

WORKPLAN

1. OVERALL PROJECT SUMMARY AND APPROACH

In a statewide coordinated effort across government agencies, industry, research institutions, and community-led organizations, the State of Louisiana will launch a transformative Comprehensive Actions to Reduce Emissions (CARE) Initiative to accelerate greenhouse gas (GHG) reductions across top ranking U.S. carbon-intense sectors with the strategic deployment of eight novel and viable GHG reduction measures as top priorities based on the Louisiana Priority Climate Action Plan (PCAP). The Louisiana CARE Initiative is focused on advancing electrification and decarbonization solutions in the hard to abate sectors as replicable models to be scaled up across Louisiana and the U.S. as pathways to commercial viability necessary to accelerate carbon reductions over the next decade and achieve net zero emissions by 2050. Embedded in each of the Louisiana GHG reduction measures are efficient strategies to deliver immediate and long-lasting benefits to 2.28 million low-income and disadvantaged populations most vulnerable to climate threats and at-risk from GHG emissions from heavy industrial clusters. The CARE Initiative will be led by the Louisiana Department of Energy and Natural Resources (LDENR) and be integrated with existing federal and state awarded programs to leverage resources to maximize measurable long-lasting outcomes. The CARE Initiative will launch a diversified and complementary suite of innovative GHG reduction measures and bring tremendous benefits to Louisiana communities through high-quality job creation, significant reductions of toxic air pollutants, community resilience measures, and enhanced quality of livelihoods. The first-of-a-kind CARE initiative is a cross-sector collaboration among government, industry, non-profits, and communities across the sixty-four parishes.

Core Principles. The CARE Initiative is based on four core principles:

1. Stimulate new private investment and public-private partnerships to create sustainable markets.
2. Strengthen the State's U.S. and global competitiveness for low- and no-carbon technologies.
3. Address the largest source of GHG emissions in the State – the industrial sector – and prioritize the reduction of local health impacts and community benefits.
4. Integrate resilience into all strategies and investments to address the unique vulnerabilities the State of Louisiana faces to extreme weather events.

The Approach. The CARE Initiative is designed to be threaded across the Louisiana BIL, IRA , and state programs to gain synergies, maximize GHG emission reductions, and drive greater community benefits, primarily to low-income and disadvantaged communities (LIDAC) most vulnerable to climate threats and toxic air pollutants. Louisiana's approach will include in each GHG reduction measure the following:

- Public-private partnerships and cross-sector collaborations to achieve commercial viability.
- Just and equitable workforce development strategy for a robust pipeline of high-quality jobs.
- Transformative community benefits plan to enhance the quality of livelihoods.

The Impact. Building upon the success of the Louisiana PCAP, the State alongside public-private stakeholders and communities is prioritizing GHG reduction measures the generate the greatest societal and economic impacts and accelerates viable pathways to commercialization over the next decade. The CARE Initiative is a comprehensive plan focused on clean energy acceleration, industrial decarbonization, port carbon-free resiliency, and nature-based solutions in the most carbon-intensive region of the nation across electric power, transportation, and industry, and agriculture sectors. Louisiana is uniquely positioned to launch a portfolio of diversified and complimentary projects while addressing its historic social and economic inequities of the 2.88 million LIDAC population.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Meeting CPRG Goals

Louisiana is graciously requesting once-in-a-generation funds alongside the State's major regional industrial and energy stakeholders sharing the commitment to accelerate electrification, decarbonization, and nature-based solution investment. The CPRG Implementation Grant will implement eight priority GHG reduction measures included in the PCAP that meet the needs of our communities and drive commercialization viable pathways to a net zero future for Louisiana.

Table 1.0 CARE Initiative GHG Reduction Measures

| |
|--|
| GHG Measure 1. Clean Hydrogen Economy |
| A new initiative to spur a statewide hydrogen economy as a global competitive advantage and deploy a suite of projects on hydrogen production and downstream end-use with industry and communities. |
| GHG Measure 2. Industrial Decarbonization |
| Deploy an industrial decarbonization program to meet the marginal price difference on energy efficiency, decarbonization technologies at top emitting natural gas plants and industrial facilities. |
| GHG Measure 3. N₂O Abatement |
| Coordinate with industry on the deployment of viable N ₂ O abatement strategies at fertilizer production facilities to gain significant reductions of a three-hundred times more toxic air pollutant than CO ₂ . |
| GHG Measure 4. Resilient Clean Ports |
| Launch a first-of-a-kind initiative to accelerate more abundant clean energy across the thirty-two ports in Louisiana as a vital link in the global supply chain and to mitigate climate risks for Gulf Region ports. |
| GHG Measure 5. Port Buffer Zone Program |
| Create a buffer zone program at ports to deploy natural vegetation that provides wildlife habitats, reduces air pollution impacts on nearby communities, and acts as a natural flood mitigation measure. |
| GHG Measure 6. Sustainable Agriculture |
| Stand up a framework to spur sustainable agriculture practices and support farmers in the transition to reduce crop burns, enhance soil carbon management, and integrate natural biological cycles. |
| GHG Measure 7. Clean Energy Acceleration |
| Launch a self-sustaining clean energy acceleration strategy for the Louisiana Gulf Coast region focused on creating viable market mechanisms and removing market barriers with smart policy measures. |
| GHG Measure 8. Nature-Based Solutions |
| Launch innovative nature-based solutions to sequester carbon from Louisiana wetlands, increase vegetation in parishes to reduce heat island effects, and support climate-vulnerable LIDAC populations. |

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Outsized Need. Louisiana's leading industries represent 94% of the state's industrial GHG emissions across chemical manufacturing, petroleum, coal, and natural gas sectors as the economic backbone of our nation and collectively producing nearly 61 million MT CO₂e emissions, ranking Louisiana highly across the nation in GHG emissions. Louisiana as a global energy leader with abundant natural resources, critical infrastructure assets, major water ports, robust energy networks, major industrial sites, and a highly skilled workforce is well-positioned to tackle the hard-to-abate sectors and lead the nation in GHG emission reductions with breakthrough technologies and nature-based solutions. The State of Louisiana is eager and fully committed to catalyzing public-private sector collaborations needed to spur capital investments towards the development of our nation's hydrogen and fuels network, industrial decarbonization, port electrification, and impactful nature-based solutions across the State's sixty-four parishes, thirty-two ports, four Tribal Nations, and 2.88 million LIDAC population. The opportunity is now to launch the first-of-a-kind CARE Initiative alongside the private sector and communities to accelerate pathways to a net zero future for Louisiana and our nation as a global competitive advantage, national energy security priority, and economic development opportunity.

Closing the Funding Gap. The State of Louisiana has proactively secured \$10.7 billion¹ in BIL and IRA funding with novel cost share options from cross-sector collaborators. However, the State is home to the largest carbon-emitters in the nation representing trillions of investment base, and the \$10.7 billion has its limits to truly spark the investment needed towards new and expanded GHG reduction measures that would not occur without CPRG funds. Louisiana has strategically designed the CPRG GHG reduction measures in collaboration with industry to spur public and private capital investments towards transformative GHG emission reduction measures to be scaled as commercially viable across carbon-emitting sectors while preserving natural ecosystems to accelerate net zero pathways over the decade.

Addressing Community Needs. Louisiana has a LIDAC population of 2.28 million and a total population of 4.6 million prompting the need for impactful community benefits embedded in the CARE Initiative and integrated across Louisiana BIL and IRA programs to best serve half of Louisiana who are exposed to climate hazards and suffer from concentrated GHG emissions. Since 2005, Louisiana has experienced fourteen hurricanes and tropical storms resulting in serious damage. Without the funding opportunity offered by the U.S. Environmental Protection Agency (EPA) CPRG Program, Louisiana's economy and its communities will continue to face climate-related risks and incur costly social economic damages.

Transformative Impact

The CARE Initiative is a proactive strategy to leapfrog forward GHG reduction measures across heavy carbon-emitting sectors, spur high-quality job creation, foster community resilience, and significantly improve the quality of livelihoods in LIDAC communities at-risk of GHG pollutants. The CARE Initiative is delivering transformative impacts through the launch of eight comprehensive and complimentary GHG measures that will stimulate private investment to accelerate carbon neutrality globally:

- Spur hydrogen development across production, end-uses, and supply chains.
- Tackle the hard-to-abate industrial sectors with electrification solutions.
- Pioneer N₂O abatement technologies at fertilizer producing facilities.
- Accelerate port electrification infrastructure to enable ZE equipment rapid adoption.
- Invest in nature-based solutions to mitigate climate risks in urban heat and flood prone regions.
- Catalyze clean power generation for the Gulf coast region.
- Deploy innovative, science-based strategies to sequester carbon from natural environments.
- Deliver immediate and long-lasting community health benefits and high-quality jobs.

¹ <https://infrastructure.la.gov/>

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Anticipated Timing and Milestones

The Louisiana CARE Initiative's eight GHG reduction measures are implementation ready programs or initiatives with the authority to implement. The State has adopted a prudently responsible timeline to minimize program delay risks, effectively leverage existing programs, meet the GHG reduction targets, and successfully achieve the program objectives on time and budget over the 5-year award period.

Figure 1.0 Louisiana CARE Initiative Timeline



Assumptions and Risks

Two key assumptions pertaining to CPRG Program Goals and Objectives:

- **Complementary Programs.** Based on preliminary due diligence, the State has identified existing federal and state funded programs assumed to be a strategic fit. The new and expanded CPRG GHG reduction measures threaded with existing programs will produce meaningful synergies aligned with the CPRG program objectives that will produce greater GHG reduction measures and community benefits. During the blueprint phase 2024-2025, a more in-depth assessment will be performed with a sound strategy for the CPRG program, integrating the existing programs into the CARE initiative for a holistic and integrated statewide GHG reduction strategy.
- **Access to Incentives.** The State assumes Inflation Reduction Act tax credits and other state incentive programs will be accessible to the suite of GHG reduction measures.

The risks associated with the CARE Initiative are associated with project delays and supply chain constraints. The CARE Initiative has a year-long planning phase to minimize project development risks.

Key Tasks and Features

1. Clean Hydrogen Economy (PCAP pp.42-51)

Major Features: The State will launch its portion of a new national hydrogen-centric coalition under development to spur a globally competitive U.S. hydrogen economy market. The State of Louisiana in collaboration with the private sector will deploy a suite of innovative hydrogen projects to accelerate low- and no-carbon hydrogen upstream production and downstream end-use as viable pathways to significantly reduce GHG emissions. The CARE Initiative will stimulate hydrogen economic development, innovation, and opportunity for Louisiana and spur a globally competitive U.S. energy ecosystem leveraging Louisiana's natural resources, skilled labor, strong public-private sector partnerships, and regional connectivity critical to achieve a commercially viable, self-sustaining hydrogen economy.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Tasks: Louisiana proposes to implement the following hydrogen measures as discussed in PCAP:

Task 1.0 Launch a regional Clean Hydrogen and Fuels Network.

- Perform data-driven studies for clean hydrogen production, midstream, downstream use, and supply chain on needs, existing infrastructure, and GHG reduction pathways.
- Develop a flexible and scalable blueprint for an investment-ready clean hydrogen and fuels network across production, midstream, downstream use, and supply chain.
- Design a global export blueprint for the U.S. hydrogen and fuels network to international markets based on market demand, geopolitical landscape, and GHG reduction pathways.
- Create the hydrogen export plan across the thirty-two ports as a global competitive advantage.
- Develop a viable hydrogen supply chain strategy to spur domestic manufacturing as a critical component to a national self-sustaining hydrogen economy and global hydrogen export market.
- Establish a specialized technical assistance function to remove market barriers with smart and seamless policy and regulatory measures, capture and share leading practices, facilitate public-private partnerships, and create linkage across regional hydrogen programs.
- Coordinate with the Louisiana electric utilities to reduce GHG emissions, improve energy reliability, and strengthen resilience with hydrogen production, end-use and storage projects.

Task 1.1 Deploy innovative **Hydrogen Upstream Production**² projects through a competitive solicitation process aligned with industry investment appetite and community as replicable and scalable solutions:

- Install new generation carbon-free hydrogen boilers and electrolyzer units as primary district energy systems with on-site clean power generation for clean and resilient sites.
- Install multi-faceted hydrogen production projects utilizing steam methane reforming, biodiesel generators, and electrolysis units with on-site clean power generation.
- Deploy innovative hydrogen production pilots and demonstration projects aligned with goals.

Task 1.2 Deploy **Hydrogen Downstream Use** pilots through a competitive solicitation process:

- Prioritize and sequence the deployment of Zero-Emission Medium and Heavy-Duty Vehicle pilots at major freight hubs and corridors to spur the zero-emissions freight (ZEF) network.

Demonstration of Funding Need: The U.S. Department of Energy launched its Regional Clean Hydrogen Hubs Program through a competitive award process which prompted seventy-nine concept papers across the nation with down selections to thirty-three encouraged applications and ultimately only seven regional hubs were awarded \$7 billion of funds matched by \$43 billion from the private sector. The CPRG funds will be instrumental in helping close market gaps for Louisiana who did not receive any hydrogen hub funds. CPRG funds will stimulate private investment and strengthen the linkage between the DOE-fund hydrogen hubs and Louisiana to build a more robust, integrated U.S. energy ecosystem.

Transformative Impact: The portfolio of innovative clean hydrogen pilots will catalyze private investment towards: 1) the use of low and no-carbon hydrogen upstream production at high concentrated GHG emission sites, and 2) spur hydrogen downstream end-use needed for a statewide and national zero-emissions freight (ZEF) network for ZE medium and heavy-duty vehicle corridors. Transformative community benefits, high-quality jobs, and enhanced quality of livelihoods in LIDAC communities will be prioritized and delivered in the statewide hydrogen development effort.

² <https://www.energy.gov/eere/fuelcells/bipartisan-infrastructure-law-clean-hydrogen-electrolysis-manufacturing-and0#:~:text=This%20announcement%20represents%20the%20first,and%20%24500%20million%20for%20research%20h%20>

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

2. Industrial Decarbonization (PCAP pp.42-47)

Major Features: The State will launch a suite of industrial decarbonization innovative projects in coordination with federal and state incentives, through a new program to accelerate energy efficiency and innovative industrial decarbonization technologies in the hard-to-abate industrial sector.

Tasks: The State will deploy industrial decarbonization projects with a competitive solicitation process.

Task 2.1 Industrial Decarbonization.

- Adopt energy efficiency measures in chemical, refining, and other industrial facilities.
- Install hydrogen boilers, electrical boilers, or steam heat pumps at industrial sites.

Task 2.2 Industrial CCS.

- Deploy carbon capture and storage (CCS) as close as possible to 90% capture rate or higher at natural gas facilities, petroleum refineries, chemical plants, and other industrial sites.

Demonstration of Funding Need: GHG emissions from the industrial sector contribute an overwhelming 66% of the overall State of Louisiana's emissions compared to 17% of the U.S. contribution. The CPRG funding will make considerable strides in launching a first-of-a-kind industrial electrification program for the hard-to-abate industrial sector with a massive funding gap.

Transformative Impact: The State's decarbonization program will focus on the industrial clusters with the highest GHG emissions and greatest health hazards presented to the surrounding LIDAC populations. Throughout the PCAP process, the State of Louisiana engaged with industry to gain alignment on shared GHG reduction strategies, decarbonization technologies, cost-sharing arrangements, and embedded community benefits to achieve 90% to 100% in GHG emission reductions at major industrial sites. With the deployment of public-private sector capital investments towards industrial decarbonization technologies, Louisiana and the nation will be able to gain economies of scale in the industrial hard-to-abate sector beyond the CPRG Program as a self-sustaining market for current and future generations.

3. N₂O Abatement Innovative Pilot (PCAP pp.42-46)

Major Features: The State will launch first-of-a-kind N₂O abatement pilots and market mechanisms.

Tasks: Create a viable program to deploy and scale N₂O technologies at fertilizer production facilities.

Task 3.1 N₂O Abatement Technologies.

- Deploy secondary N₂O abatement pilots with the installation of catalyst beds within existing nitric acid reactor to eliminate N₂O emissions ranging from 50-70% at targeted facilities.
- Deploy tertiary N₂O abatement pilots with an end-of-pipe solution and reduce the injection system to eliminate up to 99% of N₂O emissions at targeted facilities.
- Support market mechanisms to spur private investment towards N₂O abatement technologies.

Demonstration of Funding Need: Tackling N₂O emissions for the industrial sector is cost prohibited, and the CPRG funds will enable industry to accelerate the adoption of N₂O abatement technologies.

Transformative Impact: The N₂O abatement innovative pilot will provide commercial viability pathways to reduce N₂O emissions that are approximately 300 times more potent than CO₂.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

4. Resilient Clean Ports Initiative (PCAP pp. 62-69, 34-37)

Major Features: Launch a resilient, clean, ports initiative for a holistic and integrated regional plan across the network of thirty-two ports to accelerate cleaner, abundant energy and community resilience to mitigate climate risks and significantly reduce GHG emissions for the Gulf Coast State.

Tasks: The State will launch a port initiative to accelerate more abundant clean energy across the thirty-two ports in Louisiana as a vital link in the global supply chain with on-site carbon-free 24/7 power with long duration energy storage technologies operating as a network of distributed energy resources.

Task 4.1 Port Shore Power Program.

- Perform a port power baseline and load growth assessment in coordination with utilities.
- Conduct energy audits to inform shore power and community resilient hub needs.
- Install shore power capacity at ports across Louisiana to reduce emissions from idling engines.
- Deploy electric upgrades and energy efficiency measures needed for shore power.

Task 4.2 Port Community Resilience Hubs.

- Develop a holistic and integrated investment-ready clean and resilient port investment strategy.
- Deploy community resilient hubs across the thirty-two ports as a network of distributed energy resources to strengthen energy security and operate at carbon-free emergency back-up power.
- Integrate and expand the Louisiana Hubs for Energy Resilient Operations (HERO) to the Louisiana ports to protect port communities during unplanned and extended power outages during extreme weather and natural disasters.

Demonstration of Funding Need: The Louisiana Ports initiative will thread all existing federal and state port programs, such as the Rebuilding America's Infrastructure with Sustainability and Equity (RAISE) program along with a coordinated regional port strategy to pursue the U.S. EPA Clean Ports Program. However, there remains a massive funding gap at ports to build the infrastructure needed to transition to Louisiana's thirty-two ports to carbon-neutral operations and CPRG funds will enable ports to accelerate GHG reductions with shore power projects and carbon-free and resilient power systems (HERO Hubs).

Transformative Impact: The ports initiative will provide a vital link in the global supply chain for clean hydrogen exports, help mitigate climate risks facing the Gulf Coast region, and activate private industry collaboration among port tenants, communities, utilities, research institutions, and others.

5. Port Buffer Zone Program (PCAP pp. 65)

Major Features: Create a port buffer zone program to preserve, restore, and maintain natural habitats as flood risk mitigation measures that also enhance biodiversity and increase access to green spaces.

Tasks: Restoration of natural vegetation near ports, providing wildlife habitat, port community recreation areas, and reducing air pollution impacts on nearby communities.

Task 5.1 Port Buffer Zone Program.

- Deploy, restore, and maintain natural vegetation near ports as flood mitigation measures.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Demonstration of Funding Need: Louisiana ports prone to hurricanes and tropical storms lack the funds needed to invest in nature-based infrastructure to mitigate flood risks and improve health conditions. The ports will leverage designated FEMA flood disaster acreage owned by regional government entities for the port buffer zone program to further the investment impact and provide natural recreation areas to benefit the health and wellbeing of port communities, predominantly LIDAC population.

Transformative Impact: Port buffer zones produce numerous benefits, including reducing carbon and co-pollutants, managing storm water, abating urban heat island effects, and enhancing the quality of livelihoods. For every \$1 million invested in urban forestry, an average of 25.7 jobs are supported.

6. Sustainable Agriculture Innovative Program (PCAP pp. 75-81)

Major Features: Stand up a framework to implement sustainable agriculture practices and support farmers in the transition to reduce crop burns, enhance soil carbon management, and integrate natural biological cycles.

Tasks: Deploy regenerative and natural sequestration practices to deliver ecological, economic, and health, safety benefits across farming communities, wetlands, and FEMA flood disaster regions.

Task 6.1 Sustainable Agriculture Innovation Program.

- Initiate measures to reduce prescribed burning of farming acreage, such as sugarcanes.
- Support research and adoption of biochar for agricultural application, gypsum recycling, sugar cane leaf residue feedstock, and other science-based sustainable agriculture solutions.
- Integrate Sustainable Agriculture cutting-edge research into agriculture technical education programs to train the next generation of farmers in sustainable practices.

Demonstration of Funding Need: While a large body of research suggests the commercial viability of certain Sustainable Agriculture practices, widescale implementation and adoption is inhibited by inertia among stakeholders and a lack of high-visibility pilot programs. State-led Sustainable Agriculture programs can seed future deployment of these practices, which have wide impact to the environment, resilience, sequestration, and public health.

Transformative Impact: Integrating more regenerative and sustainable agricultural practices provides an opportunity to reduce emissions and enhance the sequestration of working lands, as well as to offer countless other ecological, economic, health and safety benefits.

7. Clean Energy Acceleration (PCAP pp. 38-40)

Major Features: Launch a viable new strategy to unlock clean energy markets in the Gulf Coast region.

Tasks: Implement a viable strategy to enable the adoption of offshore wind and large scale solar with long duration energy storage technologies in the Gulf Coast region as a responsible shift from fossil-based power generation mix to carbon-free reliable power generation. The strategy will focus on removing market barriers to the scaled deployment of clean power generation.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Task 7.1 Clean Energy Acceleration

- Facilitate regional resource strategic planning among utilities, community partners, state agencies, Regional Transmission Organizers, Independent System Operators, rural electric cooperatives through the state's Interagency Grid Working Group.
- Create a flexible and scalable blueprint to increase new transmission capacity by 30% with optimal infrastructure development.
- Develop a Strategic Energy Plan based on changes in electric loads and new energy generation, such as from offshore wind and large scale solar.
- Support active transmission infrastructure development projects to increase clean energy access and grid resiliency in LIDAC communities and areas vulnerable to multi-hazard threats.
- Implement new technologies to streamline the pipeline of projects and provide transparency.
- Modernize and coordinate permitting and siting for clean energy projects within the Louisiana Department of Environmental Quality and the Louisiana Department of Natural Resources
- Provide technical assistance to clean energy stakeholders for navigating the project pipeline.

Demonstration of Funding Need: Louisiana's transmission grid is aging with few current projects, leaving infrastructure unprepared for offshore and solar power distribution. Recent storms have demonstrated the climate-related vulnerability of various LIDAC populations' energy infrastructure. Without power infrastructure prepared to distribute clean energy, new generation projects will be "stranded" by a power grid currently oriented for legacy generation sources.

Transformative Impact: The combination of clean energy acceleration priorities and projects will provide long-term guidance for capital investments in the clean energy sector. This necessary step will empower all other aspects of the State's Climate Priority Action Plan and carries the ability to transport clean energy more efficiently and equitably across Louisiana and neighboring states.

8. Nature-Based Solutions (PCAP pp. 82, 85, 75-78)

Major Features: Utilize innovative, nature-based solutions to sequester carbon, engage industry partners, and support climate-vulnerable LIDAC populations.

Tasks: Partner with the scientific community and local partners to support groundbreaking nature-based solutions.

Task 8.1 Blue Carbon Research and Accreditation

- Augment Louisiana's current scientific research to quantify and further understand the potential for restored wetlands to sequester carbon.
- Seek accreditation of Louisiana-based public and private wetlands restoration projects in reputable and widely utilized carbon markets.
- Partner with Louisiana-based and global GHG emitters to promote Blue Carbon projects in Louisiana as a means of mitigating past and current GHG emissions and close the funding gap of Louisiana's Coastal Master Plan.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Task 8.2 Community Forestry and Greening

- Deploy modern satellite thermal technology and predictive modeling to identify urban LIDAC populations most vulnerable to impacts from extreme heat instances driven by climate change.
- In the identified vulnerable areas, support native and climate-resilient tree planting.

Demonstration of Funding Need: Louisiana has spent \$3 million studying the carbon sequestration potential of blue carbon projects. Results suggest that blue carbon credits can generate hundreds of millions of net new dollars for the State's Coastal Master Plan implementation, but further research is necessary to attain accreditation. Louisiana's Department of Health reported 25 deaths resulting from excess heat in 2023, and the number of days above 95 degrees Fahrenheit has increased by 20 days annually since 1970.

Transformative Impact: Quantifying the carbon sequestration potential of Louisiana's wetlands will result in significant net new dollars flowing into Louisiana's climate-vulnerable coast. The protected wetlands will in turn protect nature-based infrastructure and communities most vulnerable to severe weather events. Identifying the most critical areas for urban forestry and greening projects will allow the State to deploy investments, most efficiently, towards nature-based solutions that deliver the greatest benefit to LIDAC populations.

Multi-State Collaboration

The State of Louisiana has joined the SxSW Industrial Innovation Coalition uniting Colorado, Louisiana, Oklahoma, and Texas to launch a first-of-its-kind CPRG implementation multi-state program supporting investments in innovation at industrial and manufacturing facilities complimentary and additive to the Louisiana stand-alone, CARE Initiative. As put forth in the Louisiana PACP in Appendix B Louisiana Greenhouse Gas Inventory, Louisiana's most carbon-intense sector is industrial with annual total emissions of 130.21 MMTCO₂ E in 2020 and the top 20 Louisiana industrial facilities currently emit around 61 Mt CO₂e per year. The Louisiana CPRG program, CARE Initiative, and Louisiana's portion of the Multi-State CPRG Program, SxSW Industrial Innovation Coalition, will enable Louisiana to implement decarbonization technologies at more industrial sites, share leading practices, and catalyze more public-private partnerships with shared investment to industrial decarbonization.

The State of Louisiana provides assurances that CPRG funds will not be duplicable rather complimentary to generate greater outcomes and co-benefits for every \$1 of CPRG funds invested and matched by the private sector. Specifically, Louisiana as a member of the SxSW Industrial Innovation Coalition will run a competitive solicitation award process targeted at the hard-to-abate industrial sector to:

- Provide industrial and manufacturing facilities technical assistance in the form of zero-cost ASHRAE II assessments to help the facility identify cost-saving and innovative measures as well as funding opportunities to implement those measures, and
- Award grants to qualifying industrial and manufacturing facilities to reduce on-site emissions at 90% - 100% and generate co-benefits to LIDAC communities.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

2. IMPACT OF GHG REDUCTION MEASURES

Louisiana's net GHG emissions in 2018 were 216 MMT CO₂e and is significantly higher than the nation's emissions baseline as whole. In the United States, 17% of overall national emissions come from the industrial sector; in Louisiana, the industrial sector contributes an overwhelming 66% of emissions.

Louisiana's leading sectors in industrial CO₂e emissions include chemical manufacturing, petroleum, and coal (refining), and natural gas processing. Together, these three sectors make up 94% of the state's industrial CO₂e emissions. In 2019, Louisiana's top 20 industrial GHG emissions facilities produced approximately 61 Mt CO₂e annually, which is up nearly 30% from the GHG emissions of the top 20 industrial facilities in 2012.

The CARE Initiative is aimed at reducing GHG emissions at the top emitting CO₂e sites and prioritizing industrial clusters and ports to improve the health, safety, and air quality for LIDAC communities most vulnerable to climate threats in collaboration with the private sector. The State has structured its first-of-its-kind CPRG program to accelerate commercially viable electrification, decarbonization, and nature preservation pathways to achieve a net zero future for Louisiana by 2050.

a. Magnitude of GHG Reductions from 2025 through 2030

The CARE Initiative is a comprehensive set of innovative and scalable GHG reduction measures to significantly reduce GHG emission reductions in collaboration with investors, research institutions, industry, non-profit organizations, and communities. The magnitude of the GHG reductions for 2025 through 2030 generated from the first-of-its-kind Louisiana CARE Initiative is summarized below based on the PCAP methodologies, data, sources, assumptions, and results of quantitative assessments.

Table 2.0 Louisiana CARE Initiative GHG Emission Reductions 2025 – 2030 ³

| CARE Initiative | | GHG Reduction | PCAP |
|-------------------------------|---|-------------------------------|-------|
| GHG Reduction Measure | Work Plan Task | 2025-30 MMT CO ₂ e | Page |
| 1. Hydrogen Development | Task 1.0 Launch Regional Clean Hydrogen and Fuels Network | 19.25 | p. 14 |
| | Task 1.1 Hydrogen Upstream Production | 0.3 | |
| | Task 1.2 Hydrogen Downstream use | 0.0039 | p. 21 |
| 2. Industrial Decarbonization | Task 2.1 Industrial Decarbonization | 0.525 | p. 14 |
| | Task 2.2 Industrial CCS | 0.472 | p. 14 |
| 3. N ₂ O Abatement | Task 3.1 N ₂ O Abatement | 5.09 | p. 14 |
| 4. Resilient Clean Ports | Task 4.1 Port Shore Power | 1.38 | p. 26 |
| | Task 4.2 Port Community Resilience Hubs | 0.0011 | p. 7 |
| 5. Ports Buffer Zone Program | Task 5.1 Ports Buffer Zone Program | 0.0535 | p. 38 |
| 6. Sustainable Agriculture | Task 6.1 Sustainable Agriculture Innovation Program | 7.238 | p.36 |
| 7. Clean Energy Acceleration | Task 7.1 Clean Energy Acceleration | 0 | p. 6 |
| 8. Nature-Based Solutions | Task 8.1 Blue Carbon Research and Accreditation | 1.007 | p. 85 |
| | Task 8.2 Community Forestry and Greening | .00144 | p. 78 |

³ PCAP Appendix A: Priority Climate Action Plan: Quantitative Assessments.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

b. Magnitude of GHG Reductions from 2025 through 2050

Table 3.0 Louisiana CARE Initiative 2050 Strategy

The Louisiana CARE Initiative will result in a reduction of 236.3 MMT CO₂e by 2050.

| CARE Initiative | | GHG Reduction | Tech. App. |
|-------------------------------|---|-------------------------------|------------|
| GHG Reduction Measure | Work Plan Task | 2025-50 MMT CO ₂ e | Page |
| 1. Clean Hydrogen Economy | Task 1.0 Launch Regional Clean Hydrogen and Fuels Network | 96.25 | p. 2 |
| | Task 1.1 Hydrogen Upstream Production | 1.5 | p. 2 |
| | Task 1.2 Hydrogen Downstream use | 0.0196 | p. 2 |
| 2. Industrial Decarbonization | Task 2.1 Industrial Decarbonization | 2.625 | p. 4 |
| | Task 2.2 Industrial CCS | 2.3625 | p. 4 |
| 3. N ₂ O Abatement | Task 3.1 N ₂ O Abatement | 39.09 | p. 5 |
| 4. Resilient Clean Ports | Task 4.1 Port Shore Power | 13.38 | p. 6 |
| | Task 4.2 Port Community Resilience Hubs | 0.01 | p. 7 |
| 5. Ports Buffer Zone Program | Task 5.1 Ports Buffer Zone Program | 0.267 | p. 7 |
| 6. Sustainable Agriculture | Task 6.1 Sustainable Agriculture Innovation Program | 76.328 | p. 8 |
| 7. Clean Energy Acceleration | Task 7.1 Clean Energy Acceleration | 0.941 | p. 9 |
| 8. Nature-Based Solutions | Task 8.1 Blue Carbon Research and Accreditation | 5.038 | p. 10 |
| | Task 8.2 Community Forestry and Greening | 0.00432 | p. 10 |

c. Cost Effectiveness of GHG Reductions

Table 4.0 Louisiana CARE Initiative Cost Effectiveness

| GHG MEASURE | GHG REDUCTION | MEASURE COST | \$/TON CO ₂ e |
|---|------------------------------|---------------|--------------------------|
| GHG Measure 1. Clean Hydrogen Economy | 96.25 MMT CO ₂ e | \$113,437,440 | \$1.18 |
| GHG Measure 2. Industrial Decarbonization | 4.9875 MMT CO ₂ e | \$55,404,651 | \$11.11 |
| GHG Measure 3. NO ₂ Abatement | 39.09 MMT CO ₂ e | \$16,629,651 | \$0.43 |
| GHG Measure 4. Resilient Clean Ports | 13.39 MMT CO ₂ e | \$81,969,651 | \$6.12 |
| GHG Measure 5. Port Buffer Zone Program | 0.267 MMT CO ₂ e | \$21,029,651 | \$78.76 |
| GHG Measure 6. Sustainable Agriculture | 76.328 MMT CO ₂ e | \$7,829,651 | \$0.10 |
| GHG Measure 7. Clean Energy Acceleration | 0.941 MMT CO ₂ e | \$8,929,651 | \$9.49 |
| GHG Measure 8. Nature-Based Solutions | 5.042 MMT CO ₂ e | \$8,709,651 | \$1.73 |
| TOTAL | | \$313,940,000 | |

d. Documentation of GHG Reduction Assumptions

Refer to Appendix C.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

3. ENVIRONMENTAL RESULTS

Through its PCAP process, the State of Louisiana applied a strategic approach to identify gaps in GHG emissions reduction efforts and pathways and focused its PCAP and this implementation grant proposal on an output and outcomes-based approach to achieving its program goals. For each measure, the State has adopted the following framework: Tasks to address gaps >> Performance Measures & Outputs to track progress >> Outcomes (GHG Reductions) to measure impact. Additionally, the State will track performance measures across all tasks (as applicable) related to: Jobs created and locational criteria pollution reduction. Performance measurement will be incorporated into each initiative for each measure, tracked quarterly and annually (as applicable), with a final report identifying overall outcomes. The State expects it could launch all these initiatives by 2026, with measurable metrics and GHG emissions reductions able to be reported for the subsequent period.

Table 5. Performance Measures, Outputs and Outcomes

| GHG MEASURES | MEASURE OUTPUT | GHG REDUCTION | REPORTING |
|---|-----------------------------|------------------------------|-----------|
| GHG Measure 1. Clean Hydrogen Economy | | | |
| Task 1.1 Regional Clean Hydrogen Network | GHG emission reductions | 96.25 MMT CO ₂ e | 2027-2030 |
| Task 1.1 Hydrogen Upstream Production | GHG emission reductions | 1.5 MMT CO ₂ e | 2027-2030 |
| Task 1.2 Hydrogen Downstream Use | GHG emission reductions | 0.0196 MMT CO ₂ e | 2027-2030 |
| GHG Measure 2. Industrial Decarbonization | | | |
| Task 2.1 Industrial Decarbonization | GHG emission reductions | 2.625 MMT CO ₂ e | 2027-2030 |
| Task 2.2 Industrial CCS | GHG emission reductions | 2.3625 MMT CO ₂ e | 2027-2030 |
| GHG Measure 3. NO₂ Abatement | | | |
| Task 3.1 N ₂ O Abatement | N ₂ O reductions | 39.09 MMT CO ₂ e | 2027-2030 |
| GHG Measure 4. Resilient Clean Ports | | | |
| Task 4.1 Port Shore Power | GHG emission reductions | 13.38 MMT CO ₂ e | 2027-2030 |
| Task 4.2 Port Resilient Hubs | GHG emission reductions | 0.01 MMT CO ₂ e | 2027-2030 |
| GHG Measure 5. Port Buffer Zone Program | | | |
| Task 5.1 Port Buffer Zone Program | GHG emission reductions | 0.267 MMT CO ₂ e | 2027-2030 |
| GHG Measure 6. Sustainable Agriculture Program | | | |
| Task 6.1 Sustainable Agriculture Program | GHG emission reductions | 76.328 MMT CO ₂ e | 2027-2030 |
| GHG Measure 7. Clean Energy Acceleration | | | |
| Task 7.1 Clean Energy Acceleration | GHG emission reductions | 0.941 MMT CO ₂ e | 2027-2030 |
| GHG Measure 8. Nature-Based Solutions | | | |
| Task 8.1 Blue Carbon Accreditation | GHG emission reductions | | 2027-2030 |
| Task 8.2 Forestry and Greening | GHG emission reductions | 0.0043 MMT CO ₂ e | 2027-2030 |

Authorities, Implementation Timeline, and Milestones

Proposed tasks and initiatives within the identified five measures will build on existing infrastructure within Louisiana to implement and execute expeditiously. Establishment of proposed initiatives will require no statutory change, and limited regulatory intervention. State of Louisiana agencies, including LDENR, LDOTD, and Port Authorities, have existing grantmaking authority and complementary rules to uniformly implement competitive grant and incentive programs utilizing state and federal pass-through funds. No measure will require a legislative change or major rulemaking.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Table 6. CARE Implementing Agency, Tasks, Timeline and Milestones

| DEVELOPMENT | | IMPLEMENTATION | | | | | | |
|--|--------|--|--------------------|----|----|----|----|----|
| Initiative | Agency | Key Activity/Deliverable | Existing Authority | Y1 | Y2 | Y3 | Y4 | Y5 |
| GHG Measure 1. Hydrogen Development | | | | | | | | |
| Task 1.0 Clean Hydrogen Economy | LDENR | 4 Regional Studies on Hydrogen Value Chains; 2 Blueprints on Domestic and Global Markets; and Remove Market Barriers | Yes | | | | | |
| Task 1.1 Hydrogen Upstream | LDENR | 4 hydrogen production projects eliminate 90-100% GHG emissions | Yes | | | | | |
| Task 1.2 Hydrogen Downstream | LDENR | 16 hydrogen ZE-LMHDV fueling stations at all major corridors | Yes | | | | | |
| GHG Measure 2. Industrial Decarbonization | | | | | | | | |
| Task 2.1 Industrial Decarbonization | LDENR | 7 sites electrify heat processes eliminate 90%-100% GHG emissions | Yes | | | | | |
| Task 2.2 Industrial CCS | LDENR | 7 CCS at natural gas sites with 90% or higher capture rate | Yes | | | | | |
| GHG Measure 3. Industrial N ₂ O Abatement Pilot | | | | | | | | |
| Task 3.1 N ₂ O Abatement | LDENR | 3 sites install N ₂ O abatement technologies eliminate 70% -95% GHG emissions | Yes | | | | | |
| GHG Measure 4. Resilient Clean Ports Initiative | | | | | | | | |
| Task 4.1 Port Shore Power | LDENR | 1 Regional Shore Power Study, 32 shore power units at all 32 ports | Yes | | | | | |
| Task 4.2 Ports Resilient Hubs | LDENR | 1 Regional Microgrid Study, 32 microgrids each with 5MW solar and energy storage at all 32 ports | Yes | | | | | |
| GHG Measure 5. Port Buffer Zone Program | | | | | | | | |
| Task 5.1 Port Flood Mitigation | LDENR | Install 32 natural carbon sequestration utilizing buffer zones and Algae Bioreactors at all 32 ports | Yes | | | | | |
| GHG Measure 6. Sustainable Agriculture Market Development | | | | | | | | |
| Task 6.1 Land Restoration | LDENR | Reduce acreage burns with sustainable farming practices | Yes | | | | | |
| GHG Measure 7. Clean Energy Acceleration | | | | | | | | |
| Task 7.1 Clean Energy Acceleration | LDENR | Remove market barriers to enable 5MW offshore wind and 500MW large scale solar power generation | Yes | | | | | |
| GHG Measure 8. Nature-Based Solutions | | | | | | | | |

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

| | | | | | | | | | |
|------------------------------------|-------|--|-----|--|--|--|--|--|--|
| Task 8.1 Blue Carbon Accreditation | LDENR | 1 Regional Nature-Based Solution Plan; Carbon accreditation for wetlands and port buffer zones | | | | | | | |
| Task 8.2 Forestry and Greening | LDENR | 1 Regional LIDAC Greenery Plan; Tree planting and green spaces in LIDAC areas to mitigate climate risk | Yes | | | | | | |

Summary of Authority to Implement

Louisiana state agencies and political subdivisions have broad authority to engage in cooperative endeavors such as collaborative offshore wind and hydrogen programs.

City of New Orleans and other local governments. The City Council of New Orleans regulates the activities of Entergy New Orleans. The City of New Orleans is also a member of the GLOW Propeller, an offshore wind consortium which was designated as an EDA Tech Hub in October 2023. Local governments have broad authority to engage in planning and program development within their boundaries.

Department of Agriculture and Forestry. The DOA has existing offices, including the Office of Planning and Budget, that can engage with communities to build local capacity and co-create solutions. DOA's Office of Soil and Water Conservation has authority related to the soils and waters of the state and the Soil and Water Conservation Commission is authorized to work with Soil and Water Conservation Districts on related programs such as biochar development. DOA also has authority and existing programs for resilience planning and authority to provide planning support related to energy storage. DOA is authorized to certify projects for purposes of a tax credit for the construction, repair, or renovation of "green projects" at "green job industries."

Department of Energy and Natural Resources. LDENR has broad authority to contract for services and prepare and implement plans and programs related to protecting and replenishing the state's natural resources, preventing the waste of those resources, and implementing the state's energy policy. LDENR has specific authority to provide planning support related to energy storage and is a member of the GLOW Propeller, an offshore wind consortium which was designated as an EDA Tech Hub in October 2023. To address methane leakage, LDENR, through the Commissioner of Conservation, has the authority to make, administer, and enforce rules, regulations, and orders "[t]o require the plugging of each dry and abandoned well and the closure of associated pits, the removal of equipment, structures, and trash; and to otherwise require a general site cleanup of such dry and abandoned wells."

Department of Environmental Quality. LDEQ has statutory authority to develop regulations to limit emissions of air pollutants such as N₂O. An administrative fix would be required to enable a market mechanism to achieve long-term commercial viability of N₂O projects for the private sector.

Department of Transportation and Development. DOTD has existing authority and programs for emergency response and its Port Development programs have authority to assist with deployment of shore power, RAFTS and on-site renewables at ports.

Governor's Office. The Governor's Office of Homeland Security and Emergency Preparedness has authority and existing programs for resilience planning. The Governor's Office is also authorized to

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certify projects for purposes of a tax credit for the construction, repair, or renovation of “green projects” at “green job industries.”

Louisiana Economic Development. LED has existing programs, policies, and incentives to support economic development and is authorized to certify projects for purposes of a tax credit for the construction, repair, or renovation of “green projects” at “green job industries.” LED is a member of the GLOW Propeller offshore wind consortium, which was designated as an EDA Tech Hub in October 2023.

Louisiana Public Service Commission. LPSC regulates electric utilities, including but not limited to setting their rate base and other forms of compensation.

Louisiana Workforce Commission. LWC has existing programs, policies, and incentives to support economic development.

Port Authorities. Louisiana’s port authorities have authority to develop infrastructure projects such as shore power, on-site renewable energy, create buffer zones, move to no-emission equipment, and support mode shifting.

4. LOW-INCOME AND DISADVANTAGED COMMUNITIES

a. Community Benefits

LIDAC Communities. Nearly half of Louisiana's population of 2.28 million represent LIDAC populations through the parameters of the White House’s CEJST screening tool. Specifically, the CEJST screening tool identifies 642 census tracts in Louisiana as disadvantaged, 587 census tracts are at or above the 90th percentile for at least one of the CEJST screen supplemental categories, and 376 census tracts meet both criteria. Louisiana’s GHG emissions are dominated by the industrial sector predominantly located in three clusters along the Mississippi River between New Orleans and Baton Rouge, Southwest Louisiana around Lake Charles, and Northeast Louisiana around Shreveport. The census tracts identified through the CEHST analysis included those impacted by industrial emissions, as well as other census tracts in places in the Mississippi Delta (Northeast Louisiana) and many other rural stretches of the State.

Tribal Nations. Louisiana is home to four federally recognized tribes: the Jena Band of Choctaw Indians, the Tunica-Biloxi Tribe of Louisiana, the Coushatta Tribe of Louisiana, and the Chitimacha Tribe of Louisiana. The State’s regional coordination process engaged the Louisiana Tribal Nations to inform their needs and priorities reflected in the PCAP. The CARE Initiative will continue to collaborate with Tribal Nations on the implementation of the GHG reduction measures to advance their climate priorities.

Climate Threats. Louisiana’s Gulf Coast location and low-lying topography makes it uniquely vulnerable to climate hazards. Since 2005, Louisiana has experienced fourteen hurricanes and tropical storms resulting in serious damage and lost lives. Louisiana faces a complex and interrelated set of challenges from rising climate threats. Additionally, average and extreme temperatures are projected to increase, and heat waves are likely to become more severe impacting both demand and supply of electricity. Taken together, the trends will result in greater and disproportionate impacts to people, infrastructure, the economy, and quality of life. The map in PCAP on p.89 depicts the State’s climate hazard risks.

Community Benefits Focus. The Louisiana CARE Initiative is first and foremost focused on providing comprehensive community benefits comprised of four goals:

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Goal 1: Target communities most exposed to acute and chronic exposures by significantly reducing GHG emissions and increasing access to near-by green spaces.

Goal 2: Lower energy burdens and provide access to modernized clean energy to strengthen community resilience and solve energy insecurity challenges.

Goal 3: Grow an inclusive and skilled local workforce with high-quality paying jobs to meet the rapidly growing in clean energy and sustainability markets.

Air Quality and Public Health Improvements. The CARE Initiative is focused on improving public health and enhancing quality of life for populations most burdened by GHG emissions and other air toxins:

- Reduce GHG emissions at top-emitting facilities prioritizing industrial clusters and ports.
- Prevent methane leaks at wells, pipelines, landfills attributing to acute, chronic health impacts.
- Capture N₂O emissions approximately 300 times more potent than CO₂.

Improved Access to Services and Amenities. Improving quality of life for LIDAC populations by increasing access to near-by green spaces across state urban and rural regions as a priorities outlined in the Port Buffer Zone Program:

- Conserve, restore, and maintain hundreds of acres of fresh forested wetlands.
- Plant and maintain thousands of trees in LIDAC port communities.

Community Resilience. In 2021, the average customer in Louisiana experienced more than 80 hours of power outages during the year due to extreme weather, by far the highest in the country, well exceeding the national average of 7 hours per year. A recent study in Nature Communications showed that Louisiana experiences a dual burden of frequent outages longer than eight hours, high social vulnerability, and prevalence of electricity-dependent durable medical equipment use (Do et al, 2023). Data from previous events in Louisiana show that most deaths happen five to seven days after the actual storm, as carbon monoxide poisoning from generator use, heat stress from lack of air conditioning, and other factors compound. Improving energy reliability and community resilience, especially during extreme weather events and natural disasters, is a key priority of the Louisiana CARE Initiative and has designed GHG reduction measures accordingly:

- Expansion of Louisiana HERO Hubs to port communities most vulnerable to climate risks.
- Restoration of natural vegetation as climate mitigation actions in port communities.

Energy Cost Savings. The State is committed to energy burden alleviation to its 2.28 million LIDAC population. The State's Solar for All Program, pending award notification, developed strategies to achieve 20% energy savings and novel wealth generation financing programs benefiting low-income households. The CARE Initiative will build upon the set of energy cost saving strategies developed in the Louisiana Solar for All Program, HERO Program, and other existing state programs.

b. Community Engagement

PCAP Process. While developing PCAP, the State conducted numerous in-person and virtual community meetings in parishes and municipalities with the greatest GHG and co pollutant emissions concentrations and with strong LIDAC representation. During the public meetings, the State provided an overview of the 2022 Louisiana's Climate Action Plan, an introduction to the CPRG program, and a focus on regional conditions and opportunities. Throughout the presentation, communities were polled to understand needs, priorities of GHG reduction measures, and prioritize community benefits. The results of the PCAP community engagement discussions are reflected in the PCAP.

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Implementation. The Louisiana CARE Initiative prioritizes the most pressing community needs with an inclusive community engagement plan building upon the State’s PCAP and national leading Louisiana HERO Community Benefits Plan funded under the Department of Energy Grid Resilience and Innovation Partnership (GRIP) Program. The State will launch a first-of-a-kind Integrated Community Energy Planning (ICEP) process under HERO and integrate with the CARE Initiative across all GHG reduction measures for a holistic and integrated community benefits plan approach to leverage dollars and maximize community outcomes. The approach prioritizes community resilience, energy burden alleviation, greenhouse gas reductions, and public well-being and safety.

Community Engagement. DENR and its community engagement partners will continue to conduct community listening sessions to understand and address the community needs for GHG reduction measures, clean energy, and community resilience.

Table 7.0 CARE Initiative Community Benefits Milestones.

| Milestone Description | Milestone Verification | Milestone Date |
|---|-------------------------------------|----------------|
| Engage 64 parishes and 4 Tribal Nations | # of communities engaged | Q1 2026 |
| Reduce GHG emissions in LIDAC communities | GHG emission reductions in LIDAC | 2027 - 2029 |
| Increase access to green spaces | # of restored and conserved acreage | Q1 2028 |

5. JOB QUALITY

Job Creation. Increasing the number of training opportunities, quality high paying jobs, and small business growth opportunities are among key goals of the Louisiana PCAP and CARE Initiative. The CARE Initiative’s GHG measures have a potential to develop and maintain quality high paying jobs in LIDAC communities. The Initiative is estimated to support more than 600 jobs across a variety of jobs:

- Highly skilled labor needed to build the clean hydrogen economy across the market value chain.
- Plan, construction, and operate electrification processes and equipment at industrial sites.
- Work with utilities and community organizations to design and build community resilience hubs.
- Design, plan, construct, install, and maintain offshore wind energy projects in the Gulf region.
- Install shore power berths, on-site clean energy, and zero emission equipment at ports.
- Identify, monitor, and plug abandoned and orphaned wells to prevent methane leaks.
- Restore and preserve coastal wetlands as natural flood mitigation measures.
- Design, develop, and maintain accessible community green spaces and forestry areas.
- Coordination, development and implementation of sustainable agriculture practices.

Workforce Development: DENR alongside research institutions, educational partners and labor organizations will educate and engage communities on the GHG reduction measures, community resilience measures, localized clean energy benefits, and viable pathways to high quality jobs in the emerging fields, such as hydrogen, offshore wind, sustainable agriculture. Education sessions will seek to empower LIDAC populations to pursue workforce opportunities offered under the CARE Initiative.

Hiring Strategies. DENR will coordinate state universities, technical colleges, labor organizations, and workforce stakeholders to proactively engage communities in CARE workforce opportunities as pathways to high-quality local jobs in the rapidly growing clean energy and sustainability markets.

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Labor Agreements. DENR has long-standing working relations and is in good standing with local labor unions, specially the International Brotherhood of Electrical Workers, AFL-CIO America's Unions, and Louisiana Building & Construction Trades Council. The CARE Initiative will develop project labor agreements with local labor unions to provide quality jobs with prevailing wages, provide construction and other workforce opportunities with the deployment of the CPRG implementation projects across all eight GHG reduction measures. Additionally, the State will include requirements around Community Benefits Agreements in the competitive solicitation processes for local hiring and engagement.

Pay Quality. DENR has a strong track record of supporting infrastructure projects that provide quality pay and benefits to workers. DENR will commit to pay prevailing wages and follow Davis-Bacon requirements for the CARE Initiative CPRG implementation projects across all eight GHG reduction measures.

Table 7.0 CARE Initiative Community Benefits Milestones.

| Milestone Description | Milestone Verification | Milestone Date |
|---|--|----------------|
| Establish a goal that at least 25% of contractors are disadvantaged business enterprises | % of contract and subcontract value w/ DBEs in RFP | Q1 2027 |
| Create 600 new graduates of workforce training, pre-apprentice, and apprenticeship programs | # of graduates | Q2 2028 |

6. PROGRAMMATIC CAPABILITY AND PAST PERFORMANCE

a. Past Performance

Louisiana Department of Energy Natural Resources (LDENR)

LDENR has been engaged in the following federally funded efforts under the IRA and IIJA in the past three years:

- 1) **Grid Resilience and Innovation Partnerships (GRIP) Program (USDOE, Sec. 40103(b)):** In 2023, LDENR was successful in the pursuit of a grant from the US Department of Energy (DOE) for the Hubs for Energy Resilient Operations (HERO) Program, which will fund the creation of local resilience hubs. The HERO Program is integrated with other programs that support the transition to clean, reliable energy.
- 2) **Orphaned Well Site Plugging, Remediation, and Restoration (USDOI, Sec. 40601):** LDENR received \$25 million in initial grant funding to significantly augment the efforts of Louisiana's existing Oilfield Site Restoration (OSR) Program in addressing Louisiana's orphaned well sites. In 2023, LDENR plugged 636 wells.
- 3) **Grid Resiliency Formula Grants (USDOE, Sec. 40101(d))** In December 2023, LDENR has received an initial allocation of \$16 million in funding to support a new grid resiliency program within the State. The program will prioritize investments that reduce the impact of outages and extreme weather events in disadvantaged communities across the State.

Further, LDENR received direct allocations of American Recovery and Reinvestment Act (ARRA) funds for the State Energy Program (\$71 million), the Energy Efficiency and Conservation Block Grant Program (\$13.8 million), and the Save Energy Now Program (\$344,259).

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Louisiana Department of Agriculture and Forestry (LDAF)

LDAF has the authority to perform the functions of the state relating to soil and water conservation. The State Soil and Water Conservation Commission facilitates and guides the resource conservation programs and activities of Soil & Water Conservation Districts. LDAF connects farmers to conservation formula programs like the Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program (CSP). LDAF has broad authority to promote, protect, and advance agriculture and forestry in the state. LDAF is also authorized, in collaboration with the Board of Elementary and Secondary Education, to develop and implement a farm to school program, administered by the U.S. Department of Education, which includes a school garden program.

Louisiana Economic Development (LED)

LED mission is to cultivate jobs and economic opportunity for the people of Louisiana through nine integrated economic development strategies. With dedicated and knowledgeable professionals committed to Louisiana's economic future, LED strives to help businesses find the resources they need to make relocation and expansion a successful, profitable endeavor.

Coastal Protection and Restoration Authority (CPRA)

CPRA's mandate is to develop, implement, and enforce a comprehensive coastal protection and restoration Master Plan. For the first time in Louisiana's history, CPRG is integrating coastal restoration and hurricane protection by marshaling the expertise and resources of the Department of Natural Resources, the Department of Transportation and Development and other state agencies, to speak with one clear voice for the future of Louisiana's coast. CPRA was awarded \$5.49 million in funding through the America the Beautiful Challenge (ATBC) program and submitted NOAA Climate Resilience Regional Challenge proposals to strengthen community resilience across Louisiana's coastal communities.

National Fish and Wildlife Foundation (NFWF)

NFWF awarded nearly \$950,000 in grant funding to CPRA towards a Central Wetlands Restoration Project that could benefit a 16,000 acres area. CPRA funds bring the total project investment to \$1,089,400. The project is to alleviate impoundment and increase freshwater and sediment input, create a small-scale marsh and ridge restoration project, and plant native vegetation in collaboration with local partners.

Louisiana Outdoors Forever

During the 2022 legislative session, the Louisiana House of Representatives and Louisiana Senate passed House Bill 762, establishing the Louisiana Outdoors Forever Program and Louisiana Outdoors Forever Fund. The purpose of this program is to provide funding for outdoor conservation projects in the State of Louisiana. The fund for the Louisiana Outdoors Forever Program is established within the Louisiana Department of Wildlife and Fisheries. House Bill 406 passed through the 2022 legislative session which provides \$10 million in funding for the program's first year. Working through voluntary conservation measures, the program will help fund projects that protect drinking water supplies, conserve wildlife habitat, provide recreational opportunities in urban and rural areas, sustain working farms and forests, and much more.

b. Reporting Requirements

As a lead agency in implementing the above-mentioned HERO, Orphaned Wells and Grid Resilience Formula Grant award, LDENR has been building a successful track record of timely financial and

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

performance reporting and effective communication with the US DOE and the US Department of Interior (DOI) on these projects. LDENR also met all of the reporting requirements under ARRA agreements in an adequate and timely manner including reporting progress towards achieving expected outputs and outcomes of those agreements and submitting acceptable final technical reports under the agreements.

c. Staff Expertise

The Project Management Team will include distinguished individuals with tremendous experience and expertise in implementing and overseeing similar or comparative initiatives and project within the State of Louisiana, bios of each attached with the Other Attachment Form:

LDENR Applicant:

- **Tyler Gray, Secretary Louisiana Department of Energy and Natural Resources:** has previously served as president and general counsel to Louisiana Mid-Continent's Oil and Gas Association, an attorney to the Department of Natural Resources, Office of Conservation and for the City of New Orleans.
 - **M. Jason Lanclos, Director of the State Energy Office and Technology Assessment Division:** Since November 2018, Jason is LDENR representative on Governors Climate Task Force and Co-chair of LDENR pore space working group for CCUS and Executive Board Member of the National Association of State Energy Officials. Among other duties, Jason leads LDENR involvement with outreach and engagement with schools and universities on clean energy education; leads on Hydrogen and Carbon Capture Utilization and Storage; leads the policy initiative with Public Service Commission and Governor's office on Grid Modernization and Resiliency; and oversees staff working to provide information on and support emerging energy technologies.
 - **Edward O'Brien, Senior Economist, Energy Information Manager, LDENR State Energy Office.** Edward is leading the economics team within LDENR on oil and natural gas economic information development for the Secretary and Governor offices; manages LDENR projects and initiatives related to energy.
- Amanda McClinton, Business Analytics Specialist** with sixteen years of experience in state government and holds a Lean Six Sigma Black Belt Certification from Villanova University College of Professional Studies.

Key State Agencies:

- **Lakesha Hart, Louisiana Office of Planning and Budget** where she administers, directs, and coordinates a portfolio of state planning and policy initiatives. Lakesha is an engineer with over 19 years of project management experience in both the public and private sector, with demonstrated achievements in public administration, inter-agency coordination, research and policy formulation, program development and project implementation.
- **Brandon Frey, Louisiana Public Service Commission's Executive Secretary,** a position Brandon has held since December 2017. He has been employed with the Commission since April 1999, beginning as a staff attorney.

Ports:

- **L. Benny Russo, JR. Executive Director of the Central Louisiana Regional Port,** where he manages a top 100 ranked Inland River Port along the Red River System.
- **Greg Richardson, Port Director, Columbia Port Commission,** with over 25 years of experience as port director and demonstrated proficiency in both engineering and port management.

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- **Gary Lagrange, Port Advisor**, served as President and Chief Executive Officer of the Port of New Orleans 2001-2017. Under LaGrange’s direction the Port made great expansions in spite of great adversity. LaGrange’s leadership brought the Port of New Orleans back into operation two weeks after Hurricane Katrina.
- **Laura Hartt, Port Accountant**, is the CPA and Partner at David M. Hartt, a thriving public accounting practice in the Monroe/West Monroe/Ruston communities and surrounding areas. Prior to public practice, Laura served as the CFO for the City of Ruston, and Parish Treasurer for Lincoln Parish.
- **Chris E. Gilmore, PE, PMP**, Director of Engineering and Environmental at the Port of New Orleans.
- **Kylie Mills**, Communications & Community Engagement Manager | Port of New Orleans
- **Emily Federer**, Msph, Env Sp, Sustainability Manager At The Port Of New Orleans, New Orleans
- **Richert Leland Self**, CPA, MBA, Executive Director – Port of Lake Charles, Lake Charles, Louisiana

Educational and Research institutions:

- **Sunda-Meya Anderson**, Dean, College of Arts & Sciences at Xavier University of Louisiana, New Orleans
- **Jonathan R. Rausch**, Lee and Ken Matherne/BORSF Endowed Professor in Engineering, Mechanical Engineering Department
- **Mark E. Zappi**, Ph.D., P.E., Director of the Louisiana C1 Extension Service (LC1ES), BORFS Chaired Professor of Bioprocessing, Department of Chemical Engineering, UL, Executive Director of the Energy Institute of Louisiana, UL
- **Ouloide Yannick Goue**, Ph.D., Assistant Professor of Physics and Dual Degree Engineering Department at Xavier University of Louisiana, New Orleans.

7. BUDGET

a. Budget Detail

The Louisiana CARE Initiative Budget for the CPRG five-year program period from October 1, 2024, through September 30, 2029 is summarized below by year and by GHG reduction measure applying an efficient operating model leveraging existing programs, gaining synergies from complimentary statewide initiatives, and consistent with the State of Louisiana’s lean government approach.

The Louisianan CARE Initiative is allocating budget dollars to prioritized GHG reduction measures aligned with the interests of regional economic stakeholders and communities who share the commitment to transition Louisiana as a globally competitive energy region to carbon neutrality by 2050 by catalyzing public-private investments towards the clean hydrogen economy, industrial decarbonization, resilient clean ports, clean energy acceleration to enable offshore wind and large-scale solar power, and nature-based solutions across ports and wetlands as carbon sequestration assets and community green spaces.

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Table 8.0 Louisiana CARE Initiative Budget Summary by Year

| CATEGORY | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 | TOTAL |
|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| TOTAL PERSONNEL | \$241,500 | \$248,745 | \$256,207 | \$263,894 | \$271,810 | \$1,282,156 |
| TOTAL FRINGE BENEFITS | \$96,600 | \$99,498 | \$102,483 | \$105,557 | \$108,724 | \$512,863 |
| TOTAL TRAVEL | \$12,900 | \$12,900 | \$12,900 | \$12,900 | \$12,900 | \$64,500 |
| TOTAL EQUIPMENT | \$26,000 | \$0 | \$0 | \$0 | \$0 | \$26,000 |
| TOTAL SUPPLIES | \$17,400 | \$0 | \$0 | \$0 | \$0 | \$17,400 |
| TOTAL CONTRACTUAL | \$8,958,000 | \$75,970,500 | \$68,020,500 | \$68,020,500 | \$62,520,500 | \$283,490,000 |
| TOTAL OTHER | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| TOTAL DIRECT | \$9,352,400 | \$76,331,643 | \$68,392,090 | \$68,402,851 | \$62,913,935 | \$285,392,919 |
| TOTAL INDIRECT | \$935,240 | \$7,633,164 | \$6,839,209 | \$6,840,285 | \$6,299,182 | \$28,547,081 |
| TOTAL FUNDING | \$10,287,640 | \$83,964,807 | \$75,231,299 | \$75,243,136 | \$69,213,117 | \$313,940,000 |

b. Expenditure of Awarded Funds

Table 9.0 Louisiana CARE Initiative Budget by GHG Reduction Measure

| GHG REDUCTION MEASURE | TOTAL | % of TOTAL |
|-------------------------------|----------------------|-------------|
| 1. Hydrogen Economy | \$113,437,440 | 36% |
| 2. Industrial Decarbonization | \$55,404,651 | 18% |
| 3. N2O Abatement | \$16,629,651 | 5% |
| 4. Clean Resilient Ports | \$81,969,651 | 26% |
| 5. Port Buffer Zone | \$21,029,651 | 7% |
| 6. Sustainable Agriculture | \$7,829,651 | 2% |
| 7. Clean Energy Acceleration | \$8,929,651 | 3% |
| 8. Nature-Based Solutions | \$8,709,651 | 3% |
| TOTAL FUNDING | \$313,940,000 | 100% |

LOUISIANA COMPREHENSIVE ACTIONS TO REDUCTION EMISSIONS (CARE)

Table 10.0 Louisiana CARE Initiative Budget with Details

| CARE INITIATIVE BUDGET | TOTAL |
|--|----------------------|
| Program Manager @ \$92,500/yr, 1 FTE with salary increase 3% | \$491,095 |
| Program Staff @ \$74,000 1 FTE each year with salary increase 3% | \$392,876 |
| Grant Contract Coordinator @ \$75,000/yr, 1 FTE with salary increase 3% | \$398,185 |
| TOTAL PERSONNEL | \$1,282,156 |
| Full-time Employees @ 40% of salary | \$512,863 |
| TOTAL FRINGE BENEFITS | \$512,863 |
| TOTAL TRAVEL | \$64,500 |
| TOTAL EQUIPMENT | \$26,000 |
| TOTAL SUPPLIES | \$17,400 |
| Task 1.0 Clean Hydrogen Economy (\$0.5M/study for 4; \$3.75M/blueprint for 2; contract experts at \$1.3M/yr) | \$16,000,000 |
| Task 1.1 Hydrogen Upstream Production (\$16M/demonstration project for 4 projects) | \$64,000,000 |
| Task 1.2 Hydrogen Downstream Use (\$1.25M/corridor for all major Louisiana 16 corridors) | \$20,000,000 |
| Task 2.1 Industrial Decarbonization (\$3M/project for 7 projects) | \$21,000,000 |
| Task 2.2 Industrial CCS - (\$3.75M/project for 7 projects) | \$26,250,000 |
| Task 3.1 N2O Abatement (\$4M/site for 3 sites) | \$12,000,000 |
| Task 4.1 Port Shore Power (\$1M/unit at all 32-Ports and \$0.5M/study for 1 study) | \$32,500,000 |
| Task 4.2 Port Community Resilience Hubs (\$1.2M/hub at all 32-Ports and \$0.5M/study for 1 study) | \$38,900,000 |
| Task 5.1 Port Buffer Zone Program (\$.5M/port at all 32-Ports) | \$16,000,000 |
| Task 6.1 Sustainable Agriculture Innovative Program (\$4M to farmers on acreage burn reduction actions) | \$4,000,000 |
| Task 7.1 Clean Energy Acceleration (\$5M on new grid capacity to enable offshore wind and large scale solar) | \$5,000,000 |
| Task 8.0 Blue Carbon Research and Accreditation | \$2,400,000 |
| Task 8.1 Community Forestry and Greening | \$2,400,000 |
| Workforce Development and Apprenticeship Program | \$13,500,000 |
| Community Engagement and Education (64 Parishes + 4 Tribal Nations) 68 events twice/year @\$3k/event ALLOCATED | \$2,040,000 |
| Technical Assistance (contract experts to supplement state personnel) | \$7,500,000 |
| TOTAL CONTRACTUAL | \$283,490,000 |
| TOTAL OTHER | \$0 |
| TOTAL DIRECT | \$285,392,919 |
| State Labor Indirect Rate 10% ALLOCATED | \$28,539,292 |
| Rounding Adjustment | \$7,789 |
| TOTAL INDIRECT | \$28,547,081 |
| TOTAL BUDGET | \$313,940,000 |

c. Reasonableness of Costs

By 2030: When combined, the portfolio of Louisiana initiatives achieves 35.32 MMT CO₂e from 2025-2030, at a total cost of \$313,940,000. This represents a cost of \$8.89/ton CO₂e from the measures in the proposed program. The \$8.89/ton CO₂e cost is 95% less than the social cost of carbon as calculated by the US EPA. Each measure was found to be reasonable and cost-beneficial even if the cost per ton exceeded the social cost of carbon, as the benefits included non-carbon benefits such as co-pollutant reductions, energy burden reduction, resiliency, and demonstrating replicable and innovative models.

By 2050: When projected out to 2050, the portfolio of Louisiana initiatives achieves 236.3 MMT CO₂e from 2025-2050. At the same total cost of \$313,940,000, this represents a cost of \$1.33/ton CO₂e from the measures in the proposed program. The \$1.33/ton CO₂e cost is 99% less than the social cost of carbon as calculated by the US EPA.