University of Louisiana at Lafayette

Statewide energy security and modernization planning aim to improve the resilience of Louisiana's power grid in the face of a changing climate and other threats.

- The Governor's Office, Division of Administration, State Energy Office, and Public Service Commission (PSC) entered into a Memorandum of Understanding (MOU) in the summer of 2022 to establish an interagency partnership that will build a unified vision for safety and security of power grid infrastructure and that will leverage opportunities to modernize Louisiana power infrastructure assets to build a stronger grid.
- Louisiana's Interagency Grid Work Group was borne from the MOU and steers the state in developing and supporting initiatives related to grid modernization and energy transition through the IIJA and IRA. The group has collaborated with utilities, universities, and community partners to submit nearly $700 million in IIJA proposals to support energy resilience and grid modernization in Louisiana.
- As part of the IIJA, the State Energy Office submitted a $9M annual grant to the Department of Energy to develop a program for local grid resilience improvements, including projects such as solar microgrids with battery storage and vegetation management.
- The State Energy Office submitted to the Department of Energy a preliminary revision to Louisiana's Energy Security Plan in September 2022, with a final to be submitted September 2023. In collaboration with the Governor's Office of Homeland Security and Emergency Preparedness, this plan overlays Louisiana's energy profile with physical and cyber threats and vulnerabilities; the Climate Action Plan is highlighted as an approach to address these risks.
- Louisiana received technical assistance support from the Argonne National Laboratory to host a workshop with all state agencies and partners to strengthen a unified approach to energy security. This workshop will be held in the Spring of 2023.

Rooftop solar installations and microgrids provide job opportunities while increasing resilience and lowering utility bills for homeowners. Photo by Katie Sikora / Feed The Second Line

Microgrids and other DERs often require electrical work to buildings, creating additional jobs. Photo by Katie Sikora / Feed the Second Line

LOUISIANA COMMUNITIES ARE MAKING PROGRESS IN DISTRIBUTED ENERGY AND MICROGRIDS.

Increased societal reliance on electricity combined with threats to reliability of the power grid from increased climate impacts have facilitated a new market for Distributed Energy Resources (DERs) and renewable-powered microgrids to provide isolation from the power grid in emergency events. Highlights include:

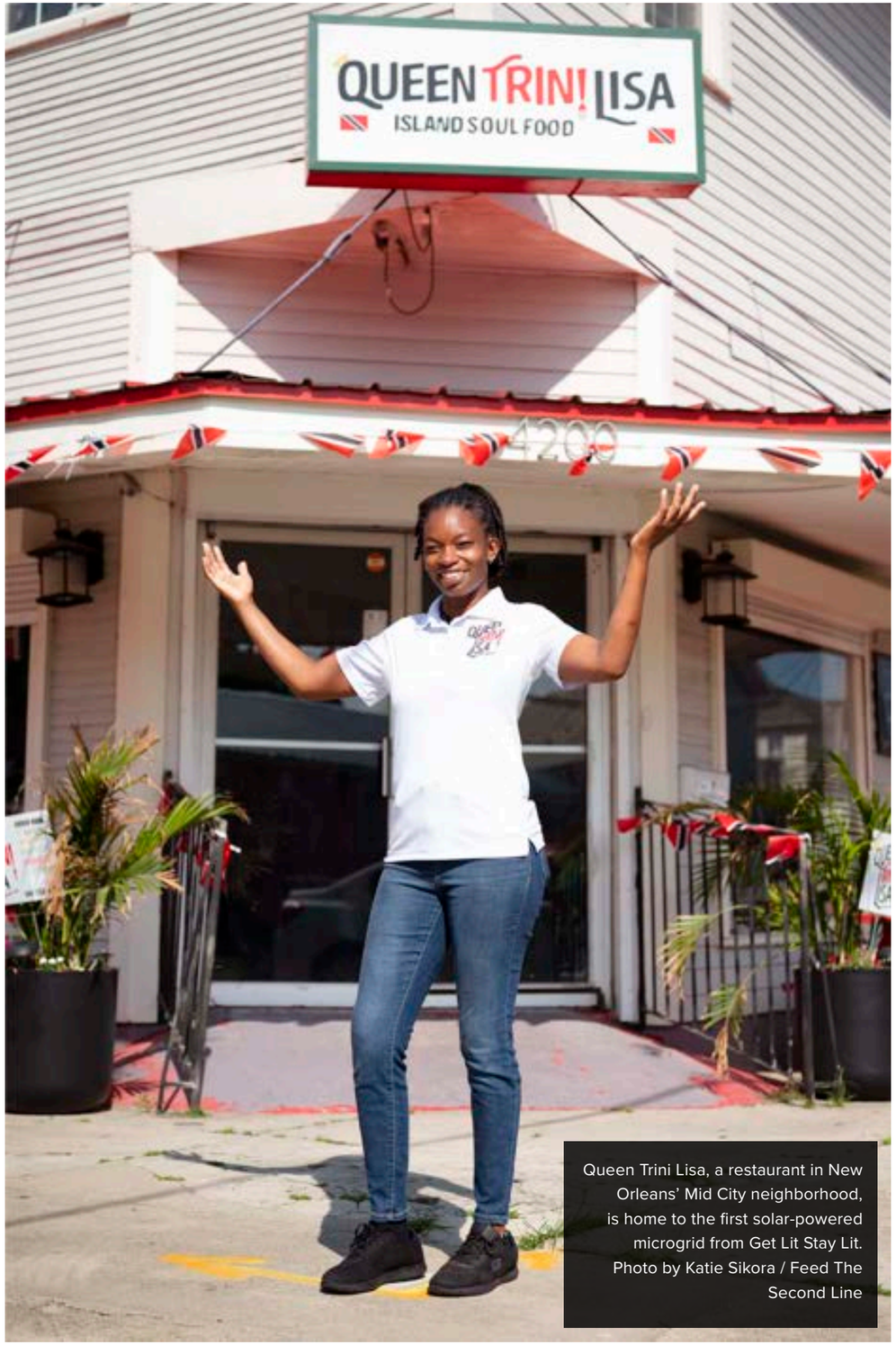
Partners across sectors are taking action to accelerate energy resilience.

- The Community Lighthouse Program, led by the community-based organization Together Louisiana, is partnering with faith-based congregations and community institutions across New Orleans to deploy a network of commercial-scale solar powered microgrids with battery backup capacity, which will serve as resilience hubs during power outages and natural disasters. The Community Lighthouse Program has made plans and investments to expand statewide through similar community-led efforts statewide.
- Another New Orleans-based nonprofit, Feed the Second Line, launched the Get Lit, Stay Lit Initiative to deploy solar-powered microgrids with battery backup to be deployed on restaurants across the City of New Orleans to serve as resilience and food distribution hubs in disaster events.[14]
- The University of Louisiana Lafayette (UL) will be upgrading the Cleco Alternative Energy Center in Crowley to a general-purpose Grid Test Facility. Researchers will simulate and test a wide variety of microgrid-related equipment and its impacts on the grid overall. This same facility will also be home to the new hydrogen electrolysis test bed through the H2theFuture initiative, demonstrating generation of hydrogen from solar and biomass, and utilization of this hydrogen for electrical power generation and green fuel feedstock.[15]

WHAT IS A MICROGRID?

Microgrids are a type of DER intended to provide power to a specific community or facility in an outage because it is isolated from the power grid. Microgrids can be placed on critical facilities such as hospitals, on community centers such as churches, or on community focal points such as restaurants. Localized, distributed power allows the facility to maintain power and serve as a resilience hub for the community in a post-disaster event. When powered by solar plus battery storage, microgrids provide multiple benefits from reduced emissions to increased resilience and reduced energy burdens.

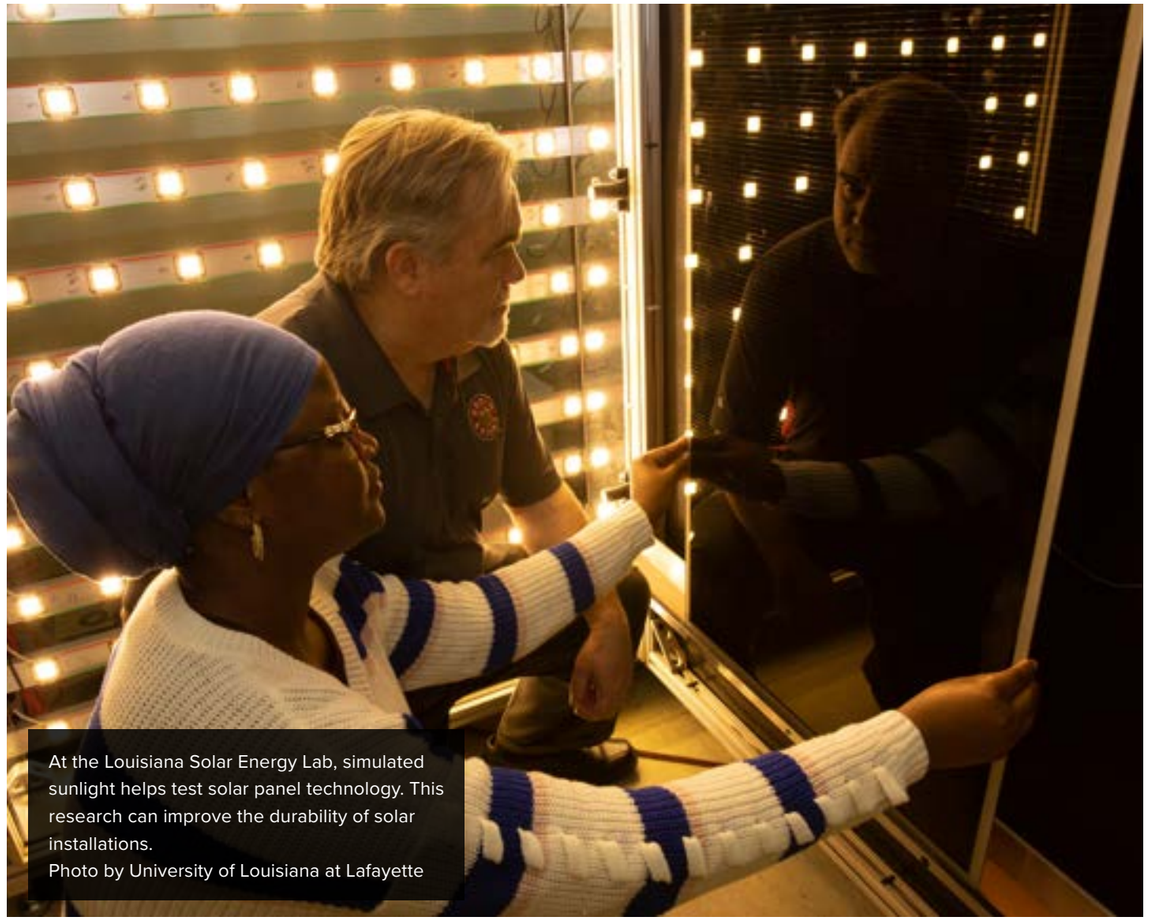
Dr. Terrence Chambers shows one of the test stands at the University of Louisiana at Lafayette's Solar Energy Lab, one of the largest outdoor test facilities in the region. Photo by Office of the Governor



Queen Trini Lisa, a restaurant in New Orleans' Mid City neighborhood, is home to the first solar-powered microgrid from Get Lit Stay Lit. Photo by Katie Sikora / Feed The Second Line

State and local efforts are accelerating distributed energy deployment.

- The New Orleans City Council appropriated $1 million in philanthropic funds for deploying resilience hubs in the City of New Orleans to increase energy resilience and reduce energy burdens.
- The City of New Orleans was selected by the Department of Energy to participate in the Community LEAP (Local Energy Action Program), which is providing technical assistance to plan for and invest in energy efficiency, renewable energy development, clean transportation, and resilient microgrids that will reduce energy burdens.[16]
- In November 2022, the Department of Energy released its competitive Grid Resilience and Innovation Partnership (GRIP) Program that deploys $10.5 billion to enhance grid flexibility and improve resilience of the nation's power grid against growing threats of a changing climate. The State of Louisiana is partnering with electric utilities, community-led organizations, and research institutions to lead proposal and application development for the first two years of funding.



At the Louisiana Solar Energy Lab, simulated sunlight helps test solar panel technology. This research can improve the durability of solar installations.
Photo by University of Louisiana at Lafayette

WHERE WE GO NEXT

REDUCE BARRIERS TO CLEAN ENERGY INSTALLATIONS.

Currently, policy barriers prevent quick deployment of clean energy but many efforts across the state are underway to ease obstacles. For community-scale generation, state and local governments must set rules for the permitting and siting of solar installations.[17]

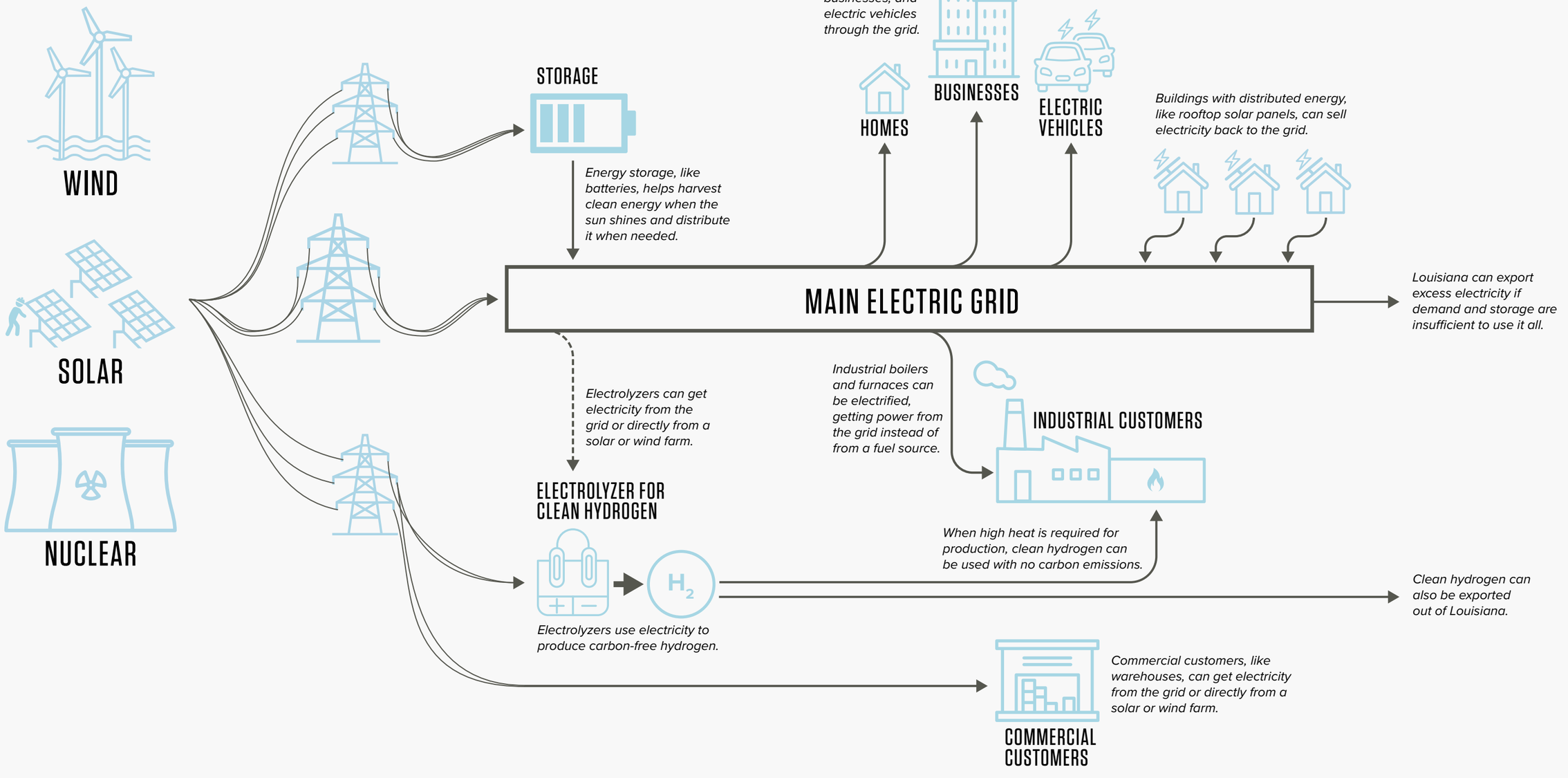
- The Louisiana Legislature passed House Bill 655 in 2022, which directed DNR to establish decommissioning regulations for utility-scale solar projects, including permitting fees and a collateral bond.[18]
- To supplement decommissioning regulations, CPEX is partnering with DNR to develop a model solar ordinance for parishes and municipalities to address siting concerns, rural character, and other concerns about solar farm expansion.[19] Implementation of this model ordinance will support jurisdictions to make informed decisions about permitting and siting of clean energy installation. CPEX will be finalizing this model ordinance toolkit this spring and presenting initial information to communities.
- Industrial-scale clean energy will involve dockets at the PSC, such as the Customer-Centered Options Docket (R-35462), with open rulemaking for an optional pilot industrial solar tariff.
- Adopted with unanimous approval from the PSC, Resilience Docket (R-36227) requires regulated electric utilities to develop assessments of Louisiana's current electric utility infrastructure for resilience and hardening for future storm events. Resilience Plans will be presented to the PSC in spring of 2023.
- Additional rulemaking is happening at DNR and the State Mineral and Energy Board for protocols for leasing of state water-bottoms for wind power generation.

LEVERAGE FEDERAL INVESTMENT FOR CLEAN ENERGY DEPLOYMENT.

The IIJA includes competitive grant opportunities to fund improvements, modernization, and expansion in power grid infrastructure as well as to invest in solar plus storage microgrids as resilience measures. Further, the IRA establishes new and augments existing tax incentives for production and investment in solar and wind energy resources, accompanied by a $27 billion bundle of competitive funds for the installation of distributed energy resources. As the impacts of climate change become more apparent on power infrastructure, competition will be fierce, necessitating stronger statewide collaboration on proposals, education on the need for stronger utility-scale and distributed-scale resources, and technical analyses for the most strategic investments.

HOW CLEAN ENERGY POWERS LOUISIANA'S TRANSITION TO NET ZERO

Clean energy from wind, solar, and nuclear is necessary for Louisiana to meet the demands of electrification.



INDUSTRIAL DECARBONIZATION

With two-thirds of Louisiana's emissions coming from the industrial sector (Figure 1), continual progress in decarbonization is critical to advance the state's net zero goals. Industrial decarbonization involves the use of alternate components, fuels, and feedstocks to avoid burning of fossil fuels in industrial processes. With increasing global demand for products and materials derived from processes with a lower carbon footprint, emphasized through circular economy and "buy clean" policies, Louisiana's industrial sector is adapting to new market opportunities.

Global energy price volatility in 2022 has demonstrated the value of energy diversification not only for increased momentum in energy transition but also for energy security. Through the Build America Buy America Act of 2021, federal investment in domestic manufacturing for clean energy components offers tremendous potential for Louisiana to be a leader in nationwide manufacturing. Further, corporate demand for clean energy sources combined with market demand for reduced carbon intensive materials has created extensive investment in industrial decarbonization in Louisiana.

Hydrogen is an important fuel for high-heat industrial processes. Shifting to clean hydrogen is a key step for decarbonizing industrial production. Photo by malp / Adobe Stock

FIRST YEAR PROGRESS

LOUISIANA'S INDUSTRIES ARE INVESTING IN DECARBONIZATION.

Since 2020, over $21 billion in new and expanded industrial projects have been announced to advance decarbonization, as highlighted in the callout box to the right on page 25. Projects include new manufacturing in the EV supply chain, alternative fuels production, carbon capture and storage, clean ammonia, and clean hydrogen. These announcements demonstrate clear interest and buy-in from Louisiana's industry to decarbonize, and federal support through the IIJA and IRA have furthered reduced decarbonization barriers.

WHAT IS CLEAN HYDROGEN?

Clean hydrogen refers to two kinds of hydrogen production: **no-carbon hydrogen**, produced by electrolysis powered from renewable electricity sources, and **low-carbon hydrogen**, produced from natural gas using steam methane reforming but with carbon capture and storage technologies.[1] Both no-carbon and low-carbon hydrogen have reduced emissions relative to carbon-intensive hydrogen, which is produced with steam methane reforming and unabated emissions. Hydrogen is used most commonly in industrial settings like refining and chemical production, two of Louisiana's major industries.

Louisiana was also awarded a $50 million grant, matched by $25 million in state funds, to develop a comprehensive clean hydrogen energy hub in a project called H2theFuture.[20] This project has five core areas, including research testing facilities at several state colleges and universities; NEXUS, a physical and programmatic hub housed at the University of New Orleans (UNO) for collaboration, coordination, and inclusive entrepreneurship; business development initiatives to work with new, existing, and disadvantaged businesses; a workforce development program aimed at displaced energy sector workers and rural residents; and a public-private partnership with the Port of South Louisiana to develop a hydrogen fueling barge. H2theFuture includes over 25 partners across south Louisiana and is designed to produce clean hydrogen and accelerate the workforce and accompanying infrastructure needed for success. Since Louisiana consumes 30% of all US industrial hydrogen for high heat industrial processes, the state is uniquely positioned as a leader in the transition to clean hydrogen.

PARTNERS ARE SUPPORTING IN A COMPREHENSIVE APPROACH TO DECARBONIZATION.

The launch of the Baton Rouge-based Carbon Reduction Alliance,[21] a collaborative effort of industrial companies, state agencies, universities, economic development organizations, and other interested entities, provides an opportunity to link university research to industrial application. The Alliance plans to serve as the hub for decarbonizing the Baton Rouge Area's industrial corridor. Similarly, the C1 Extension Service[22] recently launched by UL provides industrial companies, policymakers, and businesses interested in decarbonization with technological expertise. C1 aims to develop innovative technologies and associated policies as well as train future professionals to operate decarbonized systems.

LSU's PERTT Laboratory will receive funds from H2theFuture to develop a carbon capture testbed. Photo by LSU Communications & University Relations

LOUISIANA INDUSTRIAL DECARBONIZATION AND LOW-CARBON ANNOUNCEMENTS (2020-2022)

REDUCED-CARBON MATERIALS

- Arq Fuel (St. Charles Parish), January 15, 2021
- Louisiana Green Fuels Renewable Diesel (Caldwell Parish), April 23, 2021
- Chalmette Refining Renewable Diesel (St. Bernard Parish), June 24, 2021
- Delta Biofuel (Iberia Parish), June 28, 2021
- Renewable Energy Group (Ascension Parish), October 13, 2021
- Diamond Green Diesel Expansion (St. Charles Parish), October 21, 2021
- Origin Materials (Ascension Parish), February 18, 2022
- Arbor Renewable Gas (West Baton Rouge Parish), June 14, 2022
- Grön Fuels (West Baton Rouge Parish), December 2, 2022

ELECTRIC VEHICLE SUPPLY CHAINS

- Syrah Technologies Graphite and Active Anode Material Processing (Concordia Parish), February 15, 2022
- Koura Lithium Hexafluorophosphate (Iberville Parish), October 19, 2022

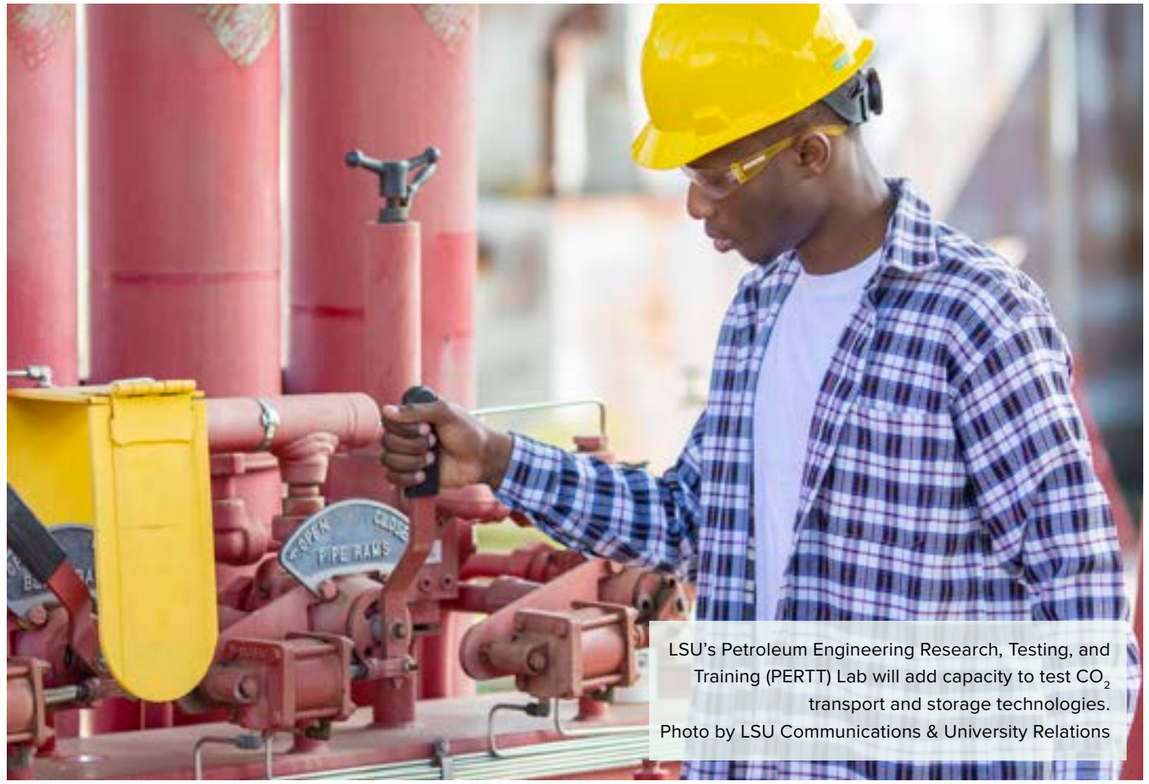
HYDROGEN AND AMMONIA

- Grön Fuels Green Hydrogen (West Baton Rouge Parish), November 10, 2020
- CF Industries Green Ammonia (Ascension Parish), April 21, 2021
- Air Products Blue Hydrogen (Ascension Parish), October 14, 2021
- CF Industries Carbon Capture (Ascension Parish) , August 5, 2022
- CF Industries Blue Ammonia (Ascension Parish), August 17, 2022
- Plug Power and Olin Corp Green Hydrogen Joint Venture (Iberville Parish), October 19, 2022

WHERE WE GO NEXT

EXPANDING LOUISIANA'S CLEAN HYDROGEN SUPPLY AND DEMAND.

The clean hydrogen economy in Louisiana has potential to mitigate intensive emissions from industrial fuels and feedstocks while creating high-quality jobs for Louisiana workers. As industrial facilities increasingly grapple with how to meet their environmental, social, and governance goals, low- and no-carbon hydrogen offer strong alternatives that promote job security, reduce pollution, and support a growing economy. Federal investments are supporting this growing clean economy market transition: the IRA modifies and develops new incentives for low- and no-carbon hydrogen production, and Louisiana is pursuing a regional clean hydrogen hub across Arkansas, Louisiana, and Oklahoma (ALO) in a project known as the H2ALO (HALO) from the IIJA's newly launched competitive hydrogen hub opportunity. Louisiana's proposal could draw $1 billion in funding from this $8 billion program to support clean hydrogen production. If Louisiana successfully maximizes these federal opportunities, reduced permitting barriers and strengthened partnerships across state agencies, industries, businesses, and communities can develop a new hydrogen-based economy that creates meaningful emission reduction while providing equitable community benefits.



LSU's Petroleum Engineering Research, Testing, and Training (PERTT) Lab will add capacity to test CO_2 transport and storage technologies.
Photo by LSU Communications & University Relations

Clean hydrogen and industrial electrification can be major sources of new jobs. University research demonstrations and testing will support this transition.
Photo by LSU Communications & University Relations

ADVANCING ANALYSIS ON INDUSTRIAL DECARBONIZATION PATHWAYS.

Through a philanthropic grant, the Governor's Office advanced development of an Industrial Electrification Analysis which will assess the potential of Louisiana industrial facilities to electrify building components and processes. A high-level map of Louisiana's industrial electrification potential and a detailed methodology report is anticipated in the summer of 2023 to serve as a technical and educational tool for policymakers and industries to understand the scale of opportunity available for industrial electrification. Through the C1 Extension Service and other academic efforts, facility-level and industrial cluster analyses are needed to provide tailored recommendations and pathways for the most comprehensive and cost-effective approaches to industrial emissions reduction in Louisiana.

ACTIVELY MANAGED METHANE EMISSIONS

New federal resources are available to address methane leaks from abandoned infrastructure. Photo by Louisiana Department of Natural Resources

Methane is a GHG approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere.[24] Louisiana recognizes that actively mitigating the most potent sources of methane is critical for the state to reach net zero emissions, and there is significant opportunity to mitigate methane emissions from oil and gas infrastructure through short-term action. Most notably, new federal resources are available to Louisiana to begin reducing stray methane emissions originating from 'orphaned wells,' which are nonproducing oil and gas wells left abandoned by operators. Because this kind of legacy infrastructure often has no clear legal owner, state and federal action to plug and cap these wells is necessary to address methane leaks.

FIRST YEAR PROGRESS

LOUISIANA IS LEVERAGING SIGNIFICANT FEDERAL INVESTMENT TO REMEDIATE ORPHANED WELLS.

The issue of orphaned wells received federal attention in the IIJA, with $4.7 billion made available over the next nine years for states and tribes to repair a portion of the country's 130,000 documented orphaned wells, of which approximately 4,600 are in Louisiana. DNR received an initial $25 million grant through the IIJA Orphaned Well Site Plugging, Remediation, and Restoration Program to fund the plugging of between 250 and 900 documented abandoned wells, prioritizing remediation of wells located near low-income communities, and providing opportunities for displaced energy sector workers to be trained for the orphan well remediation workforce (Figure 6).[25]

DNR is using a portion of this funding to develop procedures to measure and track contamination of groundwater and surface water, and to deploy methane monitoring stations that will provide information to help identify which wells are most likely to leak methane and thus should be plugged most urgently.

Monitoring inactive wells for methane leaks protects nearby communities and ecosystems. Photo by US Fish and Wildlife Service

The initial $25 million from the IIJA will soon be followed by more funding from the same IIJA Orphaned Well Site program. In the 2021 Legislative Regular Session, the Louisiana Legislature passed Senate Bill 245 to give DNR more flexibility in how much it can spend to plug and restore abandoned wells. This will enable DNR to address a greater number of abandoned wells for remediation. The legislation makes it more likely that the state will receive an additional $150 to $200 million from this IIJA program.

The federal investment in plugging and restoring orphaned wells is a necessary infusion of capital for methane emissions reduction for Louisiana. The state's Oilfield Site Restoration Fund receives money each year for this work, but it is not enough to address the known and unknown orphaned wells that may be leaking methane. The monitoring and predictive tools currently under development will support prioritization of future investments and identification of wells with the greatest leaks.

WHERE WE GO NEXT

STRENGTHENING OPERATOR ACCOUNTABILITY AND TIGHTENING LOOPHOLES.

While plugging and restoring orphaned wells is important to address Louisiana's legacy infrastructure, it is equally important to stop creating new orphaned wells. Strengthening financial security requirements and reducing exemptions for future utility designations both can hold operators responsible and accountable for inactive wells. Colorado successfully passed new financial security rules this year, which are considered the strictest in the country.[26] Colorado, along with Alaska and New Mexico, has also banned routine venting and flaring of oil and gas from facilities to reduce methane comprehensively.[27] This prohibition on venting and flaring could serve as a model for Louisiana to curtail methane emissions from industrial operations. Further, in November 2022 the Environmental Protection Agency (EPA) released draft rules on industrial methane releases which are expected to be finalized in 2023. When finalized, Louisiana will have to undergo state rulemaking to adopt the standards set by EPA. Louisiana has the option to adapt them for a local context as long as they are equally strong.

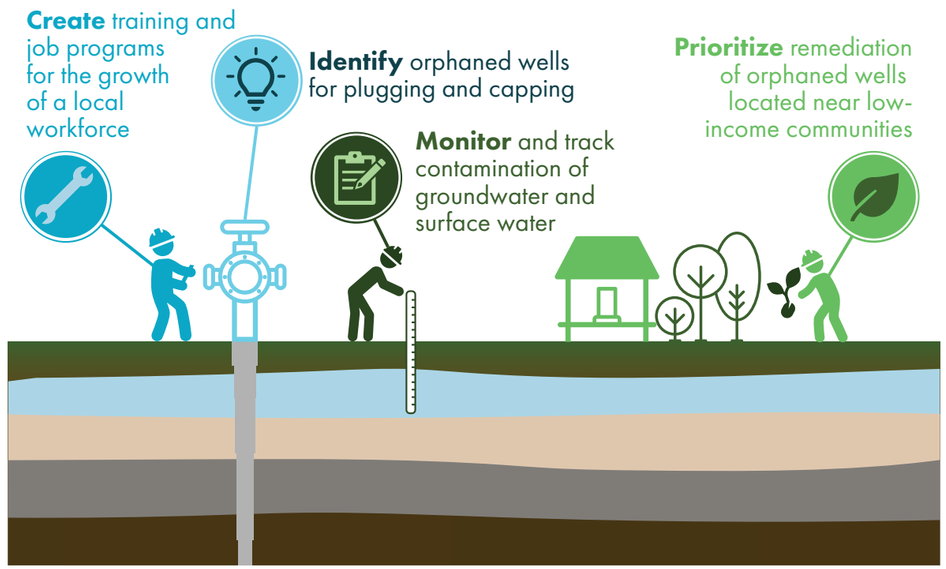


Figure 6. Illustration of key actions that can be undertaken to actively manage methane emissions.

TRANSPORTATION, DEVELOPMENT, AND THE BUILT ENVIRONMENT

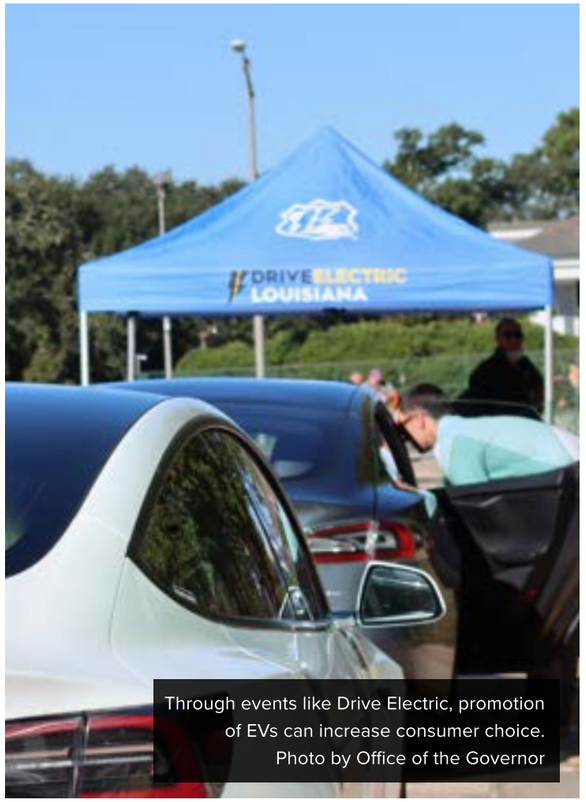
Opportunities to decarbonize transportation extend to Louisiana's multi-modal systems, like freight and river commerce. Photo by Bryan / Adobe Stock

This wide-ranging section of the Climate Action Plan address all modes of transportation, land use, and buildings in Louisiana. Associated actions encompass efficiencies and decarbonization for all modes of transit, including freight, ports, aviation, passenger vehicles, and heavy-duty trucking. Land use actions highlight the benefit of more accessible public and regional transit, cross-governmental collaboration for strategic land use, and proactive transportation planning. Actions related to the built environment offer pathways to reduce energy usage in buildings through electrification, weatherization, and other efficiency measures.

The IIJA supports investment in traditional infrastructure, such as roads and bridges, as well as in innovative infrastructure, such as reconnecting communities, Complete Streets policies, low-carbon project materials, EV charging infrastructure, and more.[29] This unparalleled opportunity has facilitated greater partnership and engagement across cities and regions of Louisiana.

BUILDOUT OF THE STATE'S ELECTRIC VEHICLE CHARGING NETWORK IS UNDERWAY.

To position Louisiana for funds from the U.S. Department of Transportation, the Federal Highway Administration approved the state's National Electric Vehicle Infrastructure (NEVI) Plan in September 2022.[30] Building on the state's Alternative Fuel Corridors, this plan identifies EV charging facilities to be located across Louisiana, no farther than 50 miles apart and located within one mile of the interstate. Over the next five years, $73 million will be deployed through Louisiana's Department of Transportation and Development (DOTD) for interested parties to own, install, and operate EV charging stations and build out this corridor across Louisiana. The Drive Electric Louisiana project continues to raise awareness for and increase adoption of EVs by engaging with dealers, state and local officials, utilities, and regulators to deploy EVs; a total of eight events hosted by Drive Electric were held in 2022.[31]



Through events like Drive Electric, promotion of EVs can increase consumer choice. Photo by Office of the Governor

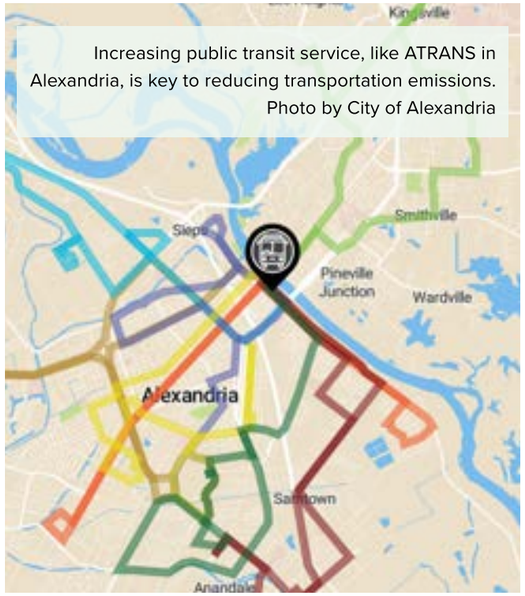
LOUISIANA IS ESTABLISHING A FRAMEWORK FOR STATEWIDE PLANNING.

Louisiana was awarded a state planning grant through the American Rescue Plan Act (ARPA) in 2021, allowing for the establishment of the Office of State Planning within the Division of Administration. This new office will provide the framework and implementation roadmap for planning, policy, development, and technological capacity to coordinate and align state agencies and local jurisdictions and to implement long-term resilience and planning. The first state planning manager was hired in the summer of 2022.

With the buildout of more EV charging stations, like this one in New Orleans, more drivers will be able to switch to an EV. Photo by Dexter Ellis / The Water Institute

URBAN AND RURAL COMMUNITIES ARE INCREASING CONNECTIVITY THROUGH TRANSIT OPTIONS.

In Central Louisiana, the Alexandria-Pineville Bicycle and Pedestrian Plan[32] is fully funded through a partnership between the Rapides Area Planning Commission and the electric utility company Cleco. Construction of bicycle and pedestrian infrastructure on four road segments in Alexandria began in fall 2022 with remaining phases to be completed by 2026. The Rapides Area Planning Commission is also working to improve transit service in the region by implementing improvements to Alexandria Transit (ATRANS) and piloting a Natchitoches and Grant Parishes rural curb-to-curb transit service.[33]



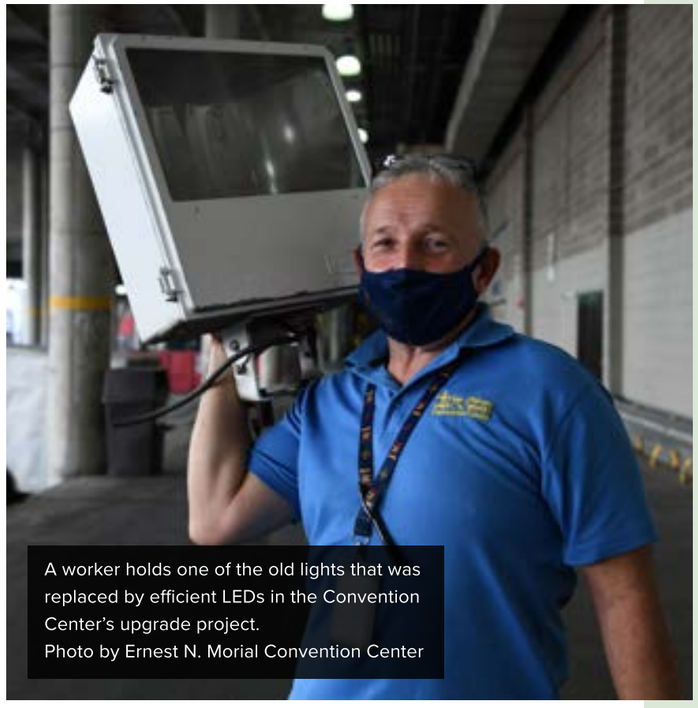
Increasing public transit service, like ATRANS in Alexandria, is key to reducing transportation emissions. Photo by City of Alexandria

Additionally, five Louisiana projects received a collective $63 million from the Rebuilding American Infrastructure with Sustainability and Equity ("RAISE") grant program, formerly known as the BUILD and TIGER discretionary grant programs. Baton Rouge and Gonzales will receive $20 million for train stations along the future Baton Rouge to New Orleans Inter-City Rail Service, while other projects in Shreveport and Natchitoches will provide much-needed improvements for bus service, pedestrian facilities, protected bicycle lanes, and better drainage.[34,35] The Kings Highway corridor in Shreveport will benefit from a $22 million RAISE grant, connecting healthcare institutions like Building our Region's Future (BRF), Ochsner Louisiana State University (LSU) Health Shreveport, LSU Health Shreveport, Shriners Hospital for Children, and Willis-Knighton Health.[36] This project will reconstruct the roadway to include bus pull-outs and streetscaping, bus rapid transit improvements using battery-electric buses, improved pedestrian and bicycle facilities, street lighting, and Americans with Disabilities Act (ADA) access. Similarly, in Natchitoches, a $17 million RAISE grant will support the Texas Street business corridor, install sidewalks and lighting, and implement bicycle and pedestrian routes throughout the city.[37]

LOUISIANA'S PORTS ARE REDUCING EMISSIONS.

Louisiana's ports are working to install shore power options to allow vessels to use grid electricity instead of additional marine diesel while in dock. Following a 2020 shore power installation at Port Fourchon, Entergy recently completed a project at the Port of Lake Charles with the Crowley Corporation to power their tugboats. This project is estimated to reduce carbon dioxide emissions by 500 metric tons per year.

Capital Area Transit System (CATS) in Baton Rouge is converting its fleet to electric buses. Photo by Capital Area Transit System


A worker holds one of the old lights that was replaced by efficient LEDs in the Convention Center's upgrade project. Photo by Ernest N. Morial Convention Center

CASE STUDY: PROVING THE EFFECTIVENESS OF ENERGY EFFICIENCY AT SCALE

The Ernest N. Morial Convention Center in New Orleans comp leted one of the largest energy efficiency upgrades in the region in 2022, including changing 5000 lighting fixtures to LEDs in the Exhibit Hall space and upgrading chiller and cooling towers. This upgrade also included pursuing Leadership in Energy and Environmental Design (LEED) certification, benchmarking the facility energy use in Energy Star Portfolio Manager for future tracking. As part of the LEED certification process, the Convention Center eliminated CFC refrigerants, installed EV charging stations in a public parking lot, installed 87 water bottle filling stations, and planted 200 trees. This project demonstrates the technologies and techniques available for similarly sized buildings to pursue improved energy efficiency.

WHERE WE GO NEXT

INCREASING CONSUMER OPTIONS FOR CLIMATE ACTION.

Alongside the IIJA increases to the Weatherization Assistance Program and the Conservation Block Grant Program and the new Efficiency Revolving Loan Fund, the IRA offers incredible opportunity to invest in energy efficiency for residential and commercial buildings. Up to $9 billion is available for consumer home energy rebates related to energy efficiency retrofits and electric appliances. Homeowner tax credits for home efficiency measures such as heat pumps, rooftop solar, electric HVAC, and water heaters will be available for 10 years. An additional $1 billion grant program will directly support efficiency measures in affordable housing. However, barriers to widespread adoption of these efficiency rebates and credits must be addressed, including simplifying applications and home assessments, preparing Louisiana workers and businesses to do this work, and improving the structural readiness of homes for energy efficiency. For example, federal funding to improve energy efficiency in residential buildings relies on a set of criteria that include structural soundness, but many homes in Louisiana still have structural damage from recent hurricanes and may not be eligible for funding. Programs, such as career skills training and energy auditor training, provide avenues for Louisiana to prepare a workforce for the influx of funding and jobs needed to support efficiency implementation.

The IRA further unlocks opportunity for EV deployment through a $4000 consumer tax credit for used clean vehicles and up to a $7500 tax credit for new clean vehicles. This incentive intends to increase access to zero-emission technologies for low- to moderate-income individuals, and Louisiana will need to support communities in leveraging credits through education and resources.

STRENGTHENING BUILDING AND ENERGY EFFICIENCY CODES.

Improving the efficiency of buildings to reduce energy demand starts with strong codes. Act 635 of the Louisiana Legislature directed the Louisiana State Uniform Construction Code Council (LSUCCC) to create an Energy Code Commission and to update the Louisiana Construction Code with the 2021 International Energy Conservation Code and 2021 International Residential Code (IRC) Chapter 11 on Energy Efficiency.[38] This energy code update follows the regular code update cycle, which concluded in 2022; the 2021 International Codes with Louisiana amendments are in effect as of January 1, 2023. The updated energy codes will be enforced beginning July 1, 2023, and the state is pursuing funding from the IIJA's Resilient and Efficient Codes Implementation grant program to aid in implementation across Louisiana. By strengthening both the building and energy efficiency codes, Louisiana's buildings will be built to withstand strong storms and to reduce energy burdens.

At the Morial Convention Center, efficiency upgrades in the building were complimented by on-site green infrastructure updates, providing benefits like stormwater runoff management.
Photo by Ernest N. Morial Convention Center

NATURAL AND WORKING LANDS AND WETLANDS

Work to restore Louisiana's coastal wetlands has climate benefits and promotes ecosystem health and resilience. Photo by Coastal Protection and Restoration Authority

Louisiana's natural and working lands, from its forests and fields to the coastal marshes, are important not only for biodiversity and recreation but also for their cultural heritage. The Climate Action Plan seeks to maximize the carbon sequestration potential of Louisiana's lands in three broad areas: conservation, regenerative agriculture, and wetland restoration. Preservation and conservation of natural lands and urban green spaces increases the overall sequestration value and flood risk reduction potential of urban and rural landscapes. Regenerative and sustainable agriculture practices for working lands seek to reduce emissions and enhance sustainability of farming, ranching, and forestry lands. Louisiana's Coastal Master Plan and other wetland restoration projects increase the sequestration potential of the state's coastal wetlands. Related strategies aim to address adaptation goals as well as mitigation goals. Reducing flood risk and improving community resilience can be co-benefits in how Louisiana protects land for carbon sequestration.

LOUISIANA IS INVESTING IN THE CONSERVATION OF ITS NATURAL LANDS.

Louisiana's natural lands have a new source of conservation funding this year with the establishment of the Louisiana Outdoors Forever Program and Fund.[39] Act 714 of the Louisiana Legislature established this dedicated conservation funding program with $10 million to seed first year funding with the Louisiana Department of Wildlife and Fisheries (LDWF) as the administrative and fiscal agent of the program. This source of dedicated funding for land conservation will help unlock millions in federal funds and partnerships for more extensive conservation efforts.

Through resources in the IIJA, the EPA will fund nutrient reduction and water quality improvement measures in the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force's Gulf Hypoxia Action Plan[40] for the next five years, totaling $60 million for all states. Louisiana will receive approximately $1 million for each of the next five years to implement nutrient reduction measures. In its first two years of funding, Louisiana will leverage for greater implementation of on-farm conservation programs in watersheds with the highest concentration of nutrient loading. For example, implementation of best management practices (Figure 7) such as cover crops has been shown to result in greater nutrient uptake by plants which will sequester more carbon into soils while providing soil stabilization.[41] In addition, advanced testing of nitrogen in soils may also result in reduced nitrogen fertilizer application and thus less nitrous oxide emissions, another potent GHG.[42] Lastly, planting of riparian wetlands alongside agricultural fields can further build vegetated biomass, sequester more carbon, and reduce nutrient pollution to surrounding ecosystems.[43] Research by LSU AgCenter is ongoing to publish peer-reviewed scientific studies that quantify nutrient reduction related to land management practices.[44] Together, the state will work to reduce nutrient pollution in waterways while also providing flood risk reduction and carbon sequestration value.

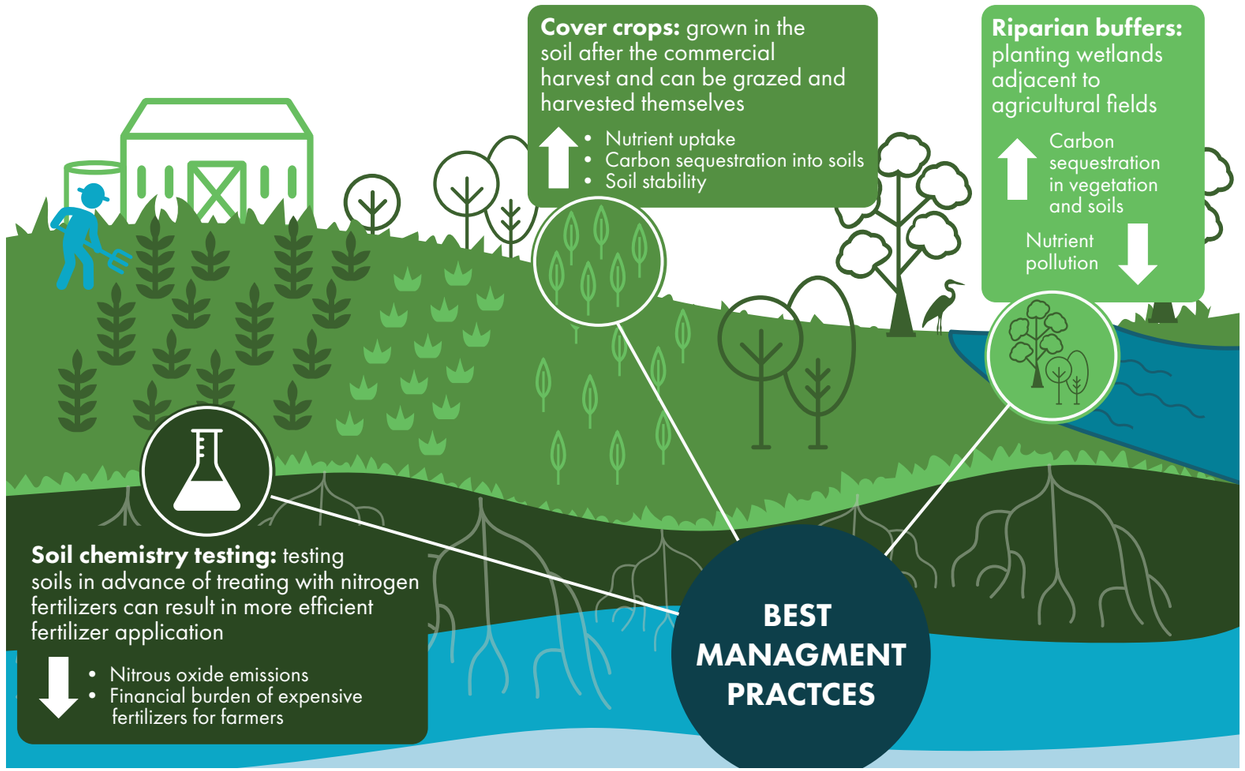


FIGURE 7. ILLUSTRATION OF THREE TYPES OF AGRICULTURAL BEST MANAGEMENT PRACTICES WITH CLIMATE BENEFITS HIGHLIGHTED.

Louisiana's abundant natural lands will benefit from new sources of conservation funding.
Photo by Coastal Protection and Restoration Authority

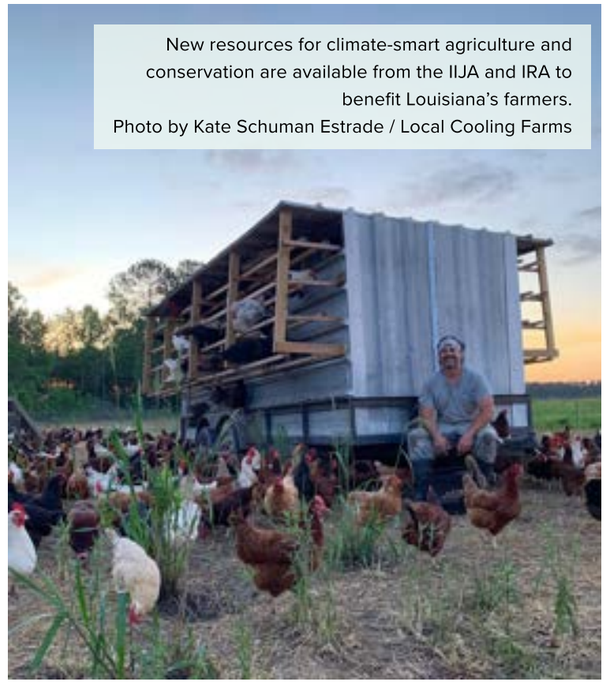
Partnerships between state agencies and local parishes lead to successful projects, as exemplified by the state's coastal program.
Photo by Coastal Protection and Restoration Authority

LOUISIANA IS ADVANCING COASTAL PROTECTION AND RESTORATION SCIENCE AND PROJECTS.

The state's Coastal Master Plan, a $50 billion, 50-year plan to restore and protect Louisiana's coast, is undergoing its scheduled six-year update for 2023. The current plan, approved in 2017, continues to implement flood risk reduction measures and wetland restoration projects. In 2022, 13.9 miles of levees were improved, 28.3 million cubic yards of sediment were dredged, and 4,272 acres of marsh benefited from the projects outlined in the plan. Also in the past year, 11 projects started construction at $407 million total value and 8 projects completed construction at $741 million total value including the largest marsh creation projects in history. These land-building projects are key to maintaining and increasing the natural carbon sequestration potential in Louisiana's wetland environments while provide valuable co-benefits (e.g., habitat provisioning for aquatic resources). Furthermore, implemented risk-reduction projects protect vulnerable coastal communities from rising sea levels.

AGRICULTURE PRACTITIONERS AND FARMERS ARE GETTING CLIMATE-SMART ACROSS THE STATE.

- SPROUT, an organization based in New Orleans, trains new farmers through public programs while helping existing farmers transition to more climate-smart agriculture; it also partners with federal agencies to conduct outreach and improve access to conservation programs. In 2022, SPROUT held 160 hours of farmer technical assistance field days which included offering free cover crop seeds to farmers statewide.[45] In 2023, SPROUT plans to launch a statewide climate-smart agriculture cohort that will support financial assistance and loan procurement for farmers to climate-smart agriculture.
- The Louisiana Department of Agriculture and Fisheries (LDAF) continues to connect farmers to conservation formula programs like EQIP (Environmental Quality Incentives Program) and CSP (Conservation Stewardship Program). Though these programs historically have received inadequate funding, the IIJA and IRA reinvigorate sustainable farming and forestry through wide-scale deployment of the EQIP and CSP. There are many active Louisiana landowners and high participation in these programs, with 238,000 contract acres covered and $42 million obligated by EQIP and CSP combined in 2021.[46]
- Additional watershed scale programs through the Natural Resources Conservation Service (NRCS) are receiving new funding through the IIJA, unlocking new resources for Louisiana's local Soil and Water Conservation Districts to complete planned projects.



New resources for climate-smart agriculture and conservation are available from the IIJA and IRA to benefit Louisiana's farmers.
Photo by Kate Schuman Estrade / Local Cooling Farms

- Louisiana submitted 14 proposals under the first tranche of the Climate Smart Commodities Competition of the U.S. Department of Agriculture (USDA).[47] Louisiana submissions span cotton, timber and forest products, livestock, rice, vegetables, and others, totaling a proposed investment of $659.5 million in climate-smart agriculture for Louisiana. The USDA will work with applicants to refine and finalize proposals in the coming months. Climate Smart Commodities alongside other recurring and new sources of funding bring a unique opportunity to invest in farmers and support sustainable management of working lands.
- Urban reforestation is increasingly important to manage heat, stormwater runoff, air quality, and more. In New Orleans, the organization Sustaining Our Urban Landscape (SOUL) initiated a planning process for a Reforestation Master Plan in summer 2022, holding meetings with professional landscape architects, arborists, municipal departments, nonprofits, and residents.[48] SOUL has contracted with Spackman Mossop Michaels, a landscape architecture and urban design firm based in New Orleans, to write the plan.

WHERE WE GO NEXT

ENSURING CONTINUED NATURAL SEQUESTRATION INVESTMENTS.

The draft 2023 Coastal Master Plan,[49] released for public comment on January 6, 2023, will be up for approval in the 2023 Legislative Session. Continuing to fund and implement coastal restoration projects is critical – not just for carbon sequestration, but for flood protection, water quality, wildlife and fisheries habitat, and the protection of Louisiana's communities and cultural heritage. Further opportunity to invest in natural sequestration is anticipated through increased biofuel production and demand as well as increased funding for traditional conservation programs of the USDA. Further, Congress has begun negotiations on the 2023 Farm Bill with a renewed push for climate-smart agriculture through two mechanisms: support for farmers confronting extreme weather and incentives for the agriculture sector to fight climate change. Local farmers have the opportunity to advance these new priorities and leverage unparalleled investment for Louisiana.

LEADING BLUE CARBON ANALYSIS TO UNLOCK CARBON SEQUESTRATION MARKETS.

The capacity of wetlands to store carbon, sometimes known as "blue carbon," is being studied by researchers at local universities, CPRA and other state agencies, federal agencies including the U.S. Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA), The Water Institute, and other coastal scientists. This scientific research can demonstrate a defensible methodology for wetland restoration projects to be part of global carbon offset markets since carbon offsets are usually used to construct or preserve forests. Louisiana's abundant wetlands also have tremendous capacity for natural carbon storage as well as providing multiple co-benefits for surrounding communities and ecosystems. Research is needed to develop the procedures, verification method, and accountability of users in a carbon market as well as establish a managing agency to lead this effort. With the scientific and policy analysis in place, the blue carbon market could provide a critical source of funding for continued implementation of Coastal Master Plan projects in the future.

Planting projects are important for marsh and wetland health as well as for carbon sequestration. Photo by Restore or Retreat

AN INCLUSIVE, LOW-CARBON ECONOMY

While it matters that Louisiana reduces the quantity of GHG emissions reduction, it also matters how Louisiana accomplishes these reductions. In developing the Climate Action Plan, the Task Force established fundamental objectives for how climate action should be developed and implemented. This section highlights key advancements to strengthen Louisiana's economy and workforce including creating an inclusive, low-carbon economy that supports and promotes clean energy development and transition, centering Louisiana workers and businesses in the transition through accessible training and resources. Steps taken in 2022 to progress education, research, and innovation at Louisiana's colleges and universities are also highlighted.

From Louisiana's technical and community colleges to its HBCUs, universities, and training institutions, educational and training programs are critical to ensuring broad benefits of decarbonization.
Photo by LSU Communications & University Relations

CLEAN ENERGY BUILDOUT AND INDUSTRIAL DECARBONIZATION PROJECTS ARE MAJOR SOURCES OF NEW JOBS IN LOUISIANA.

A new market for clean hydrogen and development of offshore wind are anticipated to generate significant job opportunities in Louisiana. Increased demand for EVs, renewable energy, clean hydrogen, and carbon capture will further increase opportunities for job creation. The 2021 US Energy & Employment Report presented solar electric generation as the largest source of electric power jobs nationwide, with over 3,400 people employed in the solar industry in Louisiana.[50] Solar expansion will continue to offer a large source of employment growth for Louisiana, and the state's colleges and technical training programs are preparing for this growth.

The solar industry is a major source of job growth in Louisiana.
University of Louisiana at Lafayette

LOUISIANA'S COLLEGES AND UNIVERSITIES ARE PREPARING FOR THE ENERGY TRANSITION.

Louisiana universities and colleges are developing programs that not only train workers in clean energy jobs but also build local, academic expertise in energy transition technologies. These university specializations will help connect research to application as Louisiana's energy transition progresses.

Some colleges and universities offer classes that train the solar workforce
Photo by River Parish Community College

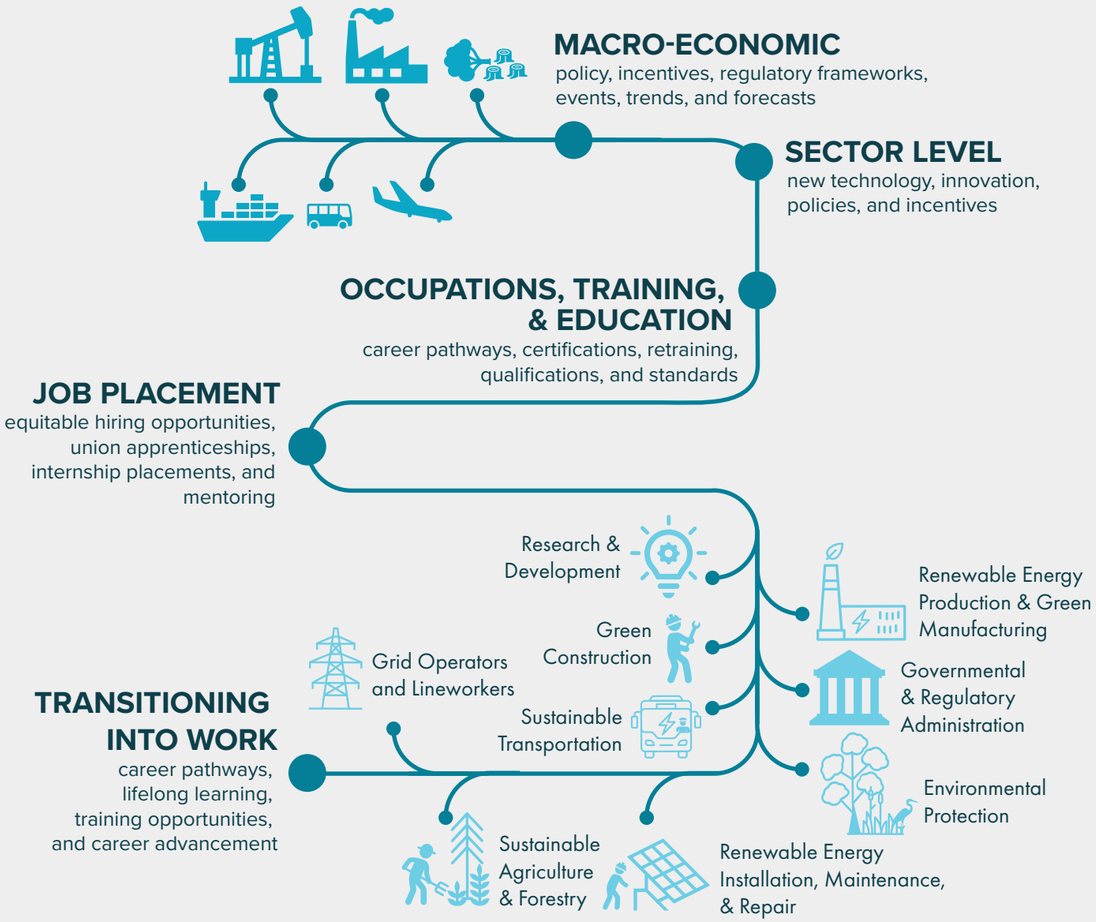
- UL houses the Louisiana Solar Energy Lab,[51] complete with a new laboratory and classroom building. They offer both academic concentrations, like a minor in Renewable Energy and a Sustainable Energy Systems concentration, as well as certificate programs and non-credit workforce development programs through the university's Continuing Education department. Over 2,500 K-12 students, companies, and public officials have toured UL's solar facilities just in 2022.[52]
- The H2Workforce program,[53] led by the Louisiana Community and Technical College System, is focused around working with displaced energy workers, rural residents, minority and Indigenous Louisianans, re-entry (those transitioning from prison to life in the community), and underrepresented communities to provide equitable opportunity to make the transition into hydrogen and green energy careers.
- H2Testbeds will support four university research areas: carbon capture at LSU, green hydrogen at UL, the Maritime Center at UNO, and the Institute for Engineering Technology at Nicholls State University.[54]
- The New Energy Center of the US, called H2NeXus, plans to be the physical and programmatic hub for green hydrogen development. Located at UNO's Research and Technology Park, called "The Beach," NEXUS will offer an entrepreneurship accelerator focused on hydrogen while connecting new energy specializations at the region's Historically Black Colleges and Universities.[54]
- The Beach will host the Louisiana Wind Energy Hub which builds on the strengths of UNO's Boysie Bollinger School of Naval Architecture and Marine Engineering. The hub will include startup incubation support and services, wind innovation programming, seed technology commercialization grants, a Wind Scholars program, and certificates for offshore wind through UNO's Professional and Continuing Education division.[54]
- With a $27.5 million gift from Shell, LSU is establishing the Institute for Energy Innovation that builds on the petroleum engineering program and expands to include research into carbon capture and hydrogen technologies.[55]

EXPANDING THE AVAILABILITY AND AWARENESS OF TRAINING OPPORTUNITIES.

The work done in 2022 to secure funding for programming, projects, and institutional capacity serves as an important starting point for transitioning Louisiana's energy workforce. These investments not only create new jobs but also support increased demand for energy transition technologies and new research opportunities for Louisiana's academic institutions. It is expected that additional benefits from job growth will be seen in job quality and the communities uplifted by job opportunities. Many programs of the IIJA require applicants to develop community benefits agreements that detail how disadvantaged communities will benefit from investment, how underrepresented communities will be engaged in the new workforce, and quantifiable metrics that track community benefits throughout implementation. Further, many incentives of the IRA require or provide a bonus credit for projects with apprenticeship requirements in construction in the first ten years of operation. Federal workforce requirements will incentivize states, industries, and stakeholders to similarly prioritize a workforce that provides high-quality jobs and includes previously underrepresented communities.

Faculty and students at Louisiana's academic institutions are benefiting from new research and training opportunities for the energy transition. Photo by LSU Communications & University Relations

HOW WE BUILD A PIPELINE OF GREEN JOBS



COLLABORATION AND PARTNERSHIP TO ENSURE SUCCESSFUL IMPLEMENTATION

Continued partnership across state and local governments, utilities, industry, nonprofits, universities, and communities is essential for strategic and coordinated implementation of the Climate Action Plan as well as for the landmark federal opportunities now available. Through support from CPEX, the Louisiana Governor and the Commissioner of Administration hosted a two-day workshop in March of 2022 to share knowledge, collaborate on approaches with federal agencies, and align on priorities for Louisiana's implementation of the IIJA. This workshop bolstered strong alignment across state agencies and with external partners on advancement of state priorities, particularly the Climate Action Plan. The Governor hosted another cabinet-level workshop in January of 2023 to overview the IRA and support agencies in setting ambitious 2023 work plans.

State agency and public workshops over the past year have brought together leaders to align on implementation priorities. Photo by Warren Photography

LOUISIANA IS AN ACTIVE PARTNER OF THE BIDEN ADMINISTRATION IN JUMP-STARTING THE NATIONWIDE ENERGY TRANSITION.

Many goals of the Climate Action Plan align with the goals of the Biden Administration, providing a unique opportunity for partnership between the State of Louisiana and the White House.

- At the State Agency Infrastructure and Economic Resilience workshop held in New Orleans, March 7-8, 2022, Louisiana's state agency leaders heard from Shalanda Young, Director of the White House Office of Management and Budget, on how the state could use the IIJA to accelerate a just and equitable energy transition.
- In early April, Chair Brenda Mallory of the White House Council of Environmental Quality and Executive Director Christine Harada of the Federal Permitting Improvement Steering Council visited Louisiana to discuss ways to move key Louisiana projects forward and how to best support infrastructure initiatives outlined in the Climate Plan. During the visit, they toured key infrastructure projects, met with environmental justice and energy transition leaders, and engaged with the Governor and his cabinet as well as New Orleans Mayor Latoya Cantrell.

Brenda Mallory, Governor Edwards, and Christine Harada in April 2022.
Photo by Office of the Governor

- Also in April, Secretary of the Interior Deb Haaland visited the expansion of Bayou Sauvage Urban National Wildlife Refuge and highlighted the administration's ongoing efforts to conserve, protect, and restore the country's land and waters.
- And in May, Secretary of Energy Jennifer Granholm visited Louisiana for the first time and toured Bayou Choctaw Strategic Petroleum Reserve; the Secretary met with state's leaders to discuss the administration's effort to shift to cleaner energy.
- Lastly, Dr. Rick Spinrad, NOAA Administrator, toured the shipbuilding facilities in Houma, Louisiana, where Louisiana workers are constructing research-class vessels for NOAA to explore the ocean and gather crucial climate and oceanic data.

LOCAL COMMUNITIES ARE LEADERS IN CLIMATE ACTION PLANNING.

Residents in Gonzales have informed the development of a local Climate Action Plan.
Photo by CPEX

Urban and rural communities are taking the lead to plan for climate action, providing an example for other municipalities in Louisiana. Following a GHG Inventory Study in 2019, the City of Gonzales recognized the importance of mitigating GHG emissions at a local level. In 2021 the City Council adopted a resolution to establish a Climate Action Committee to "explore opportunities to reduce GHG emissions" in line with the State's emission reduction goals. As a result, the City of Gonzales worked with CPEX, in partnership with the International Council for Local Environmental Initiatives (ICLEI), to develop a Climate Action Plan. CPEX worked closely with the Gonzales Climate Action Committee to develop ambitious strategies and specific actions at the city government level that will help Gonzales contribute to the state's goal of net zero emissions by 2050. The Climate Action Plan will be presented to the City Council for approval in February 2023. Additionally, the City of New Orleans is releasing an update to its 2017 Climate Action Plan[56] that further builds on their previous resilience work and reflects new priorities. The plan demonstrates climate action accomplished and in progress by the City of New Orleans in collaboration with residents, businesses, nonprofits, and advocacy groups. Further, the city's updated plan reflects an adjusted interim goal to reduce emissions by 50% by 2035 to align with the state's Climate Action Plan.

For Louisiana to be a climate leader, opportunity must be shared broadly across all parts of the state, including at-risk communities that have been left out of previous environmental planning efforts. New educational and employment opportunities are important but must be accessible. The intentional inclusion of minority and disadvantaged communities by the H2theFuture project should be replicated across other implementation projects to ensure that the energy transition brings shared prosperity to all communities across Louisiana. Organizations like Taproot Earth,[57] Gulf South for a Green New Deal,[58] and the Alliance for Affordable Energy[59] are working to educate and engage communities on climate action, including public education sessions, advocacy opportunities, and discussions of potential community benefits.

WHERE WE GO NEXT

LOCKING IN LONGEVITY OF CLIMATE ACTION.

Durability of the Climate Action Plan depends on the breadth and strength of partnerships built beyond a single federal or state administration. Though progress has been made to advance collaboration and partnership strategies, further action and commitment is needed to engage with a range of stakeholders and Louisiana communities. Of particular importance is stronger engagement with local governments and disadvantaged communities to ensure that federal resources are accessible and provide realized benefits. Often, well-resourced communities perpetuate a cycle of receiving greater resources, while underserved communities do not have the resources or capacity to compete for funds. Through the establishment of the Louisiana Infrastructure Technical Assistance Corporation (LITAC), the state seeks to break this cycle by supporting local governments in grant writing, technical assistance, and non-federal grant matches. The State Legislature provided $20 million in funding to the Louisiana Municipal Association and the Louisiana Police Jury Association for formation of the LITAC in the 2022 Legislative Session. This corporation offers a unique opportunity to support locals and establish a model as to how the state can support its political subdivisions and communities.

Successful implementation of the Climate Action Plan has been the focus of workshops throughout 2022. Photo by Office of the Governor


Workshops engaging state agency leaders have resulted in proposals for federal funds that could bring hundreds of millions of dollars to Louisiana. Photo by Warren Photography for CPEX

GOVERNOR'S OFFICE OUTREACH: GOVERNOR EDWARDS, HIS STAFF, AND STATE AGENCY LEADERS HAVE SPOKEN AT THE FOLLOWING EVENTS ABOUT CLIMATE ACTION IN 2022.

- Louisiana Association of Conservation Districts Conference – February 11-15
- Tulane Environmental Law Summit – March 11-12
- Tulane Energy Law Conference – April 7-8
- Tulane Coastal Law Seminar – April 21-22
- The Gulf of Mexico Conference – April 25-28
- The National Energy and Utility Affordability Conference – June 27-30
- New Orleans River Fest – July 23
- National Governors Association Energy Resilience Learning Lab – July 26
- Global Clean Energy Action Forum – September 21-23
- Gulf Coast Power Association Conference – October 4-5
- Young Energy Law Professionals Conference – October 5-6
- Hydrogen Americas Summit – October 10-11
- Carbon Capture Coalition Meeting – October 25
- Carbon Management Action Network Launch – October 26
- Industrial Innovation Initiative (I3) Conference – October 27
- United States Climate Alliance Semi-Annual Governors' Office Meetings – October 29-November 4
- Environmental and Health Council of Louisiana Conference – November 10
- The National Association of Regulated Utility Commissioners – Department of Energy Workshop – November 16
- The Louisiana Resilience Summit – November 16
- ResCon International – December 4-6

ACCOUNTABILITY AND ADAPTABILITY TO ENSURE LASTING SUCCESS

Implementing climate action is an ongoing process that will not be fully realized in only one year. Changes in political administrations, funding opportunities, technological breakthroughs, and macroeconomic conditions can all necessitate changes in planning and the actions deployed to meet demand of the transition. Active progress by the state to advance long-term accountability and adaptability will help ensure that the GHG Inventory and Climate Action Plan can be updated on a regular basis as informed by the most updated action and science.

State leadership is paramount for successful implementation of the Climate Action Plan. Photo by Felix Mizionikov / Adobe Stock

FIRST YEAR PROGRESS

LOUISIANA IS COMMITTED TO CLIMATE ACTION.

When Governor Edwards signed the executive order committing Louisiana to net zero by 2050 and establishing the Climate Initiatives Task Force, the executive order set an imperative for the Task Force to meet at least annually and submit an annual report to the Governor on the status of climate action implementation. Since approval of the Climate Action Plan in February of 2022, the Task Force has met quarterly to receive and share updates as well as to coordinate work throughout state government, the private sector, and communities. Quarterly meetings further advance the Task Force mission of transparency and continued public engagement alongside biannual workshops hosted by the Governor's Office. Since February, a spring (March 23) and a fall (November 4) workshop have been held to educate, engage, and coordinate across the Task Force, Committee and Advisory Group members, and participants of the public in implementation of the Climate Action Plan as well as the IIJA and IRA.

Alongside regular and transparent engagement through the Task Force, Governor Edwards continues to promote and advance the climate action priorities of Louisiana. He participated in many panels and events during the UN Climate Change Conference (COP26) in Glasgow, Scotland, in November 2021, putting Louisiana on a world stage for climate action. Governor Edwards has also attended numerous events to speak about statewide climate efforts. The Governor and his staff are also active members of the United States Climate Alliance, an alliance of 24 governors that provides policy guidance and resources for taking impactful climate actions to address GHG emissions.

METRICS WILL LEAD IN TRACKING AND ACCOUNTABILITY OF CLIMATE ACTION.

Advisory Groups of the Task Force identified metrics as an effective mechanism to ensure long-term accountability and transparency in implementation of climate action and alignment with fundamental objectives outlined in the Climate Action Plan. With support from the Data Center of the Southeast, the Governor's Office is leading a multi-stakeholder effort to develop metrics that track how climate action implementation impacts equity over time. Building on the three equity fundamental objectives, this effort seeks to hold the wide range of climate action implementers accountable to unified and clear indicators that represent Louisiana-specific needs and opportunities to create greater equity. The first phase of this effort seeks to uncover and represent the select indicators of choice, and subsequent phases will seek to build a singular platform or process for assessing equity in action implementation.

WHERE WE GO NEXT

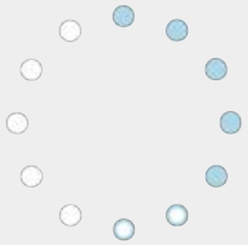
ADVANCING STATE LEADERSHIP THROUGH AGENCY ACTION.

As noted in the Implementation Matrix of the Climate Action Plan, many climate actions depend on state agency leadership to advance implementation, whether through legislation, regulations, or guidance policies that close loopholes, establish new programs, or reduce barriers to site and permit clean energy. Since March 2022, the Governor's Office has met more than 20 times with implementing agencies to consider and evaluate how the state can most effectively implement actions in the plan. Priority policies include reducing methane emissions, incorporating climate mitigation into agency actions and decisions, state procurement of low and no carbon products, and conducting additional planning and research studies to facilitate implementation of climate actions. Near-term policy levers employed by the state can provide longevity of climate priorities across future state Administrations. Initial outputs from this interagency partnership are anticipated in the beginning of 2023.

State agencies have worked together to align on implementation. Photo by CPEX

ACTION TRACKING

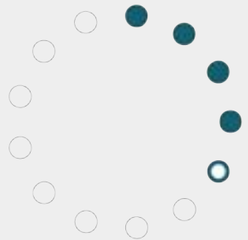
- IN PROGRESS
- WITH PREPARATORY WORK UNDERWAY
- NOT YET BEGUN



CLEAN ENERGY TRANSITION

5 OF 12 IN PROGRESS

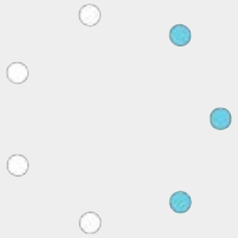
2 OF 12 WITH PREPARATORY WORK UNDERWAY



INDUSTRIAL DECARBONIZATION

4 OF 13 IN PROGRESS

1 OF 13 WITH PREPARATORY WORK UNDERWAY



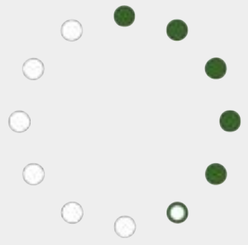
ACTIVELY MANAGE METHANE EMISSIONS

3 OF 7 IN PROGRESS

TRANSPORTATION, DEVELOPMENT, AND THE BUILT ENVIRONMENT

12 OF 23 IN PROGRESS

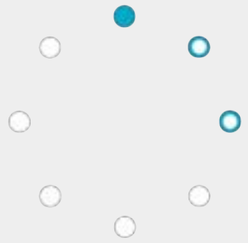
2 OF 23 WITH PREPARATORY WORK UNDERWAY



NATURAL AND WORKING LANDS AND WETLANDS

5 OF 12 IN PROGRESS

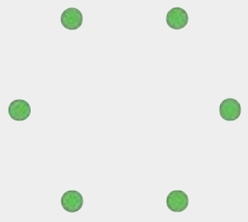
1 OF 12 WITH PREPARATORY WORK UNDERWAY



AN INCLUSIVE, LOW-CARBON ECONOMY

1 OF 8 IN PROGRESS

2 OF 8 WITH PREPARATORY WORK UNDERWAY



COLLABORATION AND PARTNERSHIP TO ENSURE SUCCESSFUL IMPLEMENTATION

6 OF 6 IN PROGRESS

ACCOUNTABILITY AND ADAPTABILITY TO ENSURE LASTING SUCCESS

1 OF 9 IN PROGRESS

1 OF 9 WITH PREPARATORY WORK UNDERWAY

ACCELERATING CLIMATE ACTION

From the local level to the state level, Louisiana is committed to climate action. Federal investments are making it possible for more people to participate, and new economic opportunities from the energy transition are benefiting Louisiana's businesses and workers. But while there has been so much progress in the first year of the Climate Action Plan, there is a long way to go. Unlocking larger emissions reductions will require technical, regulatory, corporate, political, and public commitment to transform Louisiana into a global leader for climate action. Moreover, the pace of climate science is rapidly accelerating to fill known knowledge gaps, including those related to carbon cycling within Louisiana's abundant natural lands and coastal ecosystems. As markets develop and investments increase for renewable power, distributed energy resources, clean hydrogen, and other low-carbon fuels and vehicles, technology gaps and regulatory barriers will change, necessitating close engagement and continued flexibility of scientific and governmental partners. Non-governmental and community-led organizations and the private sector should be strategic partners every step of the way to ensure accountability to meaningful community benefits and an equitable energy transition. In 2023, Louisiana will continue to aggressively pursue funding to reduce the state's greenhouse gas emissions; work to ensure that state policies and regulations reduce barriers to and work to achieve net zero; and engage and empower people and organizations outside of state government as ambassadors and implementers of the Climate Action Plan.

Louisiana has a unique opportunity to improve the state's health, economy, environment, and leadership through coordinated action to implement the Climate Action Plan and achieve net zero emissions by 2050. Unprecedented federal resources, unified state action, and strong collaborations will catalyze climate action and lead us into a future that is cleaner and stronger for all Louisianans.

Students and teachers touring the Louisiana Solar Energy Lab have a front seat to the state's clean energy research. Photo by University of Louisiana at Lafayette

ACKNOWLEDGEMENTS

We wish to acknowledge and appreciate the contributors to this Louisiana Climate Action Plan Annual Report for their leadership, expertise, collaborative spirit, and ongoing commitment to climate action. We express great thanks to residents, organizations, institutions, companies, universities, and state agencies who shared their time, ideas, and continued engagement in development of this Annual Report. The Office of the Governor, Coastal Activities (GOCA) developed and led the visioning process for this report with technical and planning support from The Water Institute. Core Planning Team Members who contributed to this report include Lindsay Cooper, Olivia Ledet, and Harry Vorhoff from GOCA, and Allison DeJong, Colleen McHugh, Erin Kiskaddon, Dexter Ellis, and Alyssa Dausman from The Water Institute. We also acknowledge and appreciate additional staff of GOCA and The Water Institute who supported this effort. Support from The Water Institute was made possible through the RESTORE Council's Comprehensive Plan Commitment and the Coastal Protection and Restoration Authority.

TASK FORCE MEMBER LIST

Chip Kline, Executive Assistant to the Governor for Coastal Activities, Task Force Chair

Designee: **Harry Vorhoff**, Deputy Director, Governor's Office of Coastal Activities

Gregory M. Bowser, President and CEO, Louisiana Chemical Association

Laura Beauchamp, Director of Resource Planning and Market Operations at Entergy, as a representative of an electric utility

Dr. Chuck Brown, Secretary, Louisiana Department of Environmental Quality

Designee: **Bliss Higgins,** Assistant Secretary, Office of Environmental Sciences

Dr. Virginia Burkett, Chief Scientist for Climate and Land Use Change at the United States Geological Survey, as a nonvoting representative of a federal scientific agency

Selby Bush, designee for the Louisiana Speaker of the House Clay Schexnayder

Dr. Terrence Chambers, Director of the Energy Efficiency and Sustainable Energy Center at the University of Louisiana at Lafayette, as a member of Louisiana's academic community

Flozell Daniels, CEO of the Mary Reynolds Babcock Foundation, as a member with experience in community development and engagement

Jay Dardenne, Commissioner of Administration, Division of Administration

Designee: **Mark Moses**, Assistant Commissioner, Facility Planning & Control

Karen Gautreaux, State Director for Louisiana at the Nature Conservancy, as a member of the environmental nonprofit community

Tyler Gray, Director of Corporate and Government Affairs, Placid Refinery

Bren Haase, Executive Director, Coastal Protection and Restoration Authority

Timothy Hardy, Breazeale, Sachse & Wilson, L.L.P., designee for Louisiana Senate President Page Cortez

Thomas Harris, Secretary, Louisiana Department of Natural Resources

Designee: **Jason Lanclos**, Director, State Energy Office

Camille Manning-Broome, President and CEO of the Center for Planning Excellence, as a member at-large

Chief Shirell Parfait-Dardar, Tribal Chief of the Grand Caillou/Dulac Band of the Biloxi-Chitimacha-Choctaw, as a member of an indigenous tribe, nation, or community

Colette Pichon Battle, Executive Director of Taproot Earth, as a member of the environmental and climate justice community

Don Pierson, Secretary, Louisiana Economic Development

Designee: **Brad Lambert**, Deputy Secretary, Louisiana Economic Development

Bill Robertson, designee of Public Service Commissioner Foster Campbell

Jeff Schwartz, Director of Economic Development for the City of New Orleans, as a representative of local government perspective

Mike Strain, Commissioner, Louisiana Department of Agriculture and Forestry

Designee: **Joey Breaux**, Assistant Commissioner, Office of Soil and Water Conservation

Dr. Shawn Wilson, Secretary, Department of Transportation and Development

Designee: **Dr. Eric Kalivoda**, Deputy Secretary, Department of Transportation and Development

Robert Verchick, Gauthier-St. Martin Eminent Scholar and Chair in Environmental Law at Loyola University New Orleans, as a member with special qualifications and experience in climate change policy

Photo by Office of the Governor

Photo by Coastal Protection and Restoration Authority

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Photo by Patrick M Quigley


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GOVERNOR JOHN BEL EDWARDS