

Louisiana Climate Initiatives Draft Partial Final Report

**DRAFT Sections for Public Comment and Task Force Review
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GOVERNOR'S
OFFICE OF
COASTAL
ACTIVITIES



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Climate Initiatives Task Force Membership 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
- **Dr. Chuck Brown**, Secretary, Louisiana Department of Environmental Quality
 - Designee: **Lourdes Iturralde**, Assistant Secretary, Office of Environmental Compliance
- **Jay Dardenne**, Commissioner of Administration, Division of Administration
 - Designee: **Mark Moses**, Assistant Commissioner, Facility Planning & Control
- **Bren Haase**, Executive Director, Coastal Protection and Restoration Authority
- **Thomas Harris**, Secretary, Louisiana Department of Natural Resources
 - Designee: **Jason Lanclos**, Director, State Energy Office
- **Don Pierson**, Secretary, Louisiana Economic Development
 - Designee: **Brad Lambert**, Deputy Secretary, Louisiana Economic Development
- **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
- **Timothy Hardy**, Breazeale, Sachse & Wilson, L.L.P., designee for Louisiana Senate President Page Cortez
- **Selby Bush**, BHP Petroleum, designee for the Louisiana Speaker of the House Clay Schexnayder
- **Bill Robertson**, designee of Public Service Commissioner Foster Campbell
- **Tyler Gray**, President and General Counsel, Louisiana Mid-Continent Oil and Gas Association
- **Gregory M. Bowser**, President and CEO, Louisiana Chemical Association
- **Jonathan Bourg**, Director of Resource Planning and Market Operations at Entergy, as a representative of an electric utility
- **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
- **Karen Gautreaux**, Director of Government Relations for Louisiana at the Nature Conservancy, as a member of the environmental nonprofit community



- **Flozell Daniels**, President and CEO of the Foundation for Louisiana, as a member with experience in community development and engagement
- **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
- **Colette Pichon Battle**, Executive Director of the Gulf Coast Center for Law and Policy, as a member of the environmental and climate justice community
- **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
- **Jeff Schwartz**, Director of Economic Development for the City of New Orleans, as a representative of local government perspective
- **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
- **Camille Manning-Broome**, President and CEO of the Center for Planning Excellence, as a member at-large



Introduction

Scientific understanding and lived experience have made mitigating greenhouse gas (GHG) emissions that are driving global climate change essential work. Through [Executive Order JBE 2020-18](#), Governor John Bel Edwards has called leaders from across government, industry, and civil society to come together to identify actions Louisiana can take to do its part in this worldwide problem. By articulating the problem being addressed and explaining the science-based decision-making framework guiding the Task Force and its supporting committees and advisory groups, this draft partial report will show the public how the State is going to go about crafting policies on one of the most important issues of the day.

From early November when the Climate Initiatives Task Force was first called to order until today, the Task Force, its committees and advisory groups, and planning team have been working to establish a common understanding of the problem context—the ways in which climate change is today and will in the future affect Louisiana's residents, economy, and natural environment. These groups have also discussed their charges—how their expertise and perspectives can produce effective, implementable climate policies for the state. And most importantly, the 120 plus leaders, bringing a wide range of perspectives and giving their time to this effort, have discussed and helped establish “fundamental objectives,” guideposts developed to help the state maximize the positive outcomes of addressing climate change while minimizing potential negative outcomes in an open and transparent manner. As such, this draft partial report does not contain first drafts of proposed climate actions for the state of Louisiana, but it does offer insights into the state's impetus for action and the many deeply held values brought to this process by stakeholders from across the state.

In 2021, these groups will begin the process of developing climate actions for inclusion in the final Climate Report. Through the iterative development of these actions, the state will consider and address important and complex characteristics of the climate problem. There is no single solution that will fix the world's climate problems overnight, and many damaging changes to the environment with harmful human consequences will be felt in Louisiana no matter how successful this Task Force is. Choosing to act in the face of these difficult truths is still incredibly important. Inaction is a choice to pass even more harmful impacts down to the next generation; to make the task of adapting to life on the edge of the Gulf of Mexico even more difficult and costly. Inaction is also the surest way to miss opportunities to improve the lives of the people in our state. To create new economic opportunities in a way that is open and inclusive of everyone in Louisiana. It is a chance to improve health, to enhance the quality of life, and to ensure that this state remains one that our children and children's children want and can invest in.

Adopting new policies or technologies will be more feasible at first for some industries than others. Transitioning to new ways of doing business will also be a process. Thankfully, Louisiana is not alone in facing these issues. Market forces are driving positive environmental outcomes, business leaders are adopting greenhouse gas emissions goals, other states are pioneering policies and actions that can be tailored to the Louisiana context, and we have in our DNA the expertise and ingenuity of a state



that has had to adapt and innovate in the face of immense challenges. The processes and fundamental objectives established by the Climate Initiatives Task Force and laid out in this report provide the framework for essential conversations to be held across segments of the economy and across party lines. In 2021, these conversations will become recommendations, and those recommendations will set Louisiana's pathway toward a bright future that is better for all of our people because it better sustains the environment that we all depend on.

Charge of the Task Force

BACKGROUND

The disasters of Hurricanes Katrina and Rita in 2005 set the state on a new course to better and more comprehensively understand and address the extreme risks faced by residents of coastal Louisiana from the land loss crisis. With the creation of the Coastal Protection and Restoration Authority Board (CPRA Board) in 2006 and publication of the first Comprehensive Coastal Master Plan for a Sustainable Coast (coastal master plan) in 2007, Louisiana took the lead nationally in adapting to environmental change. With its strong foundation in science, the coastal master plan incorporated information about a changing climate in its models in order to account for potential future scenarios that would affect hurricane intensity and frequency, possible rates of sea level rise, changes to precipitation, and other factors with the intent to develop more robust adaptation strategies and longer-lasting, higher impact restoration and protection projects.

For all the successes of the coastal master plan in guiding state investments along the coast in the intervening years, the plan was not designed or intended to address the greenhouse gas emissions that were fueling many of the environmental changes with which it was contending. The State of Louisiana needs a new, separate plan to meet the challenges of climate change mitigation, one that addresses greenhouse gas emissions head on and lays out the strategy for Louisiana to do its part to avoid the worst impacts of climate change for its people, its environment, and its economy.

Shortly after his inauguration in February of 2020, Governor Edwards held a press conference to announce his second term policy priorities for the coastal program. Flanked by nearly every member of his cabinet, Governor Edwards committed to forming a *Climate Initiatives Task Force* that would develop a set of recommendations to address the state's greenhouse gas emissions. This effort was formalized at the August 2020 CPRA Board meeting when he signed Executive Order JBE 2020-18.

EXECUTIVE ORDER

Referencing the value of Louisiana's coast and the projections for an additional 2,250 to 4,120 square miles of coastal land loss over the next fifty years, Executive Order JBE 2020-18 connects Louisiana's coastal crisis, the catastrophic human costs of natural disasters, and the international scientific consensus that greenhouse gas emissions are causing unprecedented global warming. "To improve our resilience, sustain our coast, and help avoid the worst impacts of climate change," the order states,



“Louisiana must proactively work to reduce the greenhouse gas emissions that are driving up global temperatures, raising sea levels, and increasing risks that threaten our health and safety, quality of life, economic growth, and vital habitats and ecosystems.” Governor Edwards also clearly articulated his desire for solutions to this problem to be developed in partnership with multiple stakeholders with the ultimate goal of reaching a “balanced” set of strategies that would both help “limit the impacts of climate change that harm our state’s natural and cultural heritage,” and provide ways for us to adapt “to maintain [our] position as a world leader in energy, industry, agriculture, and transportation.”

The Executive Order established a twenty-three-member Task Force, supported by six sector committees and four advisory groups, and called for an updated greenhouse gas emissions inventory, an interim report in February of 2021, and a final climate strategy by February of 2022.

GREENHOUSE GAS EMISSIONS REDUCTION GOALS

Importantly, the Executive Order also established ambitious GHG reduction goals. According to the Executive Order, by 2025, Louisiana should reduce its net greenhouse gas emissions by 26-28% from 2005 levels. It should reduce its net GHG emissions by 50% from 2005 levels by 2030. And, it should aim to be a net zero GHG emitter by 2050. Through its recommendations, the Task Force will identify how Louisiana can reach these GHG emission goals.

These GHG emissions goals raise Louisiana’s efforts in line with commitments made by dozens of other states, the Paris Climate Accord, and businesses operating in multiple sectors internationally, nationally, and within Louisiana. These businesses are from multiple industrial sectors including energy producers, public utilities, chemical manufacturers, technology firms, and finance. More importantly, by setting these goals, Gov. Edwards’ Executive Order focused the work of the Task Force on solutions to meet these goals rather than the goals themselves.

MISSION, VISION, AND VALUES

Governor Edwards’ Executive Order also clearly established a vision for Louisiana: that our state “can and will reduce greenhouse gas emissions to limit the impacts of climate change that harm the state’s natural and cultural heritage while adapting to maintain its position as a world leader in energy, industry, agriculture, and transportation.”

The realization of that vision is the central mission of the Climate Initiatives Task Force. It will investigate and offer recommended actions for the reduction of GHG emissions in Louisiana to achieve the stated GHG emissions reduction goals in order to improve the health and welfare of the people of Louisiana and advance Louisiana’s economic and energy profile. Notably, the Climate Initiatives Task Force exists alongside and builds upon other state efforts such as the Louisiana Watershed Initiative, the Coastal Master Plan, the Adaptive Governance Initiative, and the Resilient Louisiana Commission. Actions to reduce GHG emissions that also build resilience and enhance our ability to adapt to climate change are welcomed and will be particularly important for Louisiana to consider for adoption, but the Task Force will not hold as one of its central objectives the development of projects or programs to



help Louisiana adapt to climate change such as home elevations or specific restoration projects. Rather, the Task Force will seek to amplify and compliment the efforts occurring elsewhere in state government to produce better outcomes for the people.

Recognizing the human, financial, and environmental vulnerabilities of Louisiana to the impacts of climate change as well as the carbon intensity of today's economy, the approach of the Climate Initiatives Task Force allows for the careful balancing of the interests and needs of different stakeholders. This approach is supported by the composition, process, and stated values called for by the Governor in the Executive Order and carried out by the Governor's Office staff and the planning team working for the Task Force.

Utilizing knowledge gained through the coastal master planning process, the Climate Initiatives Task Force decision making process will be founded in scientific accuracy and inclusion of multiple stakeholders and the public in the action development process. Over the course of the first two meetings of the Task Force and the first meeting of the sector committees and advisory groups additional values were also articulated. These values include respect, integrity, transparency, the desire for consensus, and a focus on opportunity rather than loss.

DELIVERABLE TIMELINE

The deliverables outlined in Figure 1 below, with their accompanying timeline, ensure the Task Force is able to present comprehensive and effective strategies for statewide GHG emissions reductions to the Governor by February 1, 2022.

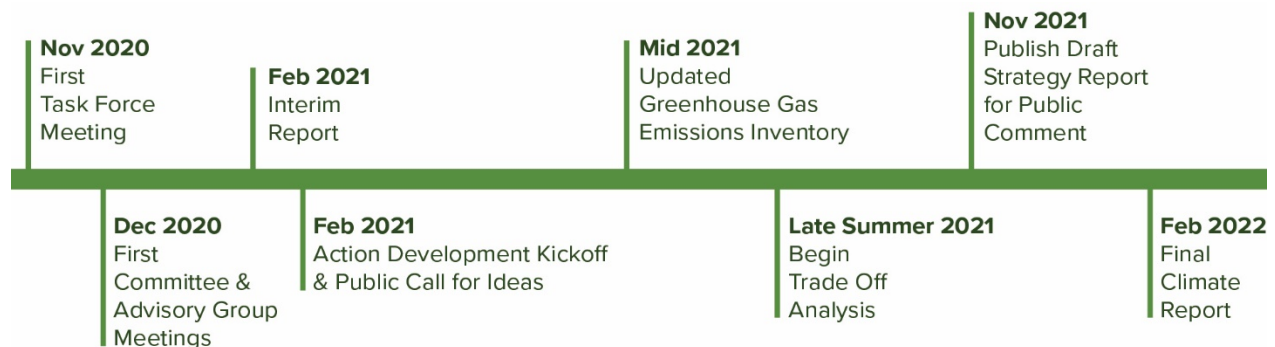


Figure 1 Climate Initiatives Task Force Deliverable Timeline

The Need for Action: Climate Risks to Louisiana

In spite of record levels of progress by the Coastal Protection and Restoration Authority over the past fifteen years and the expectation of continued success, the reality is that Louisiana cannot build, restore, protect, or adapt its way out of harm's way. Climate change will determine the amount of coast that can be preserved and the effectiveness of restoration and protection efforts. Its impacts will reach



north from the coast, making flooding more likely and heat more unbearable, and it will strain our best efforts to become more resilient. Most of all, these changes to the environment will translate into hardships for the people that call this state home. Many will be impacted directly through the physical and mental health and financial costs of flooding, heatwaves, or disease and all will be indirectly affected as systems adapt or breakdown in response. Finally, while no group will be left untouched by the climate crisis, communities of color and indigenous communities will be disparately burdened by a changing environment. Because of the impacts to our people, natural environment, and economy, the State of Louisiana will follow the scientific consensus of international and national experts to take steps to drastically lower the GHG emissions that are driving toward catastrophic changes to our climate.

SCIENTIFIC UNDERPINNINGS

Since 1988, the Intergovernmental Panel on Climate Change (IPCC) has provided scientific information to governments at all levels for the development of climate policy. The regular reports issued by the IPCC represent contributions from thousands of scientists spanning the globe who assess the latest published works to arrive at a comprehensive summary of what is known about climate change. They report on the drivers of climate change, the impacts and future risks associated with climate change, and how adaptation and mitigation can reduce current and future exposure.

In 2018, the IPCC issued its *Special Report: Global Warming of 1.5° C* in order to inform the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. This report affirmed that human activities are estimated to have contributed to 1° C of global warming above pre-industrial levels and that global warming is anticipated to reach 1.5° C above preindustrial levels between 2032 and 2050 if current rates continue. This rate of global warming, the IPCC concluded, will increase the overall “climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth.” These risks further increase as global temperatures rise to 2° C above pre-industrial levels.

Scientists working across the United States government and the National Academy of Sciences also produce summary reports detailing the impacts of climate change on the U.S. specifically known as the National Climate Assessment. In 2018, the most recent National Climate Assessment was released with similar conclusions as the IPCC report, including the conclusion that “climate change creates new risks and exacerbates existing vulnerabilities in communities across the United States, presenting growing challenges to human health and safety, quality of life, and the rate of economic growth.”¹

Another point made by both the IPCC and the National Climate Assessment is the unequal distribution of climate impacts. The vulnerable, those who are low income, communities of color, children, the elderly, indigenous populations, and others who are marginalized have a lower capacity to prepare for

¹ Summary Findings. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 25). US Global Change Research Program.



and cope with the extreme weather and climate-related events and other changes. These populations may also be disproportionately affected by actions taken to address the underlying causes and impacts of climate change if those inequalities and circumstances are not considered explicitly.

With clearly understood risks manifesting every day and growing in severity in the future, the need to reduce greenhouse gas emissions driving global warming is of paramount concern. Cutting greenhouse gas emissions is a viable way to reduce climate-related risks and increase opportunities for communities in the long run. As is made clear in national and international scientific reports, the evidence of human-caused climate change is overwhelming, the impacts of climate change are present today and intensifying, and the threats to physical, social, and economic well-being are on the rise.²

Louisiana is particularly vulnerable to the impact of climate change. The National Climate Assessment produced four key messages for the southeastern region of the United States, and each resonates deeply with Louisiana.

1. **Urban Infrastructure and Health Risks.** Compared to cities in other regions of the country, cities in the southeast are particularly vulnerable to climate change impacts to infrastructure and human health specifically from increasing heat, flooding, and vector-borne diseases.
2. **Increasing Flood Risks in Coastal and Low-Lying Regions.** Home to people, critical industries, cultural resources, and tourism economies, the coastal plain and low-lying regions of the southeast are extremely vulnerable to climate change impacts. Flood frequencies, extreme rainfall events, and sea level rise will affect property values and the viability of infrastructure.
3. **Natural Ecosystems will be Transformed.** Diverse natural ecosystems that provide multiple social benefits will be transformed by climate change through changing winter temperature extremes, wildfire patterns, sea levels, hurricanes, floods, droughts, and warming oceans that will redistribute species and greatly modify ecosystems. "Future generations can expect to experience and interact with natural systems that are much different than those that we see today."
4. **Economic and Health Risks for Rural Communities.** More regular extreme heat and changing seasonal climates are projected to have impacts on exposure-linked health and economic vulnerabilities in agricultural, timber, and manufacturing sectors. Reduced labor hours from extreme heat can also compound existing social stresses.

In the coming sections, brief glimpses of climate change's current and future potential impacts on Louisiana will be explored through the lenses of community, economic, and environmental outcomes.

² Reducing Risks Through Adaptation Actions & Reducing Risks Through Emissions Mitigation. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 1309-1386). US Global Change Research Program.



COMMUNITY IMPACTS TO LOUISIANA

Louisiana's geography, geology, and history make it one of the earliest and hardest hit areas of the United States when it comes to experiencing the negative impacts of climate change. This burden manifests through multiple systems, the most important of which is the human and social system. Increased heat, floods and drought, disease transmission, hurricanes, sea level rise, and warming oceans all take on added significance when overlaid on human communities.

In Louisiana, people from every walk of life will be affected by the impacts of climate change. While the widespread risks from climate change are alarming, this troubling fact can be a unifying force across an often fractured political and social spectrum, serving to point us all toward common action. Despite the commonality of risk experienced across Louisiana, it is also true that some communities will feel more pain, greater disruption, and more severe impacts to their health and quality of life than others. This reality is observed by both the IPCC and the National Climate Assessment and manifests in Louisiana along racial, income, ethnic, and age categories.

Recognizing the disparate impacts of climate change and the potential for the costs of certain mitigation or adaptation actions to unequally fall on the already disadvantaged, the opportunity to use climate mitigation and adaptation to address long standing historical inequities has been deliberately factored into the composition, mission, and values of the Climate Initiatives Task Force. Commitments to equity are reflected in the composition of the Task Force and the supporting committees. In addition, an equity advisory group was formed to specifically consider the potential intended and unintended outcomes of policy proposals to advance or negate more equitable outcomes. This equity lens will be applied as the state considers the human impacts of climate change experienced as the result of coastal land loss and hurricane vulnerability, health impacts from heat and air quality, inland flooding, and drought.

COASTAL IMPACTS

Because of natural subsidence and human engineering, Louisiana's coastal plain has been slowly sinking for nearly 90 years. As climate change driven global warming increases sea levels, coastal Louisiana will experience even greater challenges to stay above water. This encroachment by the Gulf of Mexico due to the loss of land has already exposed nearly 2 million residents of coastal Louisiana to the dangers of storm surge-based flooding with some communities threatened to be completely submerged just three or four decades into the future. Projections in the 2017 Coastal Master Plan indicate that without significant investment in coastal restoration and protection projects southern Louisiana could lose between 2,254 and 4,123 square miles of additional land over the next fifty years. Even with an investment of \$50 billion in the implementation of every project in the master plan, 1,454-2,965 square miles of coastline are still likely to be submerged due to continued subsidence and sea level rise.³

³ 2017 Coastal Master Plan. (2017). In *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (pp. 97, 107). Coastal Protection and Restoration Authority of Louisiana.



This loss of land translates directly into greater exposure to hurricane risk, an exposure that will also increase as hurricane characteristics change in response to global warming. This level of risk poses an existential threat to individuals, families, neighborhoods, and entire towns and economies; vibrant cultural traditions, hunting and fishing grounds, and long held, sacred lands all of which are endangered as the human environment along the coast becomes uninhabitable. The National Climate Assessment estimates that one meter of sea level rise will erase over 13,000 recorded historic and prehistoric archaeological sites and more than 1,000 locations that are currently eligible for inclusion on the National Register of Historic Places across the southeast.⁴

Climate change is also having an impact on coastal residents' ability to get out of harm's way when hurricanes approach. The rapid intensification of hurricanes, as seen most recently in Hurricanes Harvey, Michael, Laura, and Delta, has been partially attributed to climate change.⁵ Hurricane Delta, for example went from a Tropical Depression to a Category 4 storm in less than two days.⁶ Fast moving changes to a hurricane's strength, especially just before landfall can pose challenges for forecasters and can make effective evacuations, which are already challenging for some senior citizens, people with disabilities, and those physically or economically unable to leave their homes, impossible.

Whether urban or rural, coastal or inland, all populations in Louisiana may be affected by flooding—be it from storm surge, persistent high tides, increasingly heavy downpours, or from rivers swollen from changes to up-basin precipitation patterns. Even floods that do not force people from their homes disrupt lives, add financial and emotional stress to individuals and families, and strain resources that could otherwise be invested elsewhere. Shortly after the 2016 floods in Louisiana, which forced the evacuation of thirty thousand people and flooded at least sixty thousand homes across twelve parishes, the National Oceanic and Atmospheric Administration (NOAA) and collaborators at the World Weather Attribution (WWA) conducted a rapid assessment of the role of climate change on the event. Researchers found that heat-trapping greenhouse gases increased the likelihood of this type of event by at least 40% as compared to events that occurred back in 1900.⁷

As heat, floods and storms, and related health impacts more consistently visit the people of Louisiana, additional stressors to infrastructure and social and health systems will also produce difficulties that will be felt across the state. Louisiana knows all too well the human costs of natural disasters. It is clear from science and experience that these costs will grow in the future and that some costs and

⁴ Southeast. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 758). US Global Change Research Program.

⁵ Kieran T. Bhatia et al. (2019). Recent increases in tropical cyclone intensification rates. *Nature Communications*, vol. 10, 1-9.

⁶ Jonathan Erdman. (2020, Oct. 6). *Hurricane Delta Fastest on Record to Rapidly Intensify from Tropical Depression to Category 4 in Atlantic Basin*. The Weather Channel. <https://weather.com/storms/hurricane/news/2020-10-06-hurricane-delta-rapid-intensification-among-most-intense#:~:text=Hurricane%20Delta's%20intensification%20ratehttps://weather.com/storms/hurricane/news/2020-10-06-hurricane-delta-rapid-intensification-among-most-intense#:~:text=Hurricane%20Delta's%20intensification%20rate%20is,4%20in%20Atlantic%20Basin%20records.%20is,4%20in%20Atlantic%20Basin%20records.>

⁷ Tom Di Liberto. (2016, Sept. 7). *Global warming increased risk, intensity of Louisiana's extreme rain event*. NOAA. <https://www.climate.gov/news-features/event-tracker/global-warming-increased-risk-intensity-louisianas-extreme-rain-event>.



impacts related to climate change will be as hard to predict as they will be disruptive due to the interconnected nature of human and natural systems. Avoiding a future of unchecked climate change is the central concern of this Task Force.

URBAN AND SUBURBAN RISKS

In urban and suburban areas, climate change will also threaten communities even if they are protected from hurricanes by levee systems. Heat and humidity, already deadly forces in Louisiana, will become even more unbearable as climate change increases the number of extremely hot days. The prevalence of buildings, asphalt, and concrete make developed areas even hotter than the surrounding more rural, greener spaces, making cities, towns, and suburbs amplifiers of this threat. The formation of ozone is also elevated due to climate change and poses additional mortality and morbidity risks to urban residents. In addition to air quality and heat concerns, development patterns that replace green space with impervious surfaces also exacerbate stormwater runoff and flooding. Together, these factors will challenge urban and suburban communities with both acute events that disrupt lives and strain resources, and also more chronic exposure to unpleasant or dangerous conditions that stress individuals and systems and can exacerbate existing challenges stemming from social inequality, the impacts of aging, infrastructure challenges, and ecosystems.⁸

RURAL RISKS

Louisiana is more rural than urban. These communities make up the backbone of our agricultural and forestry industries. Climate change will produce seasonal changes that can disrupt both the natural system and the ability for people to make a living from those systems. By the end of the century, it is estimated that increased heat will result in a reduction of labor hours by more five hundred million in the Southeast for high-risk industries, such as agriculture, forestry, fishing, mining, manufacturing, transportation, and utilities.⁹

Temperature and rainfall changes create challenges for crops and livestock as well. While some crops may become newly viable alternatives under new conditions, the overall impact will be negative. Decreasing productivity in cotton, corn, soybeans, and rice is expected with higher temperatures as are increased stresses on livestock.¹⁰ Changes in precipitation patterns can be expected to impact forestry.

⁸ Built Environment, Urban Systems, and Cities. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 439). US Global Change Research Program.

⁹ Southeast. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 780). US Global Change Research Program.

¹⁰ Southeast. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 778). US Global Change Research Program.



These risks are not confined to inland agricultural and forestry communities but will also be faced by those involved in shrimping, oyster harvesting, and fishing along the coast as the result of warming ocean temperatures, sea level rise, and ocean and coastal acidification.¹¹

Rural communities are some of the best positioned to help contribute to climate change mitigation and adaptation through agricultural and forestry practices, but they also face additional difficulties in managing the impacts from climate change because of limited community resources. Communication, transportation, water, and sewage infrastructure can all be vulnerable to climate change, and increasing their resilience will require more resources than are currently available.¹²

ENVIRONMENTAL IMPACTS TO LOUISIANA

Louisiana's natural environment is as rich and vibrant as the people who call it home. These natural resources provide benefits to society that are often taken for granted like safe and reliable water supplies, clean air, protection from flooding, the sequestration of carbon dioxide, and countless recreational and economic activities. Louisianans' connection to the environment is also the source of many important aspects of the heritage, culture, recreation, and food ways that make the state unique.

One of the most well-documented climate-related environmental changes in Louisiana is relative sea level rise. According to the National Climate Assessment, relative to the year 2000, global mean sea level rise is very likely to rise by 1 to four.3 feet by 2100 with the western Gulf of Mexico likely to experience relative sea level rise that is greater than the global average.¹³ As sea levels rise, some coastal ecosystems will be submerged and converted to open water, salt water penetration will move further inland displacing inland ecosystems, and hurricane impacts will stretch further inland causing additional ecological changes. Farther inland communities will also experience change through increased nuisance flooding, changing industries and supply chains, and shifts in land use and population centers.

Climate change increases the frequency and intensity of extreme precipitation events and droughts. Prolonged absence of water during drought periods can contribute to ecological transformation as can prolonged inundation from extreme rainfall. Across Louisiana, ecosystems must adjust to the extremes: too much or too little.

Warming oceans will also impact marine and coastal ecosystems where many species that are sensitive to small changes will be affected. In Louisiana, these changes will not only impact food webs and function but also threaten to cause a decline in fisheries and protections from waves and storm

¹¹ Southeast. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 777). US Global Change Research Program.

¹² Agriculture and Rural Communities. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 409). US Global Change Research Program.

¹³ Southeast. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 757). US Global Change Research Program.



surge. Annual oyster harvests in southeastern United States, for example, are projected to decline between 20% and 44-48% by the end of the century depending on the level of GHG emissions.¹⁴

ECONOMIC IMPACTS TO LOUISIANA

The impacts of climate change are exceedingly costly to the point that they threaten the health of the entire financial system. According to NOAA's National Centers for Environmental Information, "[t]here were 22 separate billion-dollar weather or climate related disaster events, shattering the previous annual record of 16 events, which occurred in 2017 and 2011."¹⁵ The costliest event in 2020 was Hurricane Laura with \$19 billion in damage.¹⁶ 2020 also marked the sixth consecutive year in which 10 or more billion-dollar natural disasters have impacted the country.¹⁷ The highest loss year for the United States was 2017 when \$306.2 billion in damages resulted from natural and climate-related disasters. This record bested 2005 which totaled \$214.8 billion in damages (2017 dollars) and included Hurricanes Katrina and Rita. According to the National Climate Assessment, without sustained and substantial mitigation and adaptation efforts, "climate change is expected to cause growing losses to American infrastructure and property and impede the rate of economic growth over this century." These annual losses have the potential to reach hundreds of billions of dollars by the end of the century, which is more than the gross domestic product of many states.¹⁸

As these climate-related disasters become more devastating and more regular with climate change, their financial costs pose systemic risk to the entire economy. The Commodity Futures Trading Commission, responsible for promoting the integrity, resilience, and vibrancy of derivatives markets in the United States through sound regulation, released a report in September of 2020 warning that "climate change poses a major risk to the stability of the U.S. financial system" and is already affecting or will affect nearly every part of the American economy.¹⁹

Economic risks specific to Louisiana are far too easy to come by. Estimates from the 2017 Coastal Master Plan suggest that expected annual damages coast wide from storms with a 1% chance of occurring in a year at the end of 50 years could reach \$12.1 billion dollars under the medium scenario.²⁰ Single events in our recent past have been exceedingly costly as well. Hurricane Katrina

¹⁴ Southeast. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 777). US Global Change Research Program.

¹⁵ Adam B. Smith. (2021, Jan. 8). *2020 US billion-dollar weather and climate related disasters in historical context*. NOAA. <https://www.climate.gov/news-features/blogs/beyond-data/2020-us-billion-dollar-weather-and-climate-disasters-historical#:~:text=There%20were%2022%20separate%20billion,occurred%20in%202017%20and%202011.>

¹⁶ Adam B. Smith. (2021, Jan. 8). *2020 US billion-dollar weather and climate related disasters in historical context*. NOAA. <https://www.climate.gov/news-features/blogs/beyond-data/2020-us-billion-dollar-weather-and-climate-disasters-historical#:~:text=There%20were%2022%20separate%20billion,occurred%20in%202017%20and%202011.>

¹⁷ (2020). *Billion-Dollar Weather and Climate Disasters: Overview*. NOAA. <https://www.ncdc.noaa.gov/billions/>.

¹⁸ Summary Findings. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 25). US Global Change Research Program.

¹⁹ Executive Summary. (2020). In *Managing Climate Risk in the US Financial System* (pp. i). Market Risk Advisory Committee of the US Commodity Futures Trading Commission.

²⁰ Executive Summary. (2017). In *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (pp. ES-17). Coastal Protection and Restoration Authority of Louisiana.



resulted in \$135 billion in damages in 2005 dollars,²¹ the 2016 floods in the Baton Rouge area caused an estimated \$10.1 billion in damages, and an economic study by LSU estimated that a storm with a similar track to Katrina could cause \$138 billion in damages to the New Orleans region in a future without master plan investments even with the existing \$14.5 billion Hurricane Storm Damage Risk Reduction System.

Inland flooding and saltwater intrusion pose additional risks to infrastructure that present high costs for repair, replacement, or redesign. Interruptions from damages to transportation networks will also cause disruptions to important economic networks and commodities flows that are important for the state and national economy. There is also considerable unknown risk in the built environment because existing flood insurance rate maps do not account for the future flood risk anticipated as a result of climate change or new development that may also reduce a floodplain's ability to manage storm water. Other types of future economic losses are possible as markets and investors make decisions about community capacity to address climate risk and about the ability of existing industrial facilities to minimize their carbon footprint. Today investors, large financial institutions, and bond ratings agencies are beginning to consider risks posed by climate change in their decisions. These determinations could have real impacts on a community's ability to finance infrastructure or a business's cost of raising capital. Additionally, as global demand gradually shifts away from carbon-based fuels, some plants will close either because of reduced demand or because the cost of continued operations is too high to remain profitable. Once again, Louisiana is particularly exposed to both of these types of financial risks.

The dangers of inaction in the face of climate change in Louisiana are numerous. They threaten tremendous harm to our people, natural environment, and economic health. The silver lining is that the state is joining a growing chorus of countries, states, and private corporations that are endeavoring to do their part to lower GHG emissions that are driving these catastrophic changes to the earth's atmosphere. While dangerous consequences from climate change are already manifesting around the world, these risks can be mitigated and adaptation efforts can be more successful if the global community is successful in keeping global warming below 2° Celsius by the end of this century.²² Every actor at every level has a role to play in achieving this global goal, including Louisiana.

Opportunities Posed by Climate Action

To mitigate the GHG emissions required to avert the worst impacts of climate change, an unprecedented level of investment of time, resources, and labor will be required. With investments of this magnitude come a once-in-a-generation opportunity to reshape our state: to preserve and care for our abundant natural resources, to create thousands of good-paying jobs in a clean energy economy,

²¹ Allison Plyer. (2016, Aug. 26). *Facts for Features: Katrina Impact*. The Data Center. <https://www.datacenterresearch.org/data-resources/katrina/facts-for-impact/>.

²² Summary for Policymakers. (2019). In *Intergovernmental Panel on Climate Change: Special Report on the Impacts of Global Warming of 1.5°C* (pp. 9). Intergovernmental Panel on Climate Change.



to breathe new life into communities left behind, and to lead by example for other states and communities. The Climate Initiatives Task Force will focus on developing actions and strategies that create as many opportunities as possible for our people, environment, and economy.

In recent decades, Louisiana has continued to be a hub for energy jobs and investment while searching for new ways to diversify its economy and provide high-paying jobs in other industries. The growing sectors of coastal protection and restoration and water management show that high levels of investment lead to good jobs. Just as investment in the State's coastal program has created expertise and experience for Louisiana businesses to export around the world, State investment and leadership in the work of GHG emissions reductions can help build capacity and expertise for Louisiana to be a regional and national leader in reducing GHG emissions.

Already, Louisiana is benefitting from new investments by companies seeking to do business in this state while contributing to a lower carbon future. In January, Louisiana Economic Development announced that Gron Fuels' proposed \$9.2 billion renewable fuels complex in West Baton Rouge Parish was named the nation's No. 2 Economic Development Deal of 2020 by *Business Facilities* magazine. This low-carbon diesel facility is expected to create 1,025 new direct jobs and potentially 4,560 indirect jobs for the Capital Region.²³ Opportunities such as this can grow as more companies are looking to make investments to support a lower carbon economy. According to the World Resources Institute 553 companies with a combined \$10 trillion plus market cap have committed to adopting emissions reduction targets.²⁴

Nationwide, there is also considerable job growth and economic opportunity in renewable energy. Louisiana is working with the Bureau of Ocean Energy Management to complete the necessary steps to hold a lease sale in the Gulf of Mexico for offshore wind power production. According to the National Renewable Energy Laboratory, Louisiana ranks fourth in the nation for offshore wind technical potential.²⁵ In addition to offshore wind deployment, Louisiana is well positioned to be a manufacturing and servicing hub for offshore wind. In fact, Louisiana companies were integral to the design, fabrication, and construction of the nation's first commercial offshore wind farm, Block Island.

Reducing net GHG emission may also be an impetus for greater investment in the state's coastal master plan. By constructing projects to restore coastal ecosystems, we can increase community resilience against the impacts of climate change and sequester carbon dioxide. Through a RESTORE Act planning grant, CPRA and the Water Institute of the Gulf will examine in more detail the carbon capture potential of coastal ecosystem restoration. Information will be developed about current

²³ Gary Perilloux. (2021, Jan. 07). *Gron Fuels on Louisiana Named Nation's No. 2 Deal by Business Facilities*. Louisiana Economic Development. <https://www.opportunitylouisiana.com/led-news/news-releases/news/2021/01/07/gr%C3%B6n-fuels-in-louisiana-named-nation-s-no.-2-deal-by-business-facilities>.

²⁴ Kevin Moss. (2019, May 21). *3 Ways Businesses Can Lead the Transition to a Low-Carbon Economy*. World Resources Institute. <https://www.wri.org/blog/2019/05/3-ways-businesses-can-lead-transition-low-carbon-economy>.

²⁵ Offshore Wind Energy. (2020). *Survey and Assessment of the Ocean Renewable Energy Resources in the US Gulf of Mexico* (pp. 27). OCS BOEM.



coastal carbon storage conditions, how coastal restoration could influence those conditions, and the modeling tools and markets available to assess and support coastal carbon capture.

National studies and modeling examining potential pathways to a net-zero carbon future, such as Princeton University's recent report *Net-Zero America*, show that achieving these goals as a country is possible within existing technological and financial constraints.²⁶ In the context of these modeling efforts that could guide a national decarbonization strategy, Louisiana has several opportunities, including converting vehicle fleets to electric; rapidly increasing energy efficiency of vehicles and buildings; constructing a large network of biomass and biofuels infrastructure; constructing, transporting, and storing vast amounts of carbon dioxide; and using better forestry and agricultural practices to store carbon. Additionally, Louisiana could aggressively support the design, manufacturing, construction, and servicing needs of building out a solar and wind network across the nation. With the changing market demand and improving technologies for offshore wind, Louisiana could see additional opportunities in that sector as well. A coordinated strategy will be required to ensure that Louisiana makes the most of these opportunities.

Finally, the work of the Climate Initiatives Task Force is presenting the state with an opportunity to address the challenges of a changing economy head on. Navigating the need and capacity for existing industries to adapt and innovate to meet the needs of a low carbon economy will be as important as investing in new companies and new technologies that can meet the world's carbon goals. This opportunity is also one to revisit long-standing questions about who benefits from economic growth in Louisiana and who must carry the burden of transitions. As the Task Force does its work, it must be vigilant in its pursuit of a more inclusive, thriving, adaptable economy that provides benefits for all Louisianans.

HEALTH BENEFITS

Climate change intensifies existing threats to public health while allowing new threats to emerge. As warming continues and climate change worsens, air pollution, flooding and increased tropical weather, extreme temperatures, and increasingly, new tropical diseases will become more widespread as well as more intense for those who can least afford to bear them.

GHG emissions do not occur by themselves. Many processes that produce GHG emissions also release other air pollutants that carry negative impacts on human health. By addressing GHG emissions, conditions that climate change is expected to exacerbate, like the formation of ground-level ozone and particulate matter, can be avoided. These pollutants can cause adverse health impacts, particularly among the elderly, children, and those with chronic illnesses. GHG emissions and rising temperatures are also related to longer pollen seasons, increased pollen production by plants, and altered degrees of allergic reaction.²⁷

²⁶ Executive Summary. (2020). In *Net-Zero America* (pp. 7-10). Princeton Environmental Research: Half-Century at the Forefront.

²⁷ Air Quality. (2018). In *Fourth National Climate Assessment. Vol. II: Impacts, Risks, and Adaptation in the United States* (pp. 514). US Global Change Research Program.



The public health impacts associated with GHG emissions are tremendously costly for Louisiana. In addition to the direct impacts of diseases, climate change and its impacts are detrimental to mental health. The stress, anxiety, and trauma of continued and worsening cycles of hurricanes, flooding, extreme heat, sea level rise, and coastal degradation are heavy burdens to bear. Addressing emissions can also serve as an opportunity to strengthen Louisianans' mental health and collective strength in the face of climate change.

ADVANCING CLIMATE EQUITY

In Louisiana, climate change and GHG emissions disproportionately impact low-income, Black, Indigenous, and coastal communities. These communities are the least responsible for emissions, but bear the highest costs, in health, environmental degradation, and even migration. Actions and strategies to reduce GHG emissions must be designed and implemented to offer tangible, material benefits to these communities and to allow them to design, participate, and lead the work of repairing our environment and build a clean energy future.

Without intentional policy design, Louisiana's actions to build a new, clean energy economy will reinforce the stratification and divisions that created these problems under the old economy. From disasters like Katrina and Laura that laid bare the intertwined environmental hazards compounded by segregation, poverty, and inequitable recovery strategies, to the everyday struggles of residents in the River Parishes and other fence-line communities, to the loss of land and community that has impacted Indigenous communities in the coastal zone – there is no shortage of examples of the connections between environmental injustice, disaster, and race.

Despite the challenges, these communities are not just capable, but crucial to Louisiana's climate future. They hold tremendous knowledge of the state's lands, waters, wildlife, and environment. The Climate Initiatives Task Force is developing actions and strategies with climate equity at the forefront: to ensure that these communities are leaders in the implementation of GHG reductions. This work begins with the Task Force, but will continue for years to come.

Problem Context: Emissions in Louisiana

Greenhouse gas emissions are driving up global temperatures and fueling the changes to the earth's climate that are producing drastic and dangerous impacts for society. An important step in evaluating options for reducing these emissions is to understand their sources and sinks. Since joining the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, the United States has produced periodic reports on human-produced GHG emissions by source as well as removals by sinks using internationally comparable protocols. These reports are known as GHG inventories. The most recent national inventory was published by the Environmental Protection Agency in April of 2020 covering the period from 1990-2018.



According to the EPA, concentrations of GHGs have increased globally by 46% for carbon dioxide, 165% for methane, and 23% for nitrous oxide from the preindustrial era to 2018.²⁸ Together, the world's top ten emitting countries produce more than 68% of global GHG emissions.²⁹ Until 2006, the United States was the world's largest GHG emitter. It now ranks second to China, the world's most populous country and one of its fastest growing economies.

Since 2008, Louisiana has ranked as the 8th largest GHG emitting state in the United States trailing more populous and larger economic states like Texas, California, Illinois, Pennsylvania, Ohio, Indiana, and Florida. When ranked relative to gross domestic product and relative to population, Louisiana ranks fourth and fifth respectively (see Figure 2). At the December 2020 Task Force meeting, Dr. David Dismukes of the LSU Center for Energy Studies presented on GHG emissions trends and informed the Task Force that Louisiana's share of total U.S. carbon dioxide emissions has been between four and five percent since 1990 and now accounts for just over five percent of all U.S. carbon emissions.³⁰

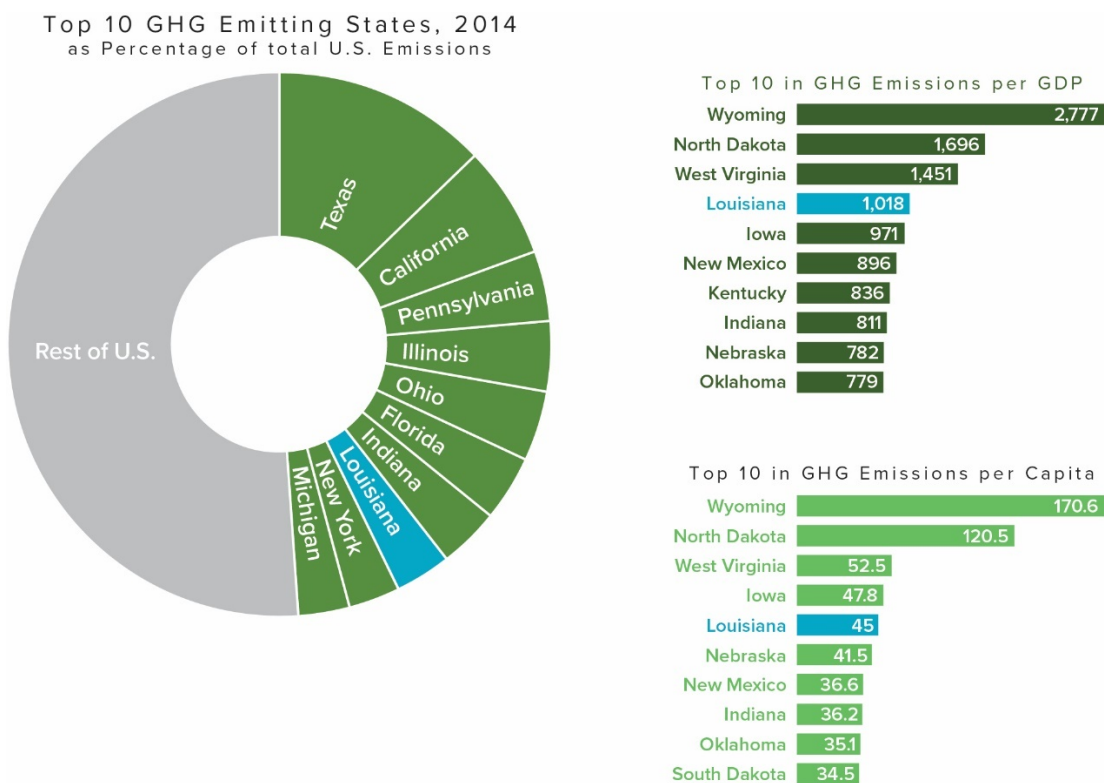


Figure 2 U.S. State GHG Emission Rankings, 2014. Source: World Resources Institute.

²⁸ Background Information. (2020). In *Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2018* (pp. ES-2). US Environmental Protection Agency.

²⁹ Mengpin Ge and Johannes Friedrich. (2020, Feb. 06). *4 Charts Explain Greenhouse Gas Emissions by Countries and Sectors*. World Resources Institute. <https://www.wri.org/blog/2020/02/greenhouse-gas-emissions-by-country-sector>.

³⁰ David Dismukes. (2020, Dec. 21). *Update on Louisiana Greenhouse Gas Inventory* [Slides]. LSU Center for Energy Studies. <https://www.youtube.com/watch?v=0Yni2oNW-FQ>.



Louisiana has undertaken its own inventory of GHG sources and sinks first in 2000 and again in 2010. According to the 2010 inventory, Louisiana's GHG emissions total 228 million metric tons of carbon dioxide equivalent emissions gross and 215 million metric tons of carbon dioxide equivalent emissions of net sequestration from natural sinks in 2005. The overwhelming majority of these emissions were made up of carbon dioxide from fossil fuel combustion (84%).

Louisiana's GHG emissions portfolio by sector are unique when compared to the national average (see Figure 3). During his December 2020 presentation to the Task Force, Dr. Dismukes provided preliminary findings that, in 2018, Louisiana's industrial sector accounted for approximately two-thirds of the state's carbon dioxide emissions from fossil fuel combustion (66%), followed by the transportation sector (19%), and electric power (13%). By comparison, carbon dioxide emissions in 2018 nationally were primarily from the transportation and electric power sectors (36% and 35%, respectively) with industry ranking third (17%).

CO₂ Emissions per Sector, 2018

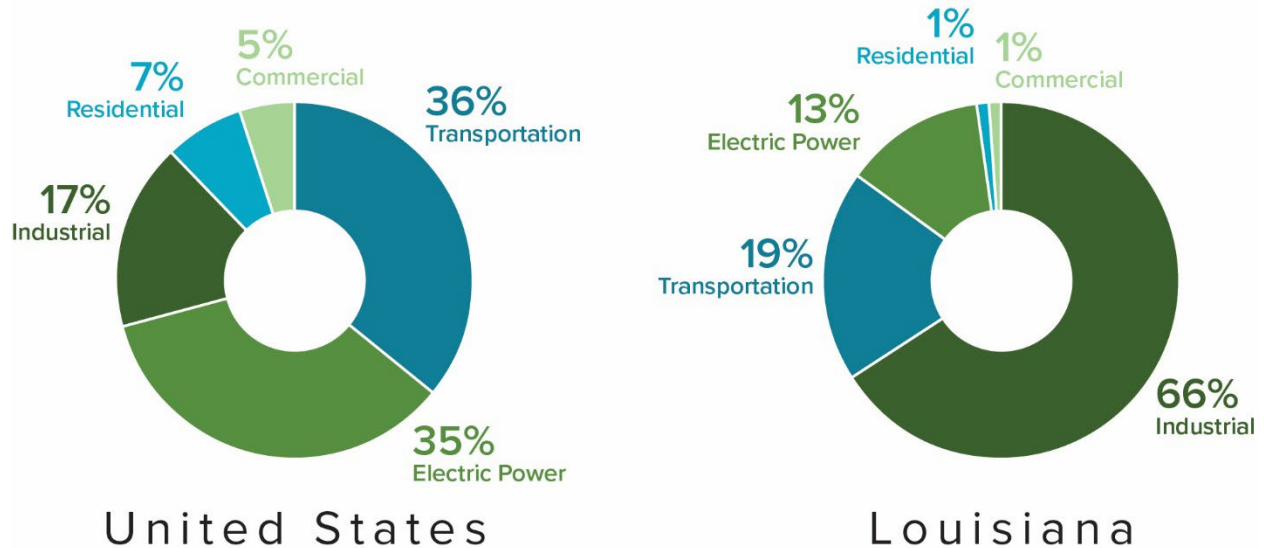


Figure 3 Comparing U.S. and Louisiana Emissions per Sector, 2018. Source: U.S. EPA, Inventory of U.S. GHG Emissions and Sinks: 1990-2018; and State CO₂ Emissions from Fossil Fuel Combustion, via David Dismukes presentation to the Task Force, December 2020.

2020 LOUISIANA EMISSIONS INVENTORY UPDATE

In order to focus and ground the work of the Task Force in the most up-to-date and accurate data regarding Louisiana's sources and sinks for GHGs, the State is updating its statewide GHG emissions inventory. Conducted by LSU's Center for Energy Studies and steered by the Task Force's Science Advisory Group, the 2020 study will again rely heavily on the EPA State Inventory Tool as it did in prior inventories, but additional options are being considered for supplementary ways to enhance the inventory. For example, the sequestration of carbon dioxide by wetland ecosystems was not explicitly



captured by earlier inventories, but the Science Advisory Group will ensure coordination with CPRA's effort to quantify the potential of these ecosystems to capture and store carbon dioxide. Options also exist to further break out GHG emissions by industrial sub-sector, which would allow the Task Force to examine the state's largest source of emissions in more detail.

Funding for the Task Force's update to Louisiana's Greenhouse Gas Emissions and Sinks has been made possible through a collaborative effort by Louisiana Economic Development, the Department of Natural Resources, the Department of Environmental Quality, and the Coastal Protection and Restoration Authority. Additional support for updated data on Louisiana's power generation sector was provided by The Nature Conservancy of Louisiana.

As the 2020 Louisiana Greenhouse Gas Inventory is prepared, the Task Force and the Science Advisory Group will take an active role in providing guidance and input on the report. A first, preliminary draft and report is expected three to four months from the start date and a final report and briefing after six months.

A keen understanding of the impacts of climate change affecting Louisiana, the state's role in contributing to greenhouse gas emissions, and the opportunities in taking action make up the problem context for the Climate Initiatives Task Force. The following section will outline the planning process that will be used to navigate and selection actions within that context.

Planning Process

Governor Edwards called on the Climate Initiatives Task Force to produce a Final Climate Report that outlines actions to reduce net GHG emissions for all sectors of the economy and to set Louisiana on a path to meet its short-, medium-, and long-term emission reduction targets. Actions and strategies will aim to reduce GHG emissions while achieving other co-benefits for Louisiana's communities, environment, and economy. Achieving this vision and the state's emission reduction goals in a manner that is inclusive and balanced requires a deliberate and transparent planning process.

The Task Force, its Sector Committees, and Advisory Groups comprise over 135 experts from state government, colleges and universities, the private sector, and civil society that will advise and contribute to the development of the Final Climate Report (see Figure 4).

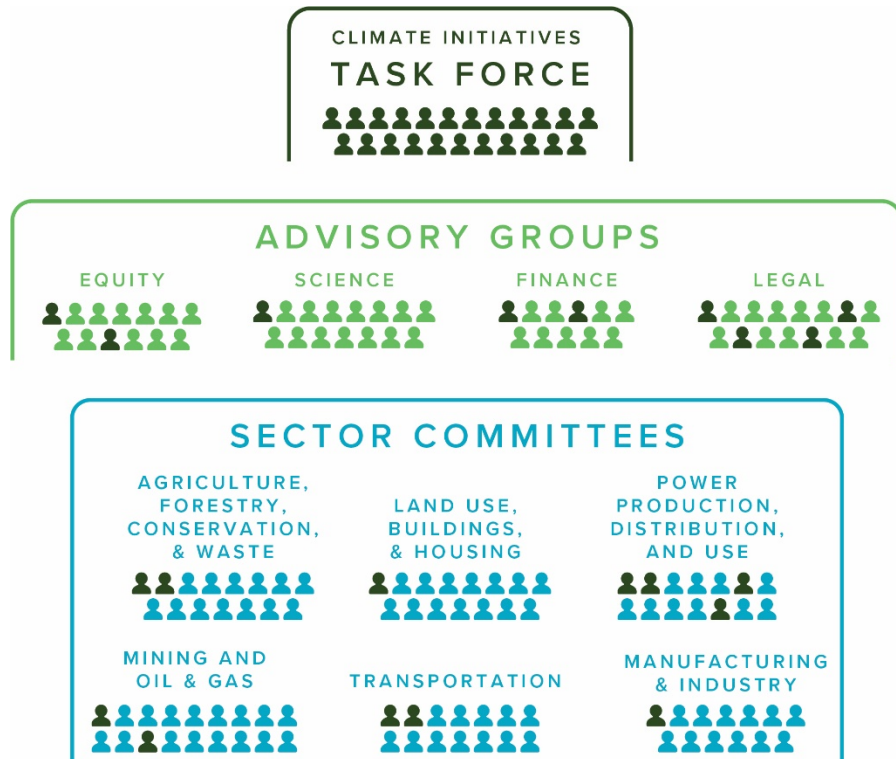


Figure 4 Climate Initiatives Organizational Structure

The Climate Initiatives Task Force is the decision-making body tasked with submitting an Interim and Final Climate Report to Governor Edwards in accordance with the executive order. This twenty-three-member body will set priorities for the overall planning process, weigh trade-offs among approaches, and ultimately decide which strategies are included in the Final Climate Report offered to the Governor.

Four **Advisory Groups** support the Task Force by offering expertise in four areas identified as fundamental tenets of this effort. Advisory Groups will evaluate comprehensive strategies through their respective lenses and work with Sector Committees to refine actions.

Six **Sector Committees** support the Task Force by offering expertise in specific sectors. Committees are charged with developing and evaluating actions and comprehensive strategies to reach short-, medium-, and long-term GHG emission reduction targets.

The Climate Initiatives Task Force is chaired and staffed by the Governor's Office of Coastal Activities (GOCA). Under leadership of the Executive Assistant to the Governor for Coastal Activities, GOCA serves as the staff and managers of the Task Force, Advisory Groups, and Sector Committees in coordination with advisory and committee chairs. As staff of this effort, GOCA also works alongside all members, state agencies, outside stakeholders, and the public to build investment in the process, expand partnerships, and coordinate among all entities. As Louisiana's Innovation and Collaboration Hub, the Water Institute of the Gulf (TWI), is assisting GOCA as it leads the planning process for and



development of the Final Climate Report. This Planning Team, comprised of GOCA and TWI, will ensure the Task Force remains on track to meet deliverables within their respective timelines.

STRUCTURED DECISION MAKING

The planning process for developing the Final Climate Report will be grounded in a Structured Decision Making (SDM) approach. In basic terms, SDM is “a formalization of common sense for decision problems which are too complex for informal use of common sense.”³¹ SDM is an approach that integrates science and policy to break down complex decisions and identify solutions that achieve the desired ends (referred to as “fundamental objectives” in SDM) in a manner that is explicit and transparent. SDM is not a prescriptive approach to problem solving, but rather it encompasses broad methods that rely on clearly articulating fundamental objectives and analyzing potential impacts to those objectives using data-driven analysis. See Figure 5 for the six steps of the iterative SDM process. The charges to the Sector Committees and Advisory Groups will support the SDM process and will help the Task Force make informed, data-driven decisions on which strategies to pursue to best meet the emission reduction goals and other desired outcomes for Louisiana.



Figure 5 The Six-Step SDM Process

³¹ Ralph L. Keeney. (1982.) Decision analysis: An overview. Operations Research 30(5): 803-838. Keeney RL. 2004. Making better decision makers. Decision Analysis 1:193-204.



The following iterative six-step SDM process provides the framework for the development of the Final Climate Report.

1. **Defining the Problem and Decision Context:** A critical first step is ensuring all parties share a common understanding of the problem that has initiated the process, as outlined in the Executive Order. This Draft Partial Final Report synthesizes the science on current and future risk to Louisiana posed by climate change that makes the case for reducing GHG emissions. An update to the state's GHG emissions inventory will be delivered in mid-2021 and provide an evidence basis for understanding the state's primary GHG emission sources and sinks.
2. **Determining the Objectives:** The Task Force has established a set of fundamental objectives that are essential goals of this effort and will guide the development and evaluation of actions and strategies. Fundamental objectives include reduction of net GHG emissions as well as economic and societal goals considered important in how co-benefits and consequences are evaluated. In addition, the Task Force and its committees have begun to identify means objectives, or ways to achieve the fundamental objectives. These means objectives support the identification of potential actions and strategies in step 3.
3. **Identifying Alternatives:** Proposed Actions (specific policies, programs, or projects) will be developed collaboratively by the Task Force, committees, advisory groups, and GOCA using a common template. A public call for ideas will further inform action development. Action proposals will take into consideration their impact to net GHG emissions and other fundamental objectives, feasibility concerns, implementation pathways, and climate equity considerations. Actions will be combined and organized into higher level strategies. Concurrently, GOCA will begin identifying and modeling alternative emission pathways for comprehensively meeting the net emission reduction targets.
4. **Forecasting Consequences:** The Advisory Groups and GOCA will evaluate the impact of actions, strategies, and alternative emission pathways on the fundamental objectives and collectively achieving the GHG emission reduction targets.
5. **Evaluating the Trade-offs:** This analysis will compare portfolios of strategies and actions based on their expected contribution to advancing the fundamental objectives of the Task Force, including reducing net GHG emissions to meet the state goals; maximizing the social, environmental, and economic co-benefits; and minimizing unintended consequences. This trade-off analysis will be presented to the Climate Task Force to inform their decisions about what strategies to pursue, using clear and transparent information.
6. **Making the Decision and Taking Action:** The Task Force will review the trade-off analysis, make decisions about which strategies within portfolios are to be pursued, and instruct the planning team on the contents of the Draft Final Report by the end of 2021. After incorporation of public comment, the Task Force will finalize the Final Climate Report by February of 2022, in accordance with the task set forth by the Governor.

Additional detail on the timeline, tasks, roles, and meetings associated with this planning process can be found at the end of this document.



Synthesized Fundamental Objectives

Fundament objectives are the essential goals of this effort and will guide the development and evaluation of actions and strategies. The fundamental objectives (in bold) are grouped here by theme. The Task Force, its Sector Committees, and Advisory Groups have already begun to develop means objectives as they progress towards developing strategies.

REDUCING NET GREENHOUSE GAS (GHG) EMISSIONS

- **Minimize greenhouse gas emissions.**
- **Maximize greenhouse gas capture and sequestration.**

The ultimate goal of the Task Force is to reduce net GHGs in Louisiana. The Task Force will consider all means by which GHG emissions can be reduced or captured and sequestered.

IMPROVING QUALITY OF LIFE FOR RESIDENTS AND COMMUNITIES

- **Maximize quality of and access to essential goods, services, and infrastructure for residents.**
- **Maximize positive public health outcomes and public safety.**
- **Maximize the preservation of cultural heritage.**

The Task Force will consider the impacts of GHG emissions reduction strategies on quality of life in Louisiana and craft strategies that improve quality of life in Louisiana.

CREATING A MORE EQUITABLE SOCIETY

- **Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes.**
- **Maximize reduction and mitigation of historic and structural inequities and their impacts for underserved and marginalized communities, including communities of color and Indigenous peoples.**
- **Maximize engagement with and participation of communities in decision-making and implementation.**

The Task Force will consider the impacts of GHG emissions reduction strategies across socioeconomic, demographic, and geographic groups and craft strategies that ameliorate historic and structural inequities to create a more equitable Louisiana.

MANAGING FOR SHORT- AND LONG-TERM SUCCESS

- **Maximize confidence of the public and stakeholders in the outcome of emissions-reduction strategies to increase support for their implementation.**



- **Maximize the efficiency and effectiveness of emissions-reduction strategies.**

- **Maximize timely implementation of emissions-reduction strategies.**

- **Maximize the durability of emissions-reduction strategies in an uncertain future.**

The Task Force will consider the pathways and obstacles to implementing GHG emissions reduction strategies and craft strategies that are durable and supported by Louisianans.

STRENGTHENING THE ECONOMY AND WORKFORCE

- **Maximize job creation and support for Louisiana workers.**

- **Maximize economic growth.**

The Task Force will consider the impact of GHG emissions reduction strategies on the economy and workforce and craft strategies that support Louisiana workers, foster free enterprise, and spur economic growth.

CONSERVING NATURAL RESOURCES & PROTECTING THE ENVIRONMENT

- **Maximize preservation of natural resources and ecosystem services.**

- **Maximize environmental stewardship and support of healthy ecosystems.**

The Task Force will consider how GHG emissions reduction strategies can also conserve, protect, or replenish the state's natural resources.

ADAPTING TO A CHANGING CLIMATE

- **Increase resilience of the built and natural environment to climate change.**

- **Increase the resilience of communities to climate change.**

The Task Force will consider the impacts of climate change on GHG emissions reduction strategies and craft strategies that increase climate resilience.

Committee and Advisory Group Reports

The seriousness and complexity of formulating actions to accomplish essential climate change emission reduction goals necessitates the inclusion of many voices from many different backgrounds. The structure of the Climate Initiatives Task Force, with its reliance on subject matter experts within Sector Committees and Advisory Groups, is a reflection of Governor Edwards' commitment to meeting that challenge.



Together these groups consist of over 120 members with vast experience in their respective fields who have volunteered to provide guidance to the state as it outlines which strategies will most effectively reduce Louisiana's greenhouse gas emissions.

The benefits of this approach are twofold. First, more effective actions can be developed when informed by subject matter experts. Sector Committees and Advisory Groups each have opportunities to propose actions and refine comprehensive strategies in an iterative process before they are submitted to the Task Force for adoption. The second benefit relates to implementation. By shaping decision making in a transparent, responsive manner that incorporates stakeholder and public input, there can be greater confidence in the ability for effective strategies to have the support needed to be adopted and implemented.

ADVISORY GROUPS

The four advisory groups are charged with providing technical expertise to the Task Force and committees throughout the process and upon request regarding questions that transcend individual committee scopes. While each of the four advisory areas are reflected in the membership of the Task Force and Sector Committees, specific opportunities to evaluate and improve actions and strategies are necessary to ensure the planning process accounts for equitable impacts, sound science, financial feasibility and economic implications, and legal considerations in each step. Over the course of their first meetings, Advisory Group members reviewed and discussed their charges.

EQUITY ADVISORY GROUP

The Equity Advisory Group was formed in recognition of the disparate impacts of climate change on vulnerable and marginalized populations and the transformational potential to use climate policy to address past injustices and build a stronger future with more equitable outcomes for all Louisianans. Its charge includes the following elements:

- *Define climate equity in the context of Louisiana, climate change, and GHG emissions reduction;*
- *Anticipate opportunities to increase equity and to reduce inequities in the design and implementation of GHG reduction strategies;*
- *Advise committees and the Task Force by identifying how proposed strategies to reduce emissions may mitigate or exacerbate historic or systemic inequities; and*
- *Assist committees in the development and structure of strategies and mechanisms that ensure equitable measures offer new opportunities for marginalized communities and increase equity in our society.*



876 EQUITY ADVISORY GROUP MEMBERSHIP

- 877 • **Colette Pichon Battle**, Gulf Coast Center for Law & Policy (Chair)
- 878 • **Charles Allen**, National Audubon Society
- 879 • **Jasmine Brown**, Greater New Orleans, Inc.
- 880 • **Steve Cochran**, Environmental Defense Fund
- 881 • **Dr. Kenny Cole**, Oschner
- 882 • **Dr. Craig Colten**, Louisiana State University
- 883 • **Chief Shirell Parfait-Dardar**, Grand Caillou/Dulac Band of the Biloxi-Chitimacha-Choctaw
- 884 • **Ashleigh Gardere**, Policy Link
- 885 • **Jessica Kemp**, Center for Planning Excellence
- 886 • **Dr. David Robinson Morris**, Xavier University
- 887 • **Liz Williams Russell**, Foundation for Louisiana
- 888 • **Larry Sorapuru Jr.**, St. John the Baptist

889 FINANCE ADVISORY GROUP

890 Addressing climate change carries economic implications for the State of Louisiana. The impacts of
891 climate change are already causing economic disruptions and imposing costs on people, businesses,
892 and governments. To take no action in the face of this crisis would pose additional economic risk.
893 There are also potential positive and negative economic tradeoffs associated with adopting
894 greenhouse gas mitigation policies. This advisory group will work to ensure that negative outcomes
895 from potential actions and strategies are not disproportionately carried by certain regions, industries,
896 types of workers, or communities and that opportunities presented by these policies are available to
897 all people. Its charge includes the following elements:

- 898
- 899 • *Evaluate the economic impacts of proposed policy changes, including the potential for growth*
900 *or development of new economic opportunities related to the adoption of certain policies or*
901 *technologies;*
- 902 • *Consider broader economic and market forces that may be pertinent to policy discussions;*
- 903 • *Evaluate options for mitigating or overcoming potential negative economic consequences*
904 *and/or maximizing the positive economic consequences of implementing certain proposed*
905 *policies;*
- 906 • *Consider workforce implications and opportunities associated with proposed policy directions*
907 *(including K-12 and higher education considering the long-term nature of this issue);*
- 908 • *Offer proactive and overarching financial and economic impact guidance;*
- 909 • *Contemplate the cost of not taking action on climate change;*
- 910 • *Consider the distribution of costs and benefits of policies for equity purposes (race, class, age,*
911 *and other) but also geographically across the state and across industries; and*
- 912 • *Evaluate opportunities within the financial system to implement proposed solutions.*



913 FINANCE ADVISORY GROUP MEMBERSHIP

- 914 • **Brad Lambert**, Louisiana Economic Development (Chair)
- 915 • **Dr. Stephen Barnes**, University of Louisiana Lafayette
- 916 • **Camille Conaway**, Louisiana Community and Technical College System
- 917 • **Pierre Conner**, Tulane Energy Center
- 918 • **Stephanie Ferry**, Raymond James Financial
- 919 • **Alejandra Guzman**, New Orleans Business Alliance
- 920 • **Michael Jackson**, Bernhard Capital
- 921 • **Vic Lafont**, South Louisiana Economic Council
- 922 • **Brandon Nelson**, Whitney Bank
- 923 • **Dr. Jim Richardson**, Louisiana State University
- 924 • **Jeff Schwartz**, City of New Orleans

925 LEGAL ADVISORY GROUP

926 The implementation of emission reduction actions and strategies may require changes to laws or
927 regulations, which must be considered throughout the planning process. The Legal Advisory Group will
928 identify legal barriers that may impede the implementation of greenhouse gas reduction strategies,
929 and the group will suggest changes to policies, regulations, and laws when needed to ensure that
930 adoption and implementation is achievable. Its charge includes the following elements:

- 931
- 932 • *Anticipate legal hurdles that may arise in the design, implementation, and effect of GHG*
- 933 *emission reduction strategies;*
- 934 • *Assist committees in the development and modification of most effective mechanisms to*
- 935 *implement just and equitable emission reduction strategies; and*
- 936 • *Advise committees and the Task Force on supplementary strategies and mechanisms for*
- 937 *consideration.*

938 LEGAL ADVISORY GROUP MEMBERSHIP

- 939 • **Rob Verchick**, Loyola Law School (Chair)
- 940 • **Harry Vorhoff**, Governor's Office of Coastal Activities
- 941 • **Faye Matthews**, National Wildlife Federation
- 942 • **Timothy Hardy**, Breazeale, Sachse, & Wilson, LLP
- 943 • **Mark Davis**, Tulane Law School
- 944 • **Blake Canfield**, Louisiana Department of Natural Resources
- 945 • **Courtney Burdette**, Louisiana Department of Environmental Quality
- 946 • **Tokesha Collins-Wright**, Louisiana Chemical Association
- 947 • **Susan Margaret Floyd**, Entergy
- 948 • **Tyler Gray**, Louisiana Mid-Continent Oil & Gas Association
- 949 • **Monique Hardin**, Deep South Center for Environmental Justice
- 950 • **Karen Sokel**, Loyola Law School



- **Nick Bryner**, Louisiana State University
- **Brandon Frey**, Public Service Commission
- **Erin Spears**, New Orleans City Council

SCIENCE ADVISORY GROUP

The need to base the state's actions on a strong foundation of science is one of the most basic premises of Governor Edwards' approach to the issue of climate change. The Science Advisory Group is made up of numerous subject matter experts able to review and provide overarching technical and scientific guidance to sector committees and the Task Force. They will also be a resource to the Task Force to discuss any technical or scientific issues that may arise through the course of discussions. Another function of the Science Advisory Group is to provide input and guidance in the development of the State's updated 2020 Inventory of Greenhouse Gas Emissions and Sinks, a crucial data point for evaluating where and how to best focus efforts to meet the GHG emissions reductions goals in the executive order. Its charge includes the following elements:

With regard to the development and review of emissions reduction strategies:

- *Provide scientific guidance to GOCA, Sector Committees, and the Task Force in developing strategies that will collectively support the GHG emission targets established in the Executive Order;*
- *Provide guidance on minimum/medium/maximum technical expectations of GHG emission reduction strategies. At a minimum, guidelines will identify common approaches for communicating uncertainties, units to be utilized, scientific justification, and glossary of terms;*
- *Advise Task Force and GOCA on core components of net GHG emission reduction strategies for consistency and to ensure that strategies are cumulative across sectors, including all major sources and sinks. Address advantages and hazards associated with emission reduction strategies (and risks and costs of not doing anything), emission reduction capabilities, and co-benefits;*
- *Coordinate and interact with experts from the Sector Committees to develop GHG emission reduction strategies and offsets that collectively achieve the net GHG emission reduction goals;*
- *Review proposed strategies developed by the Sector Committees and Task Force for scientific and technical merit based on set minimum technical guidance and core components; and*
- *Assist Sector Committees in identification of databases and literature related to potential solutions that have a high amount of uncertainty.*

With regard to the development of reports and the GHG inventory update:

- *Provide scientific guidance on the technical foundation used in the development of Task Force reports; and*



- *Review and provide comments on the methods and science behind the update to the Louisiana GHG emissions inventory.*

SCIENCE ADVISORY GROUP MEMBERSHIP

- **Dr. Virginia Burkett**, United States Geological Survey (Co-chair) (Non-Voting Member)
- **Dr. Mark Zappi**, University of Louisiana at Lafayette (Co-chair)
- **Eric Smith**, Tulane University
- **Dr. Carrie Castille**, United States Department of Agriculture
- **Dr. Monica Farris**, University of New Orleans
- **Dr. Kalliat Valsaraj**, Louisiana State University
- **Dr. Jean Fotie**, Southeastern Louisiana University
- **Dr. Raj Boopathy**, Nicholls State University
- **Dr. Camille Stagg**, United States Geological Survey
- **Dr. Alex Kolker**, Louisiana Universities Marine Consortium
- **Dr. Peng “Solomon” Yin**, University of Louisiana Lafayette
- **Dr. Kimberly Foster**, Tulane University
- **Dr. Mehdi Zeidouni**, Louisiana State University
- **Dr. Chang Jeong**, Louisiana State University
- **Dr. Richard Keim**, Louisiana State University

SECTOR COMMITTEES

Greenhouse gas emission sources and sinks are present in all aspects of the Louisiana economy. To acknowledge the progress already being made and discuss the specific opportunities to reduce emissions from a broad range of operations and activities in each sector, the Task Force established six emission sector-based committees. Committees are charged with developing and evaluating implementable emission reduction actions and comprehensive strategies that significantly reduce net greenhouse gas emissions across all aspects of the sector. Committees are reflective of the Governor’s vision to achieve balance through their broad-based composition with representatives from corporate entities, advocacy organizations, regulators, academics, and community representatives. Bringing together a variety of stakeholders with seemingly separate interests and opposing values allows for robust and challenging discussions that ensure the end result of comprehensive strategies that set Louisiana on a path to reach short-, medium-, and long-term greenhouse gas emission reduction goals. The following sections denote membership in each group and explore the need for and charge of each group.

AGRICULTURE, FORESTRY, CONSERVATION, AND WASTE

According to the 2010 Louisiana GHG Emissions Inventory, Agriculture, Forestry, Conservation and Waste activities accounted for under four percent of statewide GHG emissions and a nearly six percent sink, leaving this sector with a net negative impact on Louisiana’s emissions. Though source



contributions are minimal in agriculture and forestry, GHG emission-reducing actions in this sector will be considered alongside opportunities to enhance carbon sequestration such as through the conservation of agricultural and forested lands, coastal wetlands, and shoreline habitats in Louisiana. Its charge includes the following elements:

Examine opportunities to reduce GHG emissions and increase carbon storage capacity through agriculture and forestry practices, conservation measures that promote natural carbon sinks, blue carbon opportunities, and waste management.

AGRICULTURE, FORESTRY, CONSERVATION, AND WASTE MEMBERSHIP

- **Joey Breaux**, Louisiana Department of Agriculture and Forestry (Co-chair)
- **Karen Gautreaux**, The Nature Conservancy (Co-chair)
- **Naveen Adusumilli**, LSU AgCenter
- **Kyla Cheynet**, Drax
- **David Daigle**, Farmer, Cattleman, and Forester
- **Ernest Girouard**, State Soil and Waste Conservation District Commission
- **Gregory Grandy**, Coastal Protection and Restoration Authority
- **Ron Harrell**, Louisiana Farm Bureau Federation
- **Fran Harvey**, Global Geospatial Institute
- **Justin Kozak**, Center for Planning Excellence
- **Michael Lindsey**, USDA Natural Resources Conservation Service (Non-voting member)
- **John Pitre**, USDA Natural Resources Conservation Service (Non-voting member)
- **Yolunda Righteous**, Louisiana Department of Environmental Quality
- **Robby Toombs**, Resource Management Service LLC
- **Buck Vandersteen**, Louisiana Forestry Association

LAND USE, BUILDINGS, AND HOUSING SECTOR COMMITTEE

Direct emissions in the Land Use, Buildings, and Housing Sector are primarily the result of commercial and residential buildings, which amount to one percent of statewide emissions and 18% of end-use energy consumption, according to the 2010 Louisiana GHG Emissions Inventory. Beyond its direct emissions, however, activities in this sector also determine development patterns, building materials, and building practices used during the development process, which can have a tremendous impact on emissions from other sectors like transportation and contribute to the negative impacts of climate change such as those from urban heat islands and floodwater management. Recognizing the many opportunities to reduce GHG emissions, manage the impacts of climate change, and partner with other related sectors to co-develop policies, the Land Use, Buildings, and Housing Sector Committee's charge includes the following elements:

- *Determine what changes to land use patterns and building regulations are needed to reduce GHG emissions and mitigate future risks from climate change impacts;*



- 1062 • *Identify opportunities for state agencies to guide land use towards smarter growth patterns*
1063 *that not only reduce emissions but also provide multiple community benefits in the areas of*
1064 *transportation, housing, risk reduction, adaptation, public health and economic development;*
- 1065 • *In the absence of state authority over land use, leverage other areas of state influence and*
1066 *authority to advance land use goals;*
- 1067 • *Ensure that policies guiding building codes, land use and housing reduce GHG emissions in a*
1068 *manner that is equitable and considers the physical and mental health of all residents;*
- 1069 • *Determine changes necessary to improve building codes, construction and remodeling*
1070 *practices, and materials to increase energy efficiency and reduce GHG emissions;*
- 1071 • *Identify opportunities to help make those that have been bearing the brunt of climate change*
1072 *impacts whole again. Ensure that communities and groups that have been disproportionately*
1073 *affected are not left out of the solutions or benefits proposed by this committee;*
- 1074 • *Identify opportunities to coordinate policy development and solutions across government,*
1075 *nonprofit, and private sectors (transportation, power production, housing, public health,*
1076 *economic development, and others);*
- 1077 • *Identify policies to incentivize the implementation of green infrastructure and greenspaces as*
1078 *a means of meeting carbon goals and achieving multiple benefits such as reducing heat island*
1079 *effects, improving drainage and water quality, improving public health, neighborhood*
1080 *aesthetics, property values, and others; and*
- 1081 • *Identify strategies and tools to promote development of climate-resilient housing and sustain*
1082 *community cohesion, culture and viability in the face of increasing climate risk.*

1083 **LAND USE, BUILDINGS, AND HOUSING MEMBERSHIP**

- 1084 • **Gina Campo**, Office of Community Development (Co-chair)
- 1085 • **Camille Manning-Broome**, Center for Planning Excellence (Co-chair)
- 1086 • **Dr. Fallon Aidoo**, University of New Orleans
- 1087 • **Camille Pollan**, U.S. Green Buildings Council
- 1088 • **Dr. Kevin Conrad**, Ochsner
- 1089 • **Archie Hall**, Siemens Smart Infrastructure
- 1090 • **Mark Goodson**, CSRS
- 1091 • **Arthur Johnson**, Lower 9th Ward Center for Sustainable Engagement and Development
- 1092 • **Kim Marousek**, Capital Region Planning Commission
- 1093 • **Andreanecia Morris**, Greater New Orleans Housing Alliance
- 1094 • **Dr. Zhu Ning**, Southern University
- 1095 • **Louissette Scott**, City of Mandeville
- 1096 • **Z Smith**, Eskew, Dumez, Ripple
- 1097 • **Chris Tyson**, Build Baton Rouge
- 1098 • **Jason Hewitt**, Sustainability Partners



1099 MANUFACTURING AND INDUSTRY SECTOR COMMITTEE

1100 Manufacturing and Industry is one of the strongest yet most carbon intensive elements of Louisiana's
1101 economy. This sector creates GHG emissions through combustion and non-combustion related
1102 industrial processes. Industrial processes account for nearly half of Louisiana's total emissions from
1103 fossil fuel combustion, according to the 2010 Louisiana GHG Emissions Inventory, and non-
1104 combustion activities, such as the production of HCFC-22, Ammonia, Urea, and Nitric Acid, account for
1105 less than one percent of total carbon emissions. However, GHG emissions from industrial processes
1106 encompass more than carbon dioxide and often emit nitrous oxide, hydrofluorocarbons,
1107 polyfluorinated chemicals, and sulfur hexafluoride, which are far more potent greenhouse gases than
1108 carbon dioxide. To address this wide range of emission contributors, this committee's charge includes
1109 the following elements:

- 1110
- 1111 • *Examine opportunities to reduce GHG emissions within the manufacturing and industrial*
1112 *sectors, including chemical manufacturing, petrochemical manufacturing, petroleum*
1113 *refining, liquefied natural gas, and other operations within the state; and*
- 1114 • *This committee will consider opportunities to deploy cleaner sources of energy to fuel*
1115 *operations, enhance efficiencies, reduce unintentional releases, capture and sequester or*
1116 *reuse emissions, offset emissions, and other measures that reduce net emissions from*
1117 *combustion and non-combustion manufacturing and industrial activities in Louisiana.*

1118 MANUFACTURING AND INDUSTRY MEMBERSHIP

- 1119 • **Jason Meyers**, Department of Environmental Quality (Co-chair)
- 1120 • **Timothy Hardy**, Breazeale, Sachse, & Wilson, LLP (Co-chair)
- 1121 • **Tokesha Collins-Wright**, Louisiana Chemical Association
- 1122 • **Morris Johnson**, CF Industries
- 1123 • **Gray Stream**, Gulf Coast Sequestration
- 1124 • **Margo Moss**, L&M Environmental
- 1125 • **Rhoman Hardy**, Shell
- 1126 • **Daniel Shantz**, Tulane Engineering
- 1127 • **Nathan McBride**, Louisiana Mid-Continental Oil and Gas Association
- 1128 • **Zen Saunders**, Dow Chemical
- 1129 • **Hunter Johnson**, Lake Charles Methanol
- 1130 • **Marylee Orr**, Louisiana Environmental Action Network
- 1131 • **Scott Anderson**, Environmental Defense Fund

1132 MINING, OIL, AND GAS SECTOR COMMITTEE

1133 Another prevalent fixture of the Louisiana economy is mining and oil and gas. GHG emissions from this
1134 sector result from the production, transmission, distribution, and flaring of natural gas as well as from
1135 oil systems and coal mining, which account in total for nearly six percent of statewide GHG emissions,
1136 according to the 2010 Louisiana GHG Emissions Inventory. Mining activities also produce large



amounts of methane but are relatively limited in Louisiana. This committee will explore emissions reductions in each of these components of the sector through the following charge:

- Examine opportunities to reduce greenhouse gas emissions throughout the mining, extraction, production, and transportation of oil and gas. This committee will consider carbon capture and sequestration, opportunities to enhance efficiencies and eliminate fugitive emissions, and other measures related to active and inactive elements of this sector.*

MINING, OIL, AND GAS MEMBERSHIP

- Jason Lanclos**, Louisiana Department of Natural Resources (Co-chair)
- Brent Campbell**, Louisiana Department of Natural Resource Office of Conservation (Co-chair)
- Lori LeBlanc**, Louisiana Mid-Continental Oil and Gas Association
- Bryan Johnston**, Louisiana Department of Environmental Quality
- William Daniel**, Gulf Coast Testing
- Selby Bush**, BHP
- Kristi Trail**, Pontchartrain Conservancy
- Dr. Richard Hughes**, Louisiana State University
- Al Collins**, Occidental Petroleum
- Donelson Caffrey**, Landowners Association
- Adam Peltz**, Environmental Defense Fund
- Tom Broom**, Danos
- Mark Gebbia**, Williams
- Glen Lyons**, ExxonMobil
- John Sparling**, Aethon Energy
- Wynn Radford**, British Petroleum
- Andy Jacoby**, Attorney
- Stacy Methvin**, Pioneer

POWER PRODUCTION, DISTRIBUTION, AND USE

Electricity production, transmission, distribution, and use are essential components of any economy. This industry provides the power to meet the demands of end-users of every type in every industry. Nationally, this sector is the second largest source of greenhouse gas emissions just behind transportation, accounting for 1,753 million metric tons of carbon dioxide equivalent in 2018.³² Emissions from this sector nationally have been declining since 2005 as the fuel mix for electricity generation nationwide has shifted from being 50% reliant on coal to 30%, attributed to the cleaner burning fuels.³³ Louisiana's electric utilities are the third largest source of greenhouse gas emissions

³² EPA greenhouse gas inventory page ES-12 <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf>



in the state accounting for just over 35% of emissions in 2018. This smaller share of emissions compared to the national picture is the result of the prevalence of natural gas and nuclear power as a fuel source in Louisiana. Approximately 70% of all power was produced using natural gas in 2019³⁴. This smaller share of emissions compared to the national picture is the result of the prevalence of natural gas as a fuel source in Louisiana. Approximately 70% of all power was produced using natural gas in 2019. The charge for the Power Production, Distribution, and Use Sector Committee aims to:

- *Capture and evaluate how the already announced proposals and plans to reduce emissions by Louisiana's utilities will bring us closer to the statewide climate goals;*
- *Explore ways to create additional greenhouse gas emissions reductions that can produce results in the near-term and pave the way for improvements in other sectors;*
- *Encourage the growth of renewable energy adoption by Louisiana's utilities and end-use consumers;*
- *Promote energy efficiency to reduce energy waste across all sectors, including buildings and industry.*
- *Investigate opportunities to increase efficiency and reduce emissions at existing power generation facilities and through the development of more efficient generation, including cogeneration;*
- *Consider how increasing market demands for renewable energy and the electrification of more aspects of the economy will need to be accounted for;*
- *Explore utilization of, and limitations to, transmission networks necessary to broaden access to renewable energy to Louisiana users and potentially facilitate the export of renewable energy produced in Louisiana to out-of-state customers;*
- *Consider how changes to energy use, demand, load distribution, and greater reliance on renewables will impact utility operation or plans;*
- *Consider how reliability, affordability and price competitiveness of energy can be maintained and improved for customers today and in the future including long-term resilience to natural disasters; and*
- *Explore additional opportunities for carbon capture and sequestration to reduce emissions, whether by technological or natural applications.*

POWER PRODUCTION, DISTRIBUTION, AND USE MEMBERSHIP

- **Jonathan Bourg**, Entergy (co-chair)
 - **Bill Robertson**, Public Service Commission (co-chair)
 - **Jeff Arnold**, Association of Louisiana Electric Cooperatives
 - **Logan Atkinson-Burke**, Alliance for Affordable Energy
-



- 1206 • **Brian Bond**, SWEPCO
- 1207 • **Ethan Case**, Heelstone Energy
- 1208 • **Dr. Terrence Chambers**, University of Louisiana Lafayette
- 1209 • **David Guerry**, Midcontinent Independent System Operator
- 1210 • **Robbie Laborde**, CLECO
- 1211 • **Katherine King**, Kean Miller
- 1212 • **Simon Mahan**, Southern Renewable Energy Association
- 1213 • **Kim Talus**, Tulane Energy Law
- 1214 • **Rob Verchick**, Loyola University
- 1215 • **Matt White**, Drax

1216 TRANSPORTATION SECTOR COMMITTEE

1217 In Louisiana, mobile transportation emissions are 26% of total state emissions, according to the 2010
1218 Louisiana GHG Emissions Inventory, with sources from aircraft, passenger cars and motorcycles, light-
1219 duty trucks, heavy-duty vehicles, farm and construction vehicles, and boats. Passenger cars and
1220 motorcycles account for almost half of mobile emissions with another third of emissions ascribed to
1221 light-duty trucks. The 2010 Louisiana GHG Emissions Inventory notes that mobile emission source
1222 levels have decreased since 1990 attributed to burning of cleaner fuels and production of more
1223 efficient vehicles. To address these emission sources, this sector committee will take as its charge to:

1224
1225 *Examine opportunities to lower greenhouse gas emissions from highway and non-highway mobile*
1226 *emission sources. Opportunities to promote alternative and renewable fuels, idle-reduction measures,*
1227 *fuel economy improvements, new transportation technology, and cleaner modes of transportation will*
1228 *all be considered.*

1229 TRANSPORTATION MEMBERSHIP

- 1230 • **Flozell Daniels**, Foundation for Louisiana (Co-chair)
- 1231 • **Dr. Eric Kalivoda**, Department of Transportation and Development (Co-chair)
- 1232 • **Vivian Johnson**, Louisiana Department of Environmental Quality
- 1233 • **Dr. Bethany Stich**, UNO Transportation Institute
- 1234 • **Dr. Vijaya Gopu**, Louisiana Transportation Research Center
- 1235 • **Chett Chiasson**, Port Fourchon
- 1236 • **Scott Gammel**, Alexandria International Airport
- 1237 • **Wyly Gifloil**, Lake Providence Port Commission
- 1238 • **Kent Rogers**, Northwest Louisiana Council of Governments
- 1239 • **Dinero Washington**, SPORTRAN Transit
- 1240 • **Jessica Kemp**, Center for Planning Excellence
- 1241 • **Ann Vail**, LA Clean Fuels
- 1242 • **Joe Annotti**, Gladstein, Neandross & Associates
- 1243 • **Alex Posorske**, Ride New Orleans
- 1244



1245 **Work Plan and Meeting Schedule**

1246 On the following pages, please find a detailed work plan with identified roles and responsibilities
1247 and a full meeting schedule for the Climate Initiatives Task Force, Sector Committees, and
1248 Advisory Groups.
1249
1250

