



# CONSEQUENCE ANALYSIS OF THE DRAFT PORTFOLIO OF CLIMATE STRATEGIES AND ACTIONS

*In Support of the Climate Initiatives Task Force Development of a  
Louisiana Climate Action Plan*

<b>To:</b>	Louisiana Governor's Office of Coastal Activities
<b>From:</b>	The Water Institute of the Gulf
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<b>Re:</b>	Louisiana Climate Initiatives Task Force Draft Strategy & Action Portfolio Consequence Analysis

## INTRODUCTION

The Louisiana Climate Initiatives Task Force (Task Force) was established by Governor John Bel Edwards in August 2020 through [Executive Order JBE 2020-18](#), which committed the state to reducing the state's greenhouse gas (GHG) emissions to net zero GHG emissions by 2050. The EO sets intermediate goals of reducing GHG emissions by 26-28 percent of 2005 levels by 2025 and by 40-50 percent of 2005 levels by 2030, and it also seeks to achieve these goals while improving the health and welfare of the people of Louisiana and advancing Louisiana's economic and energy profile. As part of that effort, the Water Institute of the Gulf helped facilitate a collaborative planning process of the Task Force that included two consequence analyses to evaluate the impact of potential policies, strategies, and actions on net GHG emissions as well as other goals identified by the Task Force related to quality of life, equity, economy, and the environment.

The first consequence analysis (DeJong et al., 2022) evaluated the impacts of a "business-as-usual" case (BAU; no targeted effort to reduce net GHG emissions for Louisiana) as well as a set of four "hypothetical strategy portfolios," (hypothetical combinations of GHG reduction strategies) designed to evaluate what the outcomes for different types of GHG-reduction strategies might be. This Technical Memorandum presents the results of the second consequence analysis, which focused on evaluating the impacts of a single, more balanced set of strategies and actions that were developed as the initial basis of a recommended portfolio and path forward for Louisiana (i.e., the draft portfolio of climate strategies and actions). The draft portfolio for this analysis was developed based on actions and strategies submitted by



the public, the Task Force, Sector Committees (SCs) and Advisory Groups (AGs) engaged in the Climate Action Plan development process, and the Planning Team, which consisted of representatives of the Governor’s Office of Coastal Activities (GOCA) and the Water Institute of the Gulf (the Water Institute). The development of this portfolio also included consideration of the results of the first consequence analysis.

Following the second consequence analysis, the portfolio was revised based on the findings described herein and additional feedback received from the Task Force, AGs, SCs, and the public. The revised portfolio was then used in a final GHG emissions modeling effort. The details of the final model based on the revised portfolio are provided in Appendix A. The final Climate Action Plan (Climate Initiatives Task Force, 2022) provides further information related to the overall Task Force planning process.

## STUDY OBJECTIVES

The purpose of the consequence analysis described herein was to evaluate the GHG reduction potential of a draft portfolio of climate strategies and actions, as well as to evaluate the impacts of that portfolio on the people, economy, and environment of Louisiana. These outcomes were evaluated a set of “Fundamental Objectives” (FOs; Table 1). FOs were developed by the Task Force to refine and improve the strategies and actions that would eventually comprise the Louisiana Climate Action Plan (Climate Initiatives Task Force, 2022).

*Table 1. Fundamental objectives (FOs) developed for the Louisiana Climate Action Plan (2022). Note: the FOs for “Creating a More Equitable Society” and “Strengthening the Economy and Workforce” were modified with input from the Task Force midway through the planning process, therefore the text here is identical to the Louisiana Climate Action Plan but varies slightly from text used in the first round of consequence analysis.*

Category	FO
<b>1. Reducing Net Greenhouse Gas (GHG) Emissions</b>	Minimize net greenhouse gas emissions
<b>2. Improving Quality of Life for Residents and Communities</b>	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
<b>3. Creating a More Equitable Society</b>	Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes
	Maximize reduction and mitigation of historical 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
<b>4. Managing for Short- and Long-Term Success</b>	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



Category	FO
	Maximize the durability of emissions-reduction strategies in an uncertain future
<b>5. Strengthening the Economy and Workforce</b>	Maximize employment, economic opportunity, and support for Louisiana workers
	Maximize economic growth
<b>6. Conserving Natural Resources &amp; Protecting the Environment</b>	Maximize preservation of natural resources and ecosystem services
	Maximize environmental stewardship and support of healthy ecosystems
<b>7. Adapting to a Changing Climate</b>	Increase resilience of the built and natural environment to climate change
	Increase the resilience of communities to climate change

## ANALYSIS METHODS

### DRAFT PORTFOLIO OF CLIMATE STRATEGIES AND ACTIONS

The draft portfolio of climate strategies and actions reviewed in the second consequence analysis contained strategies and specific action concepts across nine priority areas:

- Clean Energy Transition;
- Industrial Decarbonization;
- Safe and Resilient Energy and Infrastructure for Tomorrow’s Needs;
- Actively Manage Methane Emissions
- Transportation, Development, and the Built Environment;
- Natural and Working Lands and Wetlands;
- An Inclusive, Low-Carbon Economy;
- Collaboration and Partnerships to Ensure Successful Implementation;
- Accountability and Adaptability to Ensure Lasting Success.

The draft portfolio of climate strategies and actions evaluated during the second consequence analysis is presented in Appendix B in the same form as that provided to the AGs and used in the GHG analysis, dated August 23, 2021. The actions were developed based on input from members of the Task Force’s six SCs and submissions from the public (Governor’s Office of Coastal Activities, 2021). The actions were also informed by feedback from the Task Force’s AGs during the first consequence analysis and by research on best practices in other states. Development also included consideration of Task Force meetings, cross-sector workshops, and public comment periods. With the exception of the “Collaboration and Partnerships to Ensure Successful Implementation,” priority areas include multiple actions (specific policies, approaches, etc.) organized into higher-level strategies.



## GHG ANALYSIS

### Establishing Policy Settings for the Energy Policy Simulator Tool

The GHG component of this analysis was conducted using a model developed by Energy Innovation termed the [Energy Policy Simulator \(EPS\) modeling tool](#). To analyze the consequences of the draft strategy and action portfolio, this analysis began by developing a comparison table, also known as a crosswalk, between the draft portfolio and the available climate policies within the EPS tool. This crosswalk of available policies to model and the draft portfolio of climate strategies and actions was reviewed and iterated multiple times by the Water Institute and GOCA. Additional recommendations were made by the EPS tool developers at Energy Innovation.

Strategy-level analysis was then conducted using the EPS tool. User assumptions around certain policy settings (i.e., intensity, schedule, etc.) were examined. The strategy-level policy settings were then combined into a portfolio-wide analysis to characterize additional interactions between specific policies. Exploration of different policy settings and the relationships between different policies and their relative effectiveness in reducing emissions ultimately informed strategy and action refinement for the Louisiana Climate Action Plan.

### Visualization of Model Output Against the U.S. Nationally Determined Contribution Scenario

The built-in outputs within EPS include a comparison to a downscaled U.S. Nationally Determined Contribution (US NDC) scenario for Louisiana, as well as different breakdowns of emissions, fuel demand, generation, etc. by sector, and outputs related to economy, health, technology, cost estimates, and other issues relevant to decision makers. These additional model outputs were reviewed for their potential to inform decision making for the Task Force. The US NDC scenario, built within the EPS tool by Energy Innovation, was used to understand the relative magnitude and relationships of different climate policies available in the EPS tool. The US NDC scenario was also a starting point for developing some policy settings that were difficult to fine-tune without more specific local information (e.g., Industry Energy Efficiency Standards). The final set of policies used for this analysis in EPS are listed in Table 2.



Table 2. Alignment between draft Climate Action Plan strategies and policies implemented in the EPS for the second round GHG consequence analysis. Inputs related to schedule and intensity along with the rationale are also provided. Instances where US NDC scenario settings were used are noted. A full list of policy descriptions for the EPS is provided at <https://us.energypolicy.solutions/docs/policy-design-index.html>.

Strategy	EPS Policies	Schedule and Intensity	Rationale
(1) Shift towards a clean, renewable, and resilient power grid	<ul style="list-style-type: none"> <li>• <a href="#">Clean Electricity Standard</a> at 50% by 2035, 100% by 2050</li> <li>• <a href="#">Early Retirement of Power Plants</a> at 500MW per year (Coal, Non-Peaker Natural Gas, and Lignite only)</li> <li>• <a href="#">Carbon Capture and Sequestration</a> on Nat Gas Peaker and Nonpeaker, Biomass at 95% of emissions captured</li> </ul>	Retirement scheduling: 25% by 2025, 50% by 2030, 100% by 2050	CCS setting is to match what's specified in Action 1.1.
(2) Increase renewable electricity generation and access	<ul style="list-style-type: none"> <li>• <a href="#">Distributed Solar Carve-out</a> at 20%</li> <li>• <a href="#">Distributed Solar Subsidy</a> at 30%</li> <li>• <a href="#">Retrofit Existing Buildings</a> (Urban Residential) at 5%</li> <li>• <a href="#">Rebate for Efficient Products</a>: Heating, Cooling and Ventilation, Appliances</li> <li>• <a href="#">Cogeneration and Waste Heat Recovery</a> at 100% of potential achieved by 2050</li> </ul>	Carve-out: 50% by 2030, 100% by 2050 Subsidy: 100% by 2023 Rebates: 100% by 2023	Distributed Solar policies approximate for Actions 2.1, 2.5, 2.6. Retrofits and rebates are for Action 2.5.
(3) Monitor, inventory, certify, and support industrial decarbonization	<i>None – enabling actions for Strategy 4 and Strategy 5</i>		
(4) Improve efficiencies and modernization of industrial processes	<ul style="list-style-type: none"> <li>• <a href="#">Improved System Design</a> at 100%</li> <li>• <a href="#">Industry Energy Efficiency Standards</a> (see intensity to the right)</li> </ul>	Standards set at <b>14%</b> for all fuels for the following industries: Oil and Gas Extraction, Refined Petroleum and Coke, Chemicals, Other Manufacturing, and Energy Pipelines and Gas Processing – 50% by 2030, 100% by 2050	In absence of target specified in actions, used same efficiency target as was set in the US NDC scenario
(5) Accelerate industrial electrification and fuel switching	<ul style="list-style-type: none"> <li>• <a href="#">Carbon Capture and Sequestration</a>: 50% for Chemicals Process Emissions, Cement Process Emissions, and Iron and Steel Process Emissions</li> <li>• <a href="#">Industrial Electrification and Hydrogen</a> (see intensity to the right)</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture and Forestry Shift to Electricity: 90%</li> <li>• Coal Mining Shift to Electricity: 92%</li> <li>• Coal Mining Shift to Hydrogen: 8%</li> <li>• Oil and Gas Extraction Shift to Electricity: 92%</li> <li>• Oil and Gas Extraction Shift to Hydrogen: 8%</li> <li>• Other Mining and Quarrying Shift to Electricity: 92%</li> </ul>	Used fuel switching targets from the US NDC scenario



Strategy	EPS Policies	Schedule and Intensity	Rationale
	<ul style="list-style-type: none"> <li>• <u>Direct Air Capture R&amp;D</u> at 100% (no impacts by 2050)</li> </ul>	<ul style="list-style-type: none"> <li>• Other Mining and Quarrying Shift to Hydrogen: 8%</li> <li>• Food Beverage and Tobacco Shift to Electricity: 88%</li> <li>• Food Beverage and Tobacco Shift to Hydrogen: 12%</li> <li>• Textiles Apparel and Leather Shift to Electricity: 92%</li> <li>• Textiles Apparel and Leather Shift to Hydrogen: 8%</li> <li>• Wood Products Shift to Electricity: 92%</li> <li>• Wood Products Shift to Hydrogen: 8%</li> <li>• Pulp Paper and Printing Shift to Electricity: 97%</li> <li>• Pulp Paper and Printing Shift to Hydrogen: 3%</li> <li>• Refined Petroleum and Coke Shift to Electricity: 48%</li> <li>• Refined Petroleum and Coke Shift to Hydrogen: 52%</li> <li>• Chemicals Shift to Electricity: 47%</li> <li>• Chemicals Shift to Hydrogen: 53%</li> <li>• Rubber and Plastic Products Shift to Electricity: 47%</li> <li>• Rubber and Plastic Products Shift to Hydrogen: 53%</li> <li>• Glass and Glass Products Shift to Electricity: 92%</li> <li>• Glass and Glass Products Shift to Hydrogen: 8%</li> <li>• Cement and Other Nonmetallic Minerals Shift to Electricity: 22%</li> <li>• Cement and Other Nonmetallic Minerals Shift to Hydrogen: 78%</li> <li>• Iron and Steel Shift to Electricity: 29%</li> <li>• Iron and Steel Shift to Hydrogen: 71%</li> <li>• Other Metals Shift to Electricity: 44%</li> <li>• Other Metals Shift to Hydrogen: 56%</li> <li>• Metal Products Except Machinery and Vehicles Shift to Electricity: 92%</li> </ul>	



Strategy	EPS Policies	Schedule and Intensity	Rationale
		<ul style="list-style-type: none"> <li>• Metal Products Except Machinery and Vehicles Shift to Hydrogen: 8%</li> <li>• Computers and Electronics Shift to Electricity: 92%</li> <li>• Computers and Electronics Shift to Hydrogen: 8%</li> <li>• Appliances and Electrical Equipment Shift to Electricity: 92%</li> <li>• Appliances and Electrical Equipment Shift to Hydrogen: 8%</li> <li>• Other Machinery Shift to Electricity: 92%</li> <li>• Other Machinery Shift to Hydrogen: 6%</li> <li>• Road Vehicles Shift to Electricity: 94%</li> <li>• Road Vehicles Shift to Hydrogen: 6%</li> <li>• Nonroad Vehicles Shift to Electricity: 94%</li> <li>• Nonroad Vehicles Shift to Hydrogen: 6%</li> <li>• Other Manufacturing Shift to Electricity: 92%</li> <li>• Other Manufacturing Shift to Hydrogen: 8%</li> <li>• Energy Pipelines and Gas Processing Shift to Electricity: 90%</li> <li>• Construction Shift to Electricity: 90%</li> </ul>	
(6) Promote reduced-carbon materials	<ul style="list-style-type: none"> <li>• <a href="#">Cement Clinker Substitution</a> at 100%</li> <li>• <a href="#">Material Efficiency, Longevity, and Re-Use</a>: 30% reduction in demand by 2030 for cement, iron and steel, and water and waste</li> <li>• <a href="#">Building Energy Efficiency Standards</a>: 30% reduction in energy use in commercial buildings by 2030</li> <li>• <a href="#">Improved Labeling</a>: On</li> </ul>		Commercial buildings were used as a substitute for public buildings, as EPS doesn't have a setting for public buildings
(7) Increase the reliability and resilience of tomorrow's energy infrastructure	<ul style="list-style-type: none"> <li>• <a href="#">Offshore Wind Subsidy</a> at \$20/MWh starting in 2023</li> <li>• <a href="#">Grid-Scale Energy Storage</a> at 8% by 2026</li> <li>• <a href="#">Increase Transmission</a> at 30% by 2030</li> </ul>	<ul style="list-style-type: none"> <li>• EPS uses the <a href="#">NREL Renewable Futures</a> study to set the max amount for grid storage potential; the action specifies 1000 MW in five years, so I calculated the user amount (8%) based on the target divided by the policy max.</li> </ul>	The subsidy is a substitute for other "enabling" policies for offshore wind outlined in Action 7.4



Strategy	EPS Policies	Schedule and Intensity	Rationale
(8) Advance equitable siting and permitting processes for new energy and infrastructure projects	<i>None – enabling actions for other strategies</i>		
(9) Increase resources for decommissioning legacy oil and gas infrastructure	<i>See Strategy 10 – options for methane are limited</i>		
(10) Monitor and regulate methane emissions	<ul style="list-style-type: none"> <li>• <a href="#">Methane Capture</a> at 100%</li> <li>• <a href="#">Methane Destruction</a> at 100%</li> </ul>	<ul style="list-style-type: none"> <li>• 100% of potential by 2050 for Oil and Gas Extraction, Energy Pipelines and Gas Processing, Coal Mining, and Water and Waste sectors. EPS has built-in limits as to the emissions these policies can reduce.</li> </ul>	<p>These policies are a poor match for either strategy (9) or (10), but they are the only available policies addressing methane.</p>
(11) Reduce VMT and increase transportation efficiencies	<ul style="list-style-type: none"> <li>• <a href="#">Mode Shifting</a></li> <li>• <a href="#">Fuel Economy Standards</a></li> </ul>	<ul style="list-style-type: none"> <li>• Mode shifting set at policy max in EPS</li> <li>• Fuel economy standards for freight set according to EPS max guidance (88% for LDVs and 56% for HDVs)</li> <li>• Fuel economy standards for freight rail and freight shipping set at 10%</li> </ul>	<p>Rail and shipping fuel economy standards set as a substitute for the freight related Actions in (11) and (12)</p>
(12) Accelerate adoption of clean fuels	<ul style="list-style-type: none"> <li>• <a href="#">Electric Vehicle Charger Deployment</a></li> <li>• <a href="#">Electric Vehicle Range and Charging Time</a> (100% “reduction in concern” by 2050)</li> <li>• <a href="#">Electric Vehicle Sales Standard</a></li> <li>• <a href="#">Electric Vehicle Subsidy</a></li> <li>• <a href="#">Low Carbon Fuel Standard</a></li> </ul>	<ul style="list-style-type: none"> <li>• Charger Deployment at 250 per 100K of population by 2050</li> <li>• EV sales standard set to 20% of passenger LDVs, freight LDVs, freight HDVs by 2050</li> <li>• Subsidy for passenger LDVs at 10% starting in 2023</li> <li>• Low Carbon Fuel Standard at 5% reduction by 2030</li> </ul>	<p>Charger deployment approximates gas pump distribution. EV sales standard less aggressive than projected federal standards. Subsidy tries to address Action 12.2 on lowering socioeconomic barriers to EVs.</p>





Strategy	EPS Policies	Schedule and Intensity	Rationale
(13) Increase public transit service	<i>None – mode shifting maxed out in Strategy 11</i>		
(14) Coordinate land use planning to reduce sprawl	<i>None – enabling actions for Vehicle Miles Traveled reductions</i>		
(15) Improve the efficiency of homes and buildings	<ul style="list-style-type: none"> <li>• <a href="#">Retrofit Existing Buildings</a> (urban and rural residential) at 5% per year</li> <li>• <a href="#">Building Energy Efficiency Standards</a> at 35% reduction by 2030 for all</li> <li>• <a href="#">Building Component Electrification</a> at 50% by 2050 for all</li> <li>• <a href="#">Rebate for Efficient Products</a> on starting in 2023</li> </ul>	<ul style="list-style-type: none"> <li>• Retrofits also addressed in Action 2.5</li> <li>• Rebate also addressed in Action 2.5</li> <li>• Building Energy Efficiency Standards were first addressed in Action 6.1 as part of the Buy Clean policy for public projects (used commercial settings) – expanded here to cover all buildings based on these actions</li> </ul>	Multi-attributed policies across strategies increases likelihood of achieving modeled result.
(16-18) Natural and working lands and wetlands	<ul style="list-style-type: none"> <li>• <a href="#">Afforestation and Reforestation</a></li> <li>• <a href="#">Forest Set-Asides</a></li> <li>• <a href="#">Cropland Management</a></li> <li>• <a href="#">Rice Cultivation Measures</a></li> <li>• <a href="#">Improved Forest Management</a></li> </ul>	<ul style="list-style-type: none"> <li>• All set to 100% by 2050</li> </ul>	EPS not strong at modeling land policies; difficult to link to Task Force actions.
(19-21) Inclusive, low-carbon economy	<i>None – enabling actions for full portfolio</i>		
(22-29) Collaboration and partnerships	<i>None – enabling actions for full portfolio</i>		



## ANALYSIS OF IMPACTS TO OTHER FUNDAMENTAL OBJECTIVES

### Questionnaire Development

The questionnaire from the first consequence analysis (DeJong et al., 2022) was modified and updated for evaluation of the draft portfolio of climate strategies and actions. As with the first analysis, AG members were asked to assess the outcome of the draft portfolio for each FO on a defined impact scale of “very negative” to “very positive.” AG members were provided a set of criteria to consider in ranking the outcomes of portfolio; these criteria were modified from the first consequence analysis in some cases based on input from the AG members (Appendix C). Because the goal of this second consequence analysis was to improve the draft portfolio of climate strategies and actions before finalization for the Louisiana Climate Action Plan (2022), AG members were also prompted with a set of short-answer questions to encourage specific feedback on the draft portfolio (Figure 1). These questions included:

- What (if any) concerns does this portfolio raise for you relevant to this fundamental objective?
- What (if any) specific benefits does this portfolio have for this fundamental objective?
- Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective?

Impacts of the strategies and actions on...				
Improving Quality of Life for Residents and Communities	Predicted Outcome	What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)	What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)	Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)
Maximize quality of, and access to, essential goods, services, and infrastructure for residents				
Maximize positive public health outcomes and public safety				

Figure 1. Example of opinion questionnaire answered by the AG as part of the second consequence analysis.

In addition to providing feedback on the overall draft portfolio of climate strategies and actions, AGs were also given an opportunity to provide input on individual strategies and actions and/or to identify resources such as data or reports that might be helpful in either revising the portfolio or monitoring the impacts of the Louisiana Climate Action Plan once implemented. This input was used in revising the draft portfolio of climate strategies and actions and is not presented here.

One of the comments received during the initial consequence analysis was that secondary impacts of actions on individual FOs should be considered during evaluation of actions and strategies. For example, negative impacts to natural resources and the environment could have cascading impacts to the economy. For this reason, respondents were instructed to consider potential indirect effects to each FO, and all AGs were given the option to provide input on all FO categories. Respondents were still advised not to provide a ranking or response to any FO they did not have the expertise to evaluate.



## RESULTS

Results of the GHG emission analysis and evaluation of impacts to other FOs for the state of Louisiana are included here and provided for the draft strategy and action portfolio. The results from the GHG analysis are presented first and are based on analysis with the EPS tool. These results are followed by results of the analysis for the remaining FOs, consisting of a short paragraph summarizing the findings and a chart showing the range of outcomes predicted by the AG members (i.e., the distribution of positive, negative, and neutral responses). The feedback received on that portfolio for each FO is then provided, including narrative input on concerns, challenges, and considerations, as well as opportunities and potential benefits.

### GHG ANALYSIS

#### A Note on Model Interpretation and Uncertainties

At its core, EPS is a computer model. As with other models, a certain amount of uncertainty and variability is present; therefore, results should be interpreted cautiously. The EPS produces estimates of the impacts of potential policies to meet a future emission and warming scenario; however, “these estimates are not meant to represent the exact abatement potential achievable” (Energy Innovation, LLC, n.d.). For full documentation of all assumptions built into the EPS model, visit <https://us.energypolicy.solutions/docs/assumptions.html>.

#### GHG Analysis Results

This consequence analysis found that the draft portfolio of climate strategies and actions, as represented by the policies in Table 2, would reduce emissions by approximately 169 million metric tonnes of carbon dioxide equivalents (MMTCO<sub>2</sub>E) per year by 2050. However, it would miss the intermediate and 2050 emissions reduction goals set by [Executive Order JBE 2020-18](#). Modeling the full draft portfolio of climate strategies and actions indicates that Louisiana would reach 95.1 MMTCO<sub>2</sub>E per year by 2050 (Figure 2).

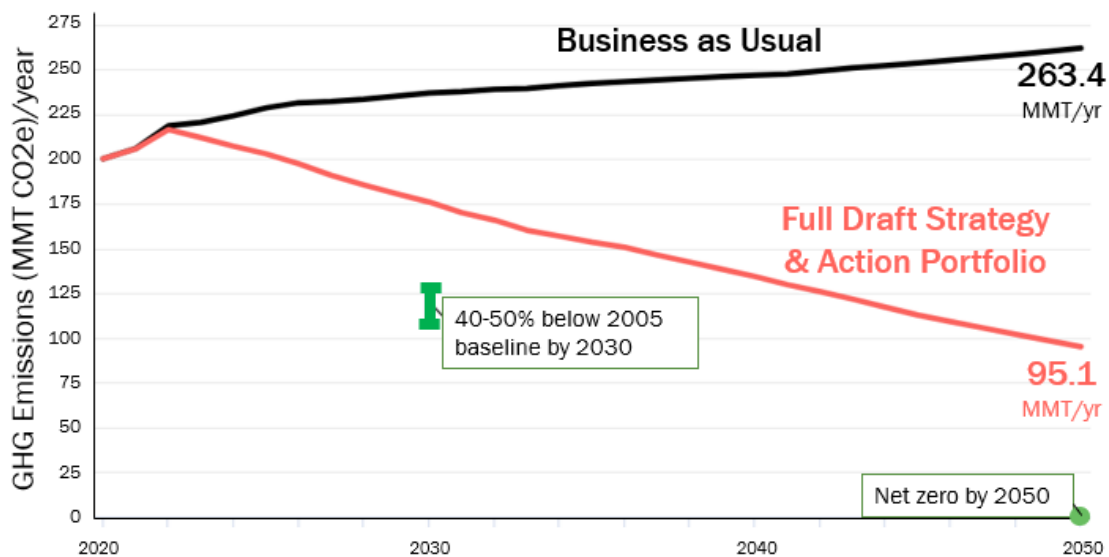


Figure 2. Overall GHG emissions reduction from the second consequence analysis modelled using the EPS tool.



When viewed by sector (Figure 3), it is clear that that while industrial emissions (Figure 3, gray wedge) were reduced, the emissions were offset by increased emissions from hydrogen production (Figure 3, purple wedge). This sector breakdown shows the importance of abating emissions along the hydrogen fuel production chain, as switching industrial processes to hydrogen produced with current methods could result in offset or increased emissions.

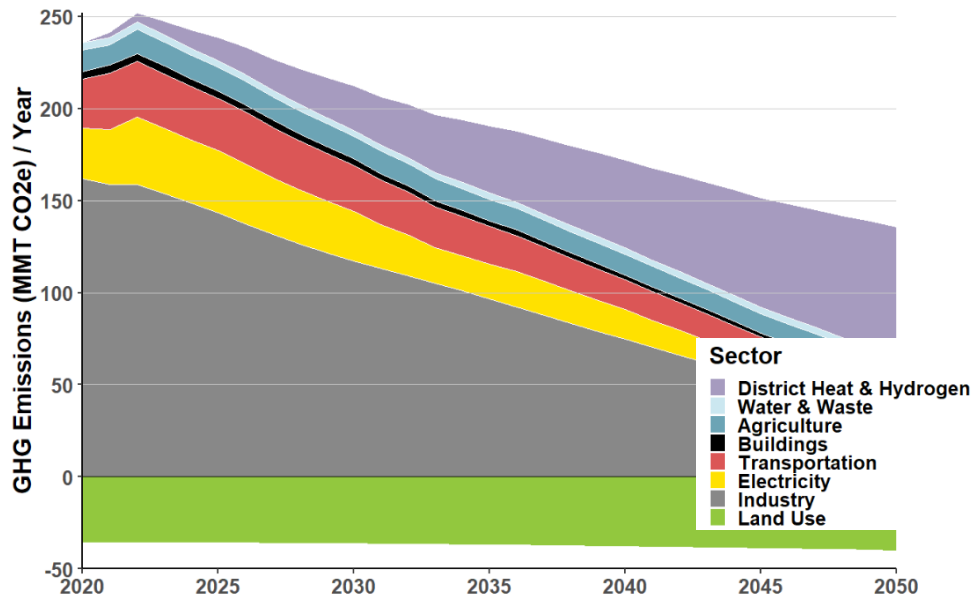


Figure 3. Sector breakdown of the second consequence analysis modelled using the EPS tool.

The modeled EPS results showed benefits to other FOs. The annual benefits by 2050 include over 165,000 net new jobs, in addition to avoiding over 1,800 premature deaths per year and nearly 55,000 asthma attacks per year. These jobs, measured as job-years by EPS, are visualized in Figure 4.

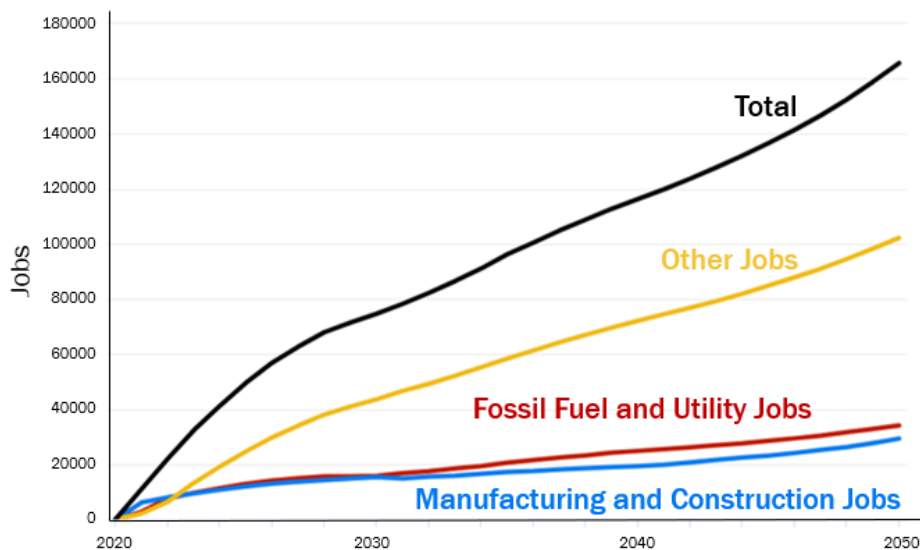
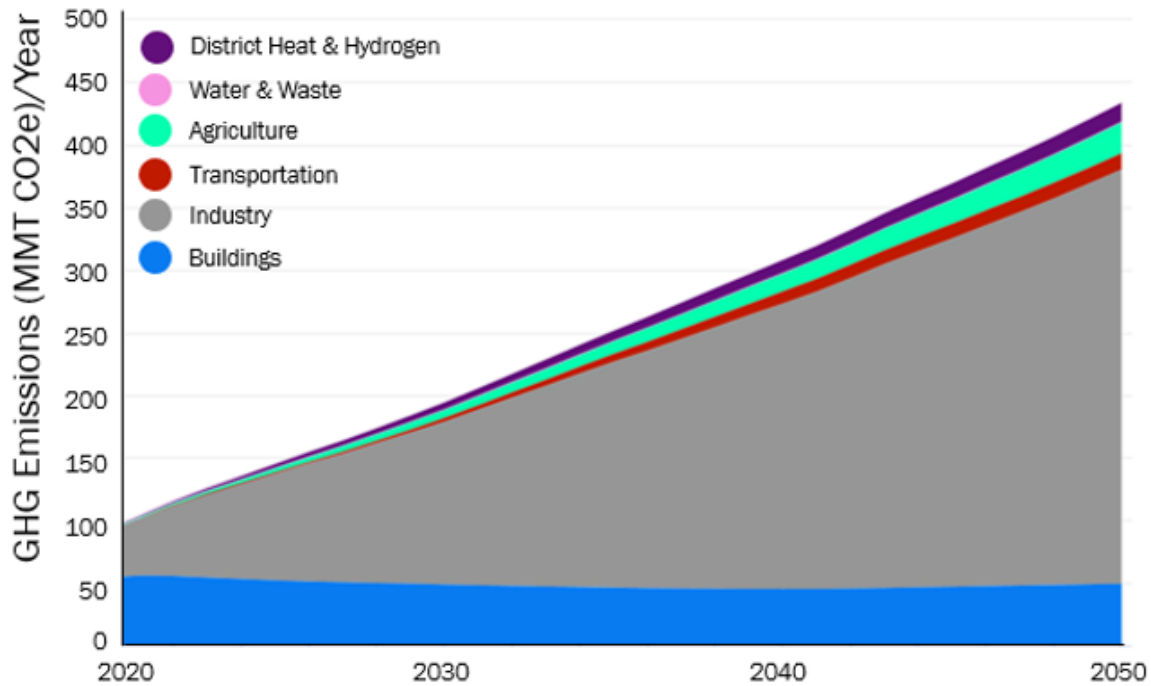


Figure 4. Jobs benefits from implementation of the draft portfolio of climate strategies and actions modelled using the EPS tool.



A key finding from this analysis is that electricity demand increased more than fourfold, largely due to industrial electrification (Figure 5, gray wedge). It is important to note that the policy settings used in the EPS tool to evaluate this draft portfolio of climate actions and strategies did not include increasing green hydrogen production, or production by electrolysis, which is powered by electricity. Thus, the electrical demands from hydrogen production are small, relative to the demands from industrial electrification. This comparison of electricity demand by sector is visualized in Figure 5.



### Electricity Demand By Sector

Figure 5. Electricity demand by sector from the draft portfolio of climate strategies and actions modelled using the EPS tool.

The EPS tool's Clean Electricity Standard policy (sometimes called a Renewable Portfolio Standard policy) set the simulation to have this electricity demand largely met through renewable generation (Figure 6). The model is cost sensitive, so the increase in offshore wind (Figure 6, royal blue wedge) was driven by a subsidy established in the model's policy settings; other increases, from utility solar and onshore wind, were driven more by the relatively lower price of electricity from those sources. Phaseouts of natural gas plants (Figure 6, red wedge) were somewhat offset by additional natural gas peaker plant capacity (Figure 6, pink wedge). This additional peaker plant capacity could not be reduced, as the EPS tool's capacity constraints on renewables require a certain amount of peaker capacity to maintain enough flexibility in electricity generation. A more detailed simulation of peak vs. non-peak electricity generation would be needed to determine if this would hold outside the EPS tool.

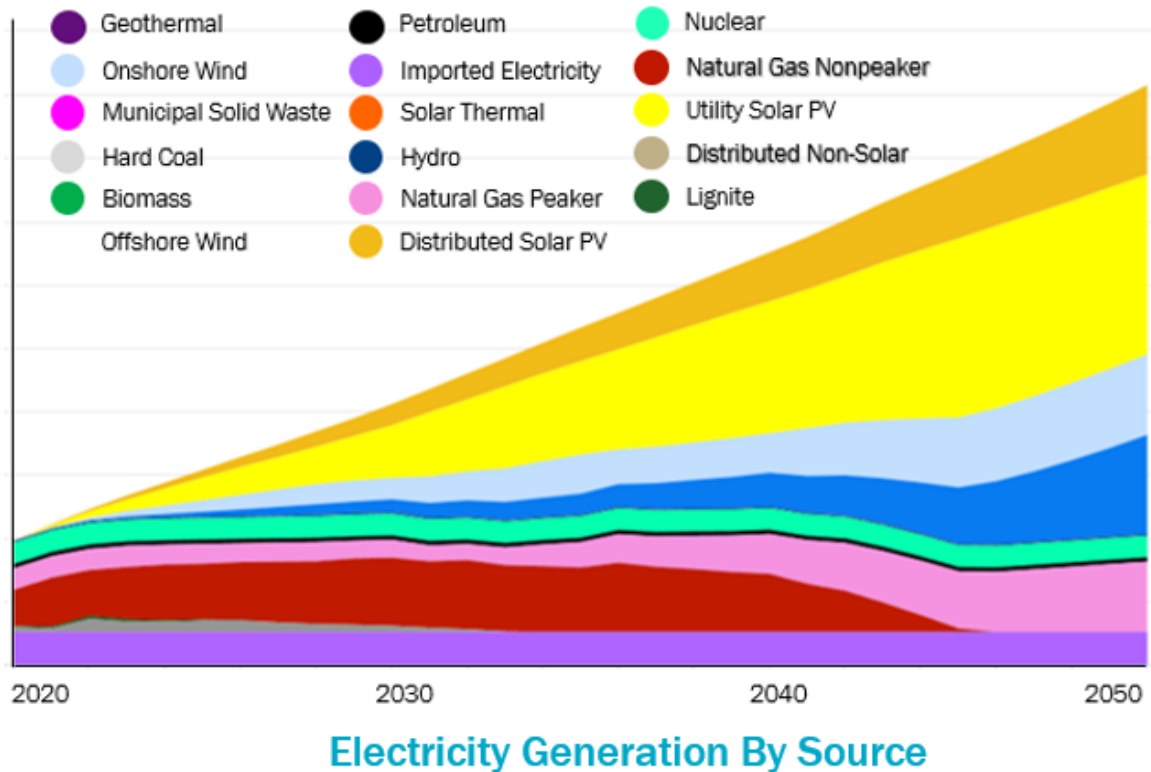


Figure 6. Electricity generation by fuel source from the implementation of the draft portfolio of climate strategies and actions modelled using the EPS tool.

A policy breakdown of the electricity sector emissions reductions (Figure 7) shows the relative impacts of each policy setting in the EPS tool. The bulk of the emissions reductions are from the electricity sector Carbon Capture and Sequestration (CCS) policies, particularly in the later years of the modeling. CCS was set at 95 percent in the electricity sector to match the language in the draft action. The relative lack of emissions reduction from the Clean Electricity Standard EPS policy was not an expected outcome. However, this may be a result of the emissions reductions that could otherwise be attributed to the standard were instead being allocated to electricity-powered industrial emissions reductions. Regardless of how clean electricity standards are treated by the EPS tool, a clean electricity standard is a common feature of state climate action plans, and is critical for increasing the amount of renewable electricity generation in Louisiana. Electrifying vehicles, industrial facilities, buildings, and more will reduce emissions only if that electricity is powered by renewable energy.

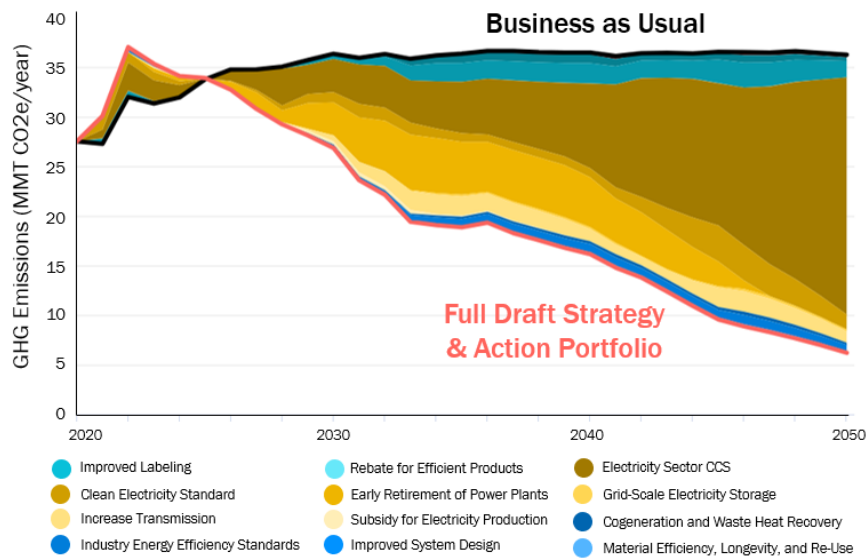


Figure 7. Electricity sector emissions reductions by EPS policy as modelled in the EPS tool.

An additional note on the electricity sector is that the EPS tool models Louisiana as an island. In reality, Louisiana is part of a regional transmission organization and can import and export electricity. The EPS modeling used here is not capable of capturing those kinds of interactions.

In the industrial sector, the majority of emissions reductions were attributable to the EPS tool’s electrification and hydrogen policies. As previously noted, the hydrogen fuel-switching portions of this policy setting resulted in unintended consequences of offsetting emissions. However, when looking only at the industrial sector, and not the hydrogen production sector, the emissions reductions were significant (Figure 8).

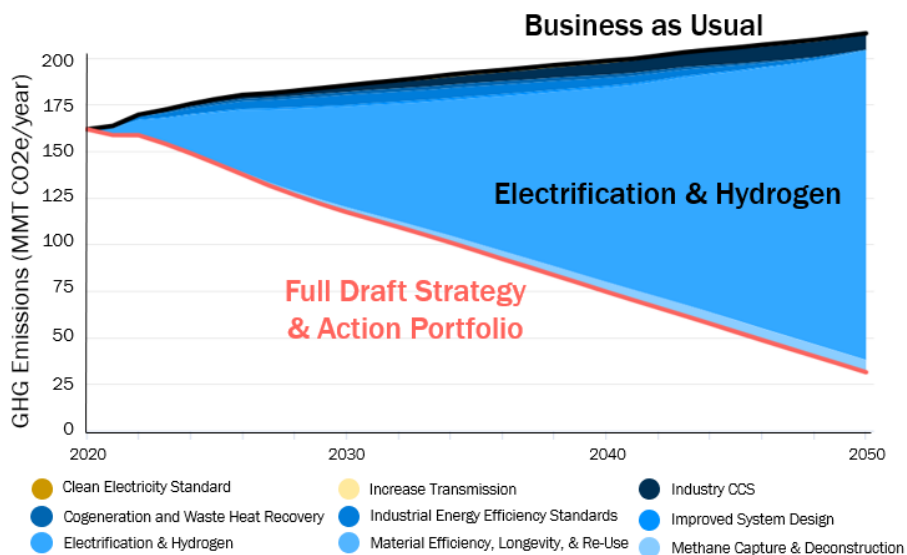


Figure 8. Industry sector emissions reductions by EPS policy as modelled using the EPS tool.



The hydrogen production emissions are easiest to understand when compared to Energy Innovation’s US NDC scenario, available as a comparison within the Louisiana EPS tool. Because the US NDC scenario sets hydrogen production to 100 percent electrolysis by 2050, hydrogen production emissions are bent towards zero, while this portfolio’s emissions continue to climb (Figure 9).



Figure 9. Comparison of hydrogen production GHG emissions modelled in the EPS tool based on the draft portfolio of climate strategies and actions (“Full Draft Strategy & Action Portfolio) and the Energy Innovation US NDC Scenario.

Considering these results, the model settings were adjusted to remove the hydrogen fuel-switching components to determine if the portfolio performed better without any hydrogen fuel switching. This setting adjustment resulted in the draft portfolio of climate strategies and actions performing better by approximately 26 MMTCO2E in 2050, as shown in Figure 10.

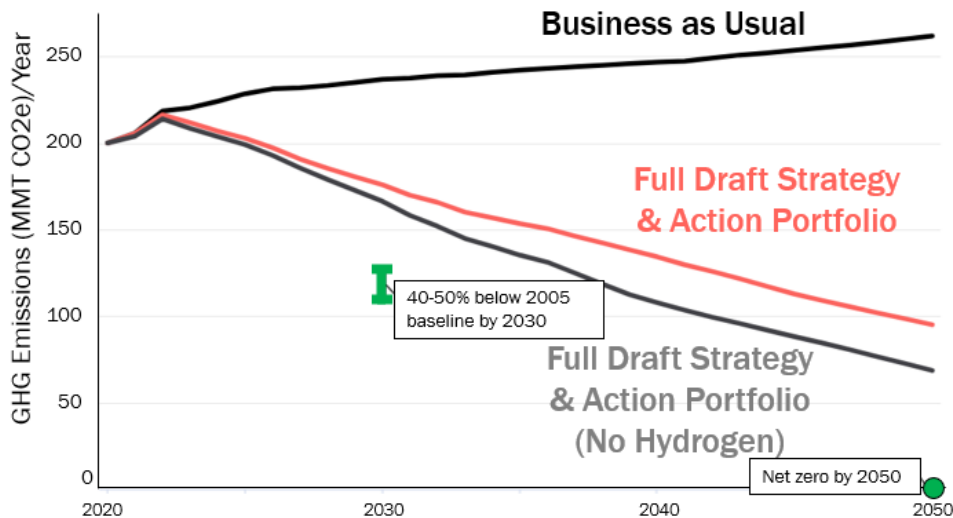


Figure 10. Visualization of policy setting adjustments related to industrial hydrogen fuel switching from the EPS policy set for the draft portfolio of climate strategies and actions.





Impacts to the transportation sector were also examined (Figure 11). Compared to the US NDC scenario, the draft portfolio's transportation sector emissions reductions were not as pronounced. However, because the US NDC scenario was a set of federal policies downscaled to Louisiana, not all of these policies in the EPS tool had an equivalent to consider at the state level. For example, the US NDC scenario includes a stronger electric vehicle sales standard. As a smaller state, Louisiana's ability to establish a vehicle sales standard is constrained relative to larger states or the federal government. In the portfolio, transportation sector emissions were reduced to approximately 12 MMTCO<sub>2</sub>E per year by 2050. Federal action in this sector could help eliminate the residual emissions.

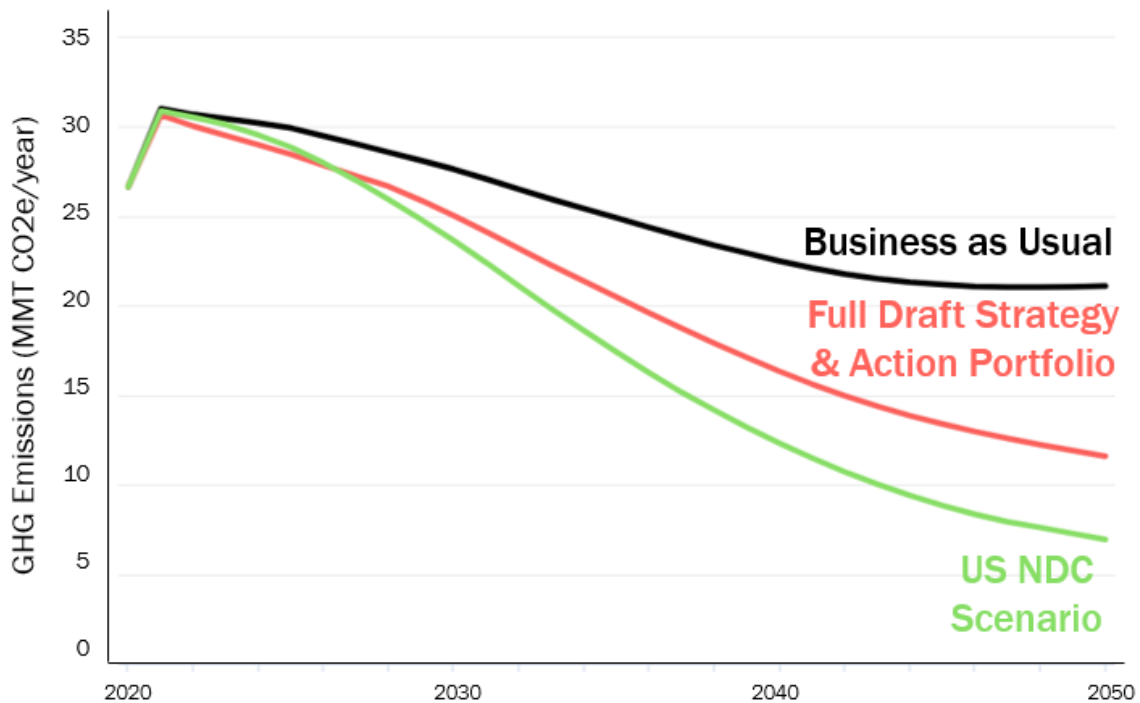


Figure 11. Comparison of transportation sector emissions reductions between the draft portfolio of climate strategies and actions and the Energy Innovation US NDC scenario as modelled by the EPS tool.

In the building sector, energy use by buildings was not greatly impacted by the modeled policies in EPS (Figure 12). Some reduction in the use of natural gas was seen in building energy use, but overall energy use declined by around 0.05 quads per year. One quad is equivalent to one quadrillion British thermal units (BTUs) and is used to describe national or global energy use. In this case, the decline of 0.05 quads is equivalent to over 14 billion kilowatt-hours in energy reduced.

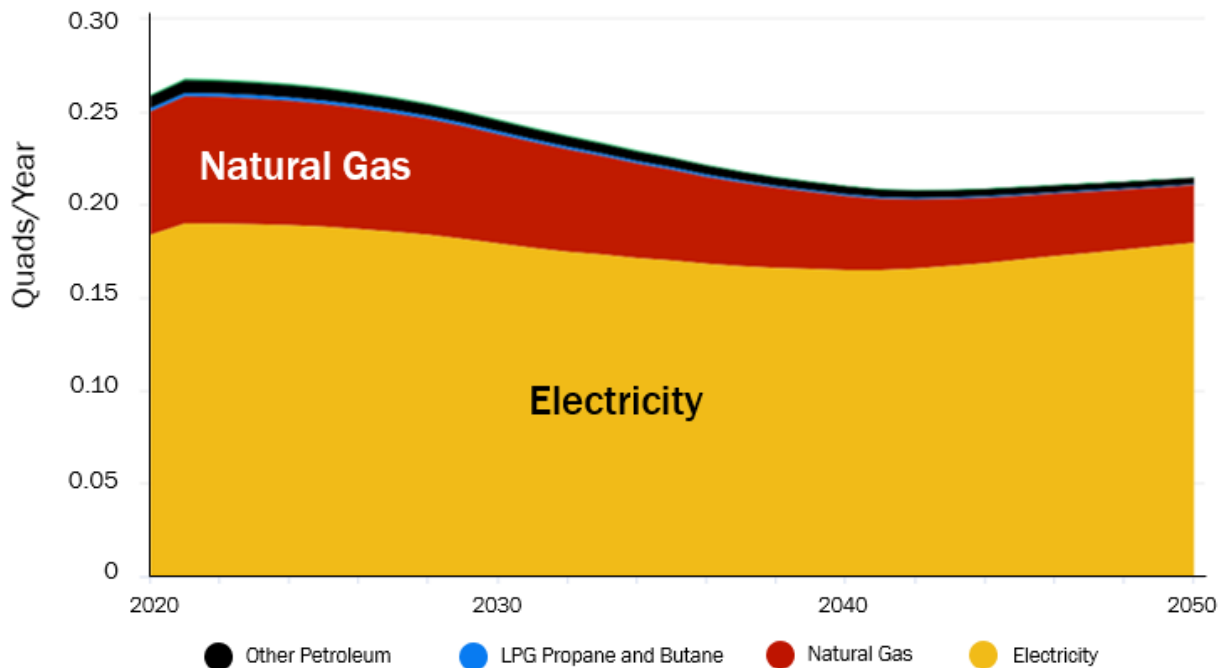


Figure 12. Building sector energy use by fuel in the draft portfolio of climate strategies and actions as modelled by the EPS tool.

The draft portfolio of climate actions and strategies included several strategies that had either minimal modeled reductions in emissions, or were not able to be modeled, either because they lacked quantitative aspects to incorporate into the model, such as those actions without a target or metric, or because they were designed to impact other fundamental objectives, such as prioritizing Louisiana workers. Not every action in the draft portfolio of climate strategies and actions was perfectly analogous to a policy in the EPS tool. However, the level of detail in the draft portfolio's actions were intended to ensure that the actions could be implementable in the local context, not for them to match perfectly to a modeling tool.

Some strategies with minimal modeled reductions included Strategy 2: Increase renewable electricity generation and access for all users, Strategy 6: Promote reduced-carbon materials, and Strategies 16-18: Natural and Working Lands and Wetlands. These strategies were either an imperfect fit to policies within the EPS tool or had minimal emissions reductions from the model.

## ANALYSIS OF IMPACTS TO OTHER FUNDAMENTAL OBJECTIVES

The material presented here is derived from the questionnaires and reflects the input given by one or more AG member. The distribution of positive/negative responses for each FO is provided along with the short-answer feedback and comments, which have been compiled and provided verbatim. Respondent names have been anonymized in reporting individual comments. However, IDs are used to categorize responses from the Legal Advisory Group (LAG), Equity Advisory Group (EAG), Finance Advisory Group (FIAG), and Science Advisory Group (SAG). Response IDs also enable tracking of responses from within each AG (e.g., responses from the same SAG member are denoted as coming as SAG1 throughout the document).



## Analysis Results

A total of 22 individuals from across the AGs provided input on the strategy and action portfolio. The distribution of responses varied across AGs, with greater representation from some groups than others (Figure 13).

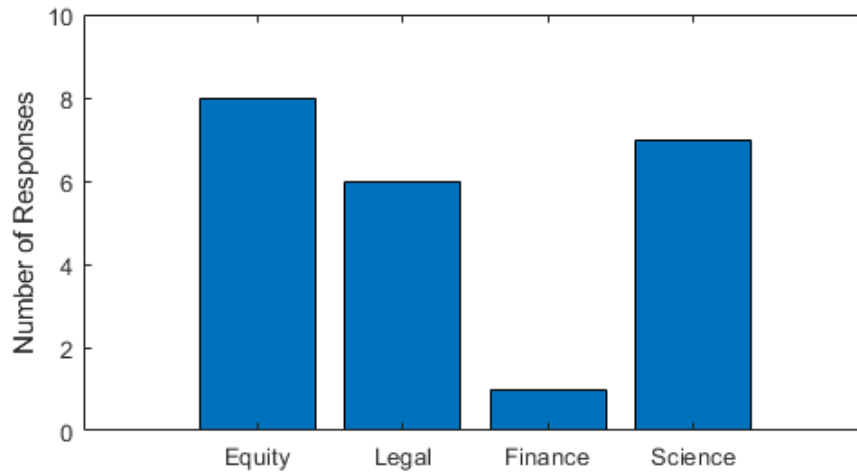


Figure 13. Number of responses received from each of the advisory groups.

The distribution of outcome predictions for the FOs within each category is provided below along with collated comments provided by the AG members.

### Fundamental Objective Category: Improving Quality of Life for Residents and Communities

The fundamental objectives associated with this category are:

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

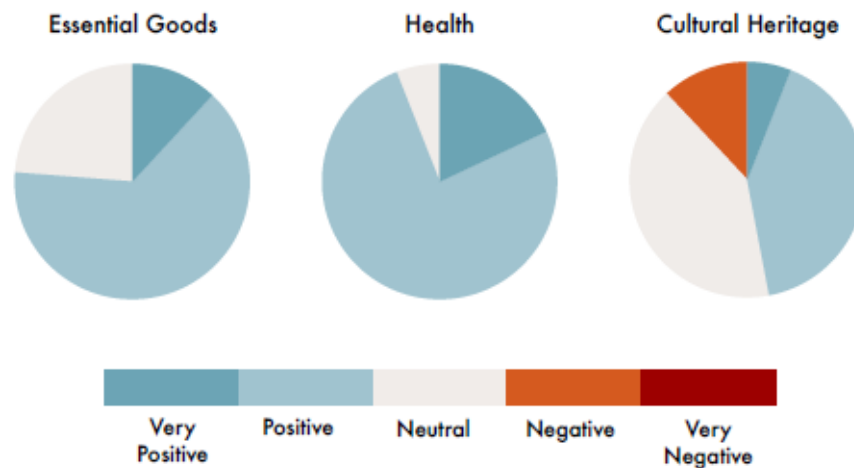


Figure 14. Distribution of responses for the objectives associated with Improving Quality of Life for Residents and Communities



The majority of respondents predicted positive or very positive outcomes for FOs related to access to essential goods and services and public health (Figure 14). Feedback provided included noting positive predicted co-benefits of a renewable energy transition, including improved energy access, and the health co-benefits of emissions reductions. Mixed feedback was received on the FO to preserve cultural heritage, with concern expressed regarding a lack of specificity on limiting the risk Carbon capture, utilization, and storage (CCUS) pipelines could pose to marginalized and Indigenous communities and cultural heritage sites.

*Maximize quality of, and access to, essential goods, services, and infrastructure for residents*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG3. It seems to cater to industries and well off people and not understand poorer people
- EAG5. If additional pipelines will have to be built to properly deploy CCUS, would like to ensure that land loss isn't furthered in a way that will add to our land loss crisis here and protect coastal restoration and protection efforts
- EAG6. Ida has pointed out the need to improve and harden our electrical grid and ensure access – without power so much grinds to a halt
- EAG7. None
- EAG8. The plan as a whole is difficult to grade because as designed, it will likely have different effects on different residents. Without special attention to equity and redistribution, resources will be distributed unevenly
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- FIAG1. I think it is challenging and oftentimes a futile exercise to try to predict the future. Decarbonization in the eyes of some (such as shutting down emitting facilities) could have a negative impact on goods, services and infrastructure. Being able to address this more definitively will depend on the specific path chosen, it seems.
- SAG1. I am not entirely sure how much of these specific aims can be attained through the strategies proposed.
- SAG2. Access/affordability (solar panels, etc.); potential for environmental gentrification; must be coordinated with other hazard mitigation focused on wind and flood
- SAG3. Possibly include more community educational activities to better educate community on circular economy and what individuals can do to help.
- SAG4. Seeing Hurricane Ida's impacts to a wide part of Louisiana. I am reminded of the intense impacts of climate change. I am deeply concerned that one of the biggest threat to the capacity for Louisianans to access essential goods and services is climate change. To this end, Louisiana needs to look into ways to reach the governor's goals early, and to work with the global community to reach the goals of the Paris accord early as well.
- SAG5. The major concern is associated with how this will be implemented. Since the industrial revolution, the main focus of our society has been to maximize access to essential goods. As such, if the production of these essential goods and infrastructure is not aligned with the whole climate change framework, it will be business as usual, and the overall impact on the climate will be negative.



What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG3. Clean energy transition will start
- EAG5. Existing infrastructure is prime to adopt decarbonization technologies
- EAG6. A well supplied citizenry can be more productive and participate in the economy and governance
- EAG7. I believe this portfolio can help lead us to better jobs, more positive health outcomes and a whole range of positive outcomes that have never been realized in our state.
- EAG8. The plan's emphasis on electrification and renewable energy will help improve quality of life for residents, as will restoring natural ecosystems and focusing on more efficient housing, public transportation and restoring natural ecosystems.
- FIAG1. If a successful energy transition can be achieved, it seems as though numerous benefits would occur. But individuals often have their own definition of success.
- SAG2. Better access to reliable energy and transportation options
- SAG3. Programs to enable individual participation in clean energy generation./storage. The distribution of energy generation allows better access, and distributes production facilities, creating a better standard of living for more. Stakeholder involvement in the planning is essential. Decommissioning coal will provide a healthier community for all. Publishing rankings will allow users to see how Louisiana areas are performing with regard to national and regional targets. Incentives for industry to redistribute their energy needs is also important. Resilient microgrids are also important, as Ida just demonstrated.
- SAG4. Overall, there are a number of positive proposals in here. This includes expanding community, expanding planning in urban development, expanding public transportation. And paying attention to environmental justice.
- SAG5. If the process is conducted with climate remediation in mind, this will result in a more efficient system and infrastructure with little to no negative impact on the climate and the environment. It could in a best case scenario, and by design even have a positive impact on the environment.
- SAG7. Increase renewable electricity generation

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG3. Rethinking some of the strategies can lead to better outcomes for everybody
- EAG7. I think it could be beneficial to have an operations developed in the state for recycling old used tires. We have a terrible problem with illegal dumping of tires in this state. And, we need operations established to help us properly deal the amount of used tires.
- EAG8. Simply mentioning equity without setting out any specific goals or plan to reach those goals will not help us achieve equity. For example, when planning for decarbonization, we set a goal of net zero for 2050. We have no equivalent goal for equity. The Draft Action Portfolio mentions equity at the end of certain sections, but the portfolio should include specific steps to advance equity throughout its plans, from electrification to industrial decarbonization to workforce development to accountability.
- SAG2. Need to clearly define strategy for participatory planning, engagement, assessment that includes a stakeholders representing vulnerable populations



- SAG4. The most important thing that we can do to maximize the quality of life for Louisianans is to meet the governor’s climate goals early, and work with groups around the country and the world to meet the Paris accord goals ahead of schedule.
- SAG5. (1) Building smart and energy efficient roads and buildings, (2) modernizing public transportation not just for the working poor, but also to attract a larger population, resulting in the reduction of the number of cars on the street. Efficient electric train lines between major cities within the state, which goes through rural areas is a good example.
- SAG7. Public education at the elementary school level

#### Other Comments (Optional)

- EAG7. None
- LAG2. Please see my comments on strategies and actions. Given the apparent heavy emphasis on CCUS (envisioning a “significant” role for it) and continued reliance on natural gas, all my predicted outcomes would be negative. Continued fossil fuel extraction production is inconsistent with the science establishing we must rapidly shift away from fossil fuels and with equity, as the marginalized communities on the frontlines of fossil fuel infrastructure retrofitted with CC technology will be subjected to the same and increased harms from PM and other deadly pollutants and will prolong the use of aging infrastructure that leaks, ruptures, and explodes now and will only do so more in the future, as it is not climate ready. Further, CC technology would require a massive buildout of more risky pipelines. CCUS, so-called blue or gray hydrogen, and any other technology that relies on continued fossil fuel production is not a climate solution. It is ineffective, unsafe, and perpetuates and exacerbates existing discriminatory injustices against communities of color and Indigenous communities. (See White House Advisory Council Recommendations in resources.)
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- SAG2. To apply to all – look to La Safe strategies as the strategies and projects were informed by the local communities

#### *Maximize positive public health outcomes and public safety*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG3. Instead of mandates its looking to incentivize a lot of changes which can lead to gaps and holes not everyone will be on board
- EAG5. Would like to ensure that a study is performed to more comprehensively understand potential impacts of any technology used, especially those being implemented in close proximity to residential areas
- EAG6. Continued emissions of hazardous substances continues to threaten fencerow communities
- EAG7. None
- EAG8. The portfolio does not focus nearly enough on reducing extraction and refinement of oil and gas and resulting petrochemicals. Even if the industrial facilities in the chemical corridor fully electrified and/or captured all greenhouse gas emissions, there would still be other toxic emissions that poison nearby communities that tend to be poor and Black.



- LAG1. Too many public programs (coastal restoration, e.g.) depend on fossil fuel production or associated fines and penalties (e.g. DW Horizon). Shifting to “cleaner” sources of energy will force those programs to find new funding sources, a challenge that will not be easily met in the near term.
- LAG3. Recent studies have indicated a link between emissions reductions and improved public health. As such, the successful implementation of any/many of these actions should lead to improved health outcomes
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana’s economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. The technology will allow co-pollutants to continue to be emitted, will prolong the use of fossil fuels and their pollutants, and will expose some communities to the dangers of leaks, human and animal asphyxiation, drinking water contamination, seismic activity, and (according to Larson, “Net Zero America” (p. 185) environmental degradation of fragile wetlands.)
- SAG2. Issues of equity
- SAG3. Make sure that oversight does not bog down action. A lot of the strategies involve performing studies, developing frameworks and metrics, which are all useful, but action has to be taken as well.
- SAG4. We need more information to evaluate this one. Right now, we have very limited data on how climate change, and greenhouse gas emitters impact the health of Louisianans. Until we have more public health data, and rate on the relationship between emissions and public health, this goal will be hard to evaluate.
- SAG5. There is never a concern when it comes to improving the health of the state population by reducing pollutant in air. However, these pollutants are often associated with the livelihood of these populations, including goods transportations, travel and jobs, and sometime even housing. However, good housing and less polluted environment should never be mutually exclusive. We should thrive to provide all these services without jeopardizing the health of these populations.
- SAG7. Accelerate the decommissioning of coal and older natural gas-fired power generation

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG3. Clean energy transition will start
- EAG5. The technologies advanced will produce less emissions than current and historical mechanisms
- EAG6. A healthy population requires less diversion of resources to health care and higher accomplishment among students
- EAG7. I believe with the better jobs and other opportunities that will come about, there could be less likelihood of people stepping out of character to indulge in criminal and other harmful activities.
- EAG8. Climate change is a huge public health problem. Reducing greenhouse gas emissions will help avoid the worst impacts of the climate crisis, and this plan would help reduce greenhouse gas emissions.
- LAG1. The reduction of spills, emissions and land/waterscape impacts of fossil fuel dependent energy production and use would likely have broad benefits on public and ecological health.
- LAG6. Lots of good stuff. As Prof. Larson told us last spring (in answer to a question of mine), the “lion’s share” of GHG reductions, economic growth, and new jobs will come from the transfer to renewables (solar and wind). (This is in contrast to CCUS—my question was clear on that.)
- FIAG1. Theoretically, lower emissions should lead to better public health outcomes.



- SAG2. Improvements to air quality and access to nature = better health outcomes
- SAG3. Transitioning to renewable energy and more sustainable/less polluting manufacturing will improve human health in areas impacted by air quality/water quality. Expanding internet connectivity and allowing telework will reduce gas-automobiles on the roads, and will allow people access to jobs.
- SAG4. Efforts to reduce emissions in industrialized areas could lead to positive health outcomes.
- SAG5. There is no better benefit to a society overall than improving the health and the air quality for the inhabitants. The net result is a better and healthy workforce, and in the end, a low overall healthcare cost for state.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG3. Rethinking some of the strategies can lead to better outcomes for everybody
- EAG7. Nothing comes to mind at this time.
- EAG8. The climate crisis is already here. Louisiana has had at least one major federal disaster declaration 8 out of the last 10 years. Louisiana should lead by example and set more ambitious decarbonization targets
- LAG6. A state office of Health and Resilience to match the state office of Economic Resilience. If the Portfolio will contain actions that will increase health and safety risks for some, there is a moral duty and practical need to mitigate that burden as much as possible. The office could provide free medical information, medical monitoring, medical services, and an efficient and well-funded “compensation fund” should the state accept industry’s invitation to assume responsibility of the “long-tail liability” of CCUS. See next tab.
- SAG2. Need to clearly define strategy for participatory planning, engagement, assessment that includes a stakeholders representing vulnerable populations
- SAG4. To improve public health, the climate initiative should focus more on ozone and reducing ozone precursors. Ozone is a powerful greenhouse gas that is produced through photochemical reactions with oxygen, nitrogen oxides (Nox) and some volatile organic compounds (VOCs). Ozone is also a health hazard. Reducing ozone precursors is an important way to reduce both overall warming, while also improving public health.
- SAG5. Since transportation and industries are the primary source of these pollutants, using electric train for goods and human transportation, and developing more effective and less polluting industrial processes to access essential goods will have a significant impact toward that goal.
- SAG7. Cleaning up contaminants from old power plants

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.





### *Maximize preservation of cultural heritage*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG2. When it comes to environmental justice communities, we really need to (1.) Stop the harm, (2) Repair the harm, and (3) put things in place so it's not going to happen again. What are we going to do to make sure it's not going to happen again. There's not much trust with LDEQ, so who's going to hold them accountable? When it comes to CCUS, we've seen what happens with pipelines and vulnerable communities.
- EAG5. The portfolio does not provide sufficient specifics as to how cultural heritage will be preserved
- EAG6. Will this rise to a significant level in the portfolio? Cultural heritage has been neglected in the state's master plan.
- EAG7. None
- EAG8. Without making even stronger commitments to equity and setting a faster decarbonization timeline, many Louisianans will continue to be displaced from the state. Furthermore any new pipelines in the coastal zone for CCS will weaken storm protections.
- LAG1. A lot depends on how cultural heritage is defined. Some now view working in the oil and gas industry as part of our culture. I don't.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. The technology will allow co-pollutants to continue to be emitted, will prolong the use of fossil fuels and their pollutants, and will expose some communities to the dangers of leaks, human and animal asphyxiation, drinking water contamination, seismic activity, and (according to Larson, "Net Zero America" (p. 185) environmental degradation of fragile wetlands.)
- SAG2. Issues remain regarding status of native American Tribes in La
- SAG3. Not that many of the strategies addresses cultural heritage in Louisiana.
- SAG4. Culture stems from the health and vibrancy of the population. The above comments address those issues, and my view of cultural preservation stems from my remarks above.
- SAG5. None

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG6. If this is indeed accomplished, it would help preserve our valued culture groups
- EAG7. With an increase in economic and other resources that could come about in our state, I think there could be new opportunities to focus on maximizing preservation of cultural heritage.
- EAG8. Distributed solar and housing upgrades could help fewer communities survive ever increasing storms
- SAG2. Potential removal of destructive infrastructure
- SAG3. Conservation of natural lands is important for cultural preservation of indigenous people.
- SAG5. The majority of problems caused to the preservation of cultural heritage comes from the fossils fuel industry through pipeline line and drilling which affect both tribal and indigenous lands and the coastal



environment. As the overall plan is to slowly transition away from fossils fuels, this objective can easily be achieved within the overall climate change remediation framework.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG2. We have to be realistic and consider the dangers of new pipelines. What are they going to do if they're a hazard to the community?
- EAG5. The portfolio does not provide sufficient specifics as to how cultural heritage will be preserved
- EAG7. There could be a strategy added that focuses on enhancing the energy efficiency of the buildings and facilities that house and display the cultural heritage of our state.
- EAG8. The portfolio should call for a moratorium on any new development in coastal wetlands.
- LAG1. GHG reduction should lessen pressures on managing lands and waters for the purpose of mineral development. That could create greater and longer opportunities to accentuate more traditional and sustainable activities.
- LAG6. Perhaps also consider an office of Culture and Resilience along the lines outlined above, especially since CCS presents long-term risk to landscapes and communities which the industry is not prepared to compensate for.
- SAG2. Need to clearly define strategy for participatory planning, engagement, assessment that includes a stakeholders representing vulnerable populations
- SAG5. As we transition away from fossils fuels, a nature based approach, which gives a greater priority to conserving natural landscape she be implemented. Modern infrastructure are designed in a way to be less disruptive to the natural landscape while sustaining and stabilizing fragile area such as coastal lands.
- SAG7. Communication to general public at large

#### Other Comments (Optional)

- EAG5. Specific steps that underscore the significance of cultural heritage and action steps that detail how such heritage will be preserved
- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. Whose cultural heritage is being preserved, or not? Seems like there are multiple stakeholders that could view this particular issue from different, and very individual, perspectives.



## Fundamental Objective Category: Creating a More Equitable Society

The fundamental objectives associated with this category are:

- Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes
- Maximize reduction and mitigation of historical 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

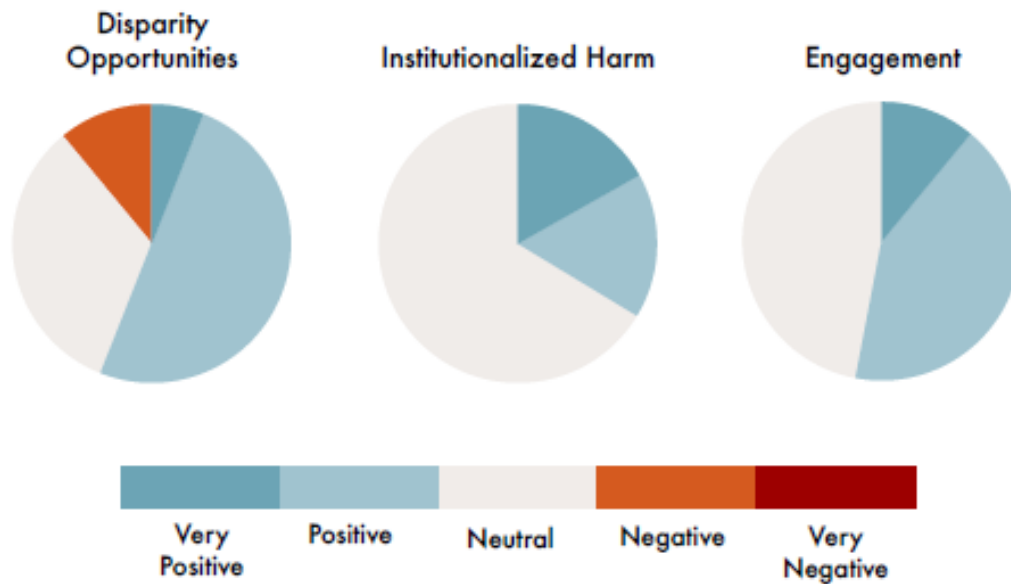


Figure 15. Distribution of responses for the objectives associated with Creating a More Equitable Society.

The majority of respondents predicted positive or neutral outcomes for FOs related to reducing institutionalized harm and maximizing community engagement (Figure 15). Feedback provided included noting the potential for positive co-benefits of a clean energy transition for marginalized communities and the explicit inclusion of equity considerations in the set of strategies and actions. However, one concern expressed was that there was a lack of specificity in how community engagement, ownership, and leadership opportunities would be implemented. Relatively mixed feedback was received on the FO to minimize disparity of future opportunities, with concern expressed regarding insufficient focus on equity embedded throughout the plan and the absence of specific goals and metrics for tracking outcomes on a community level.

*Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG1. The state should set a bold goal that advocates for everyone. Our aims for equity should mirror our ambition for lower carbon emissions. What is the statewide campaign that normal people will get excited about?
- EAG2. The state should monitor what's happening in historically underserved communities. The plan proposes equity but there's no plan to achieve equity. You have to have an action plan for that.



- EAG3. It seems to cater to industries and well off people and not understand poorer people
- EAG5. There must be a defined focus on inclusive workforce training and procurement preservations for BIPOC businesses
- EAG6. The current geography of wealth will be an impediment to reducing disparities across the state, and entrenched resistance to equity, in all forms, remains
- EAG7. I'm concerned that the focus on equity is not quite as integrated into this portfolio as it should be. But, I don't believe that should prevent the strategy from moving forward.
- EAG8. The portfolio does not set specific outcomes and metrics like it does with decarbonization (net zero by 2050), which will make it difficult for the state to understand what it needs to do to achieve equity.
- LAG1. The transition away from fossil fuels will, one hopes, produce new jobs and economies that pose fewer human and ecological risks. That transition will likely leave some communities and problems behind the and in the near term exacerbate inequities.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. The technology will allow co-pollutants to continue to be emitted, will prolong the use of fossil fuels and their pollutants, and will expose some communities to the dangers of leaks, human and animal asphyxiation, drinking water contamination, seismic activity, and (according to Larson, "Net Zero America" (p. 185) environmental degradation of fragile wetlands.)
- SAG2. Costs related to some actions will be greater for some income groups compared to others
- SAG4. I am concerned about the impacts of ozone on poor communities and minority communities, and I am concerned that this is not being addressed by this process. Ozone is an important greenhouse gas, and the IPCC indicates that about 5-10
- SAG5. Although, historically underserved communities are those currently most vulnerable to climate change, and thus will benefit more from climate remediation programs (from a more general perspective), the new climate economy might require a level of training or education not always accessible to these communities. The intension presented in the portfolio is good, but the major concern is related to the mechanism by which this will be implemented. Socioeconomic and demographic disparities are more complex issues, which requires multi-approach solutions to be solved. We should bear in mind that these communities are also very ill equipped to deal with the transition required by many climate remediation measures. As such, any serious and equitable plan should include strong measures to insure that these already deeply affect populations are not left behind during the transition to a more climate friendly economy. More importantly, just because they are to benefit the most from climate remediation, does not mean that it should be done at their expenses.
- SAG7. Improve the efficiency and resilience of homes

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG1. We're starting with the lowest hanging fruit like diversity in hiring for government climate offices, which is very important. But it's not enough.
- EAG3. Clean energy transition will start
- EAG6. A stronger middle class, and fewer impoverished residents, will drive a stronger economy



- EAG7. Fundamentally, I greatly appreciate the fact that there is verbiage that speaks to the equity issue. That in itself is earth-shattering and historic in our state and it should be further evolved and developed.
- EAG8. There are many expressions of the desire to achieve equity in the draft portfolio, which is a good start.
- FIAG1. Looking at this from a prospective lens, if emissions reductions do occur and a meaningful economic transition can occur at the same time, it would lead one to expect positive outcomes.
- SAG3. Many of the strategies include elements to address disparities and deploy assistance/incentives to include all Louisianans.
- SAG5. While climate change affects the whole planet, many already marginalized communities are usually more affected. It is thus easy to think that they will also be the one to benefit the most from climate remediation.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG1. We need data to identify the most vulnerable communities, and then we need to target resources to those communities. Then we need to measure whether we're actually reducing those disparities. All investment decisions should be informed and tracked by race, geography, age, industry etc., and then we should adjust investment accordingly.
- EAG2. Measure and reduce unemployment in underserved communities.
- EAG3. Rethinking some of the strategies can lead to better outcomes for everybody
- EAG5. The portfolio points out the action "will not overburden vulnerable communities." Because many communities are already overburdened, explicitly positioning communities for meaningful opportunities associated with this transition is key
- EAG7. I think there should some sort of Equity 2.0 body of work that emanates from the foundation developed by this current focus on the equity issue.
- EAG8. Set specific equity goals. Some suggested goals are 0 percent poverty by 2050, reduce the state's Gini coefficient to 25 by 2050, and/or eliminate racial wealth/income gaps by 2050.
- SAG2. Grant programs; matching funds
- SAG4. Louisiana needs to do more to take a data centered approach to reducing the impacts of climate change. I am proposing that Louisiana open an Office of Climate Informatics, to provide cross-cutting data analysis to assist in this matter. Please see the attached proposal.
- SAG5. I believe that it will require a rigorous plan including some K-12 education reforms, and even some community college programs, to provide these communities with the enough training for the new jobs generated

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.



*Maximize reduction and mitigation of historical and structural inequities and their impacts for underserved and marginalized communities, including communities of color and indigenous peoples*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG2. When it comes to environmental justice communities, we really need to (1.) Stop the harm, (2) Repair the harm, and (3) put things in place so it's not going to happen again. What are we going to do to make sure it's not going to happen again. There's not much trust with LDEQ, so who's going to hold them accountable? When it comes to CCUS, we've seen what happens with pipelines and vulnerable communities.
- EAG5. Same comment as above
- EAG6. This is a tall order, that will require legislation at multiple levels of government that are unlikely to occur
- EAG7. None
- EAG8. The portfolio does not create a program to specifically address historical and structural inequities, such as reparations or land back.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. The technology will allow co-pollutants to continue to be emitted, will prolong the use of fossil fuels and their pollutants, and will expose some communities to the dangers of leaks, human and animal asphyxiation, drinking water contamination, seismic activity, and (according to Larson, "Net Zero America" (p. 185) environmental degradation of fragile wetlands.)
- SAG2. Actions do not repair costs associated with historical discriminative practices
- SAG3. Most of the strategies did not specifically mention historical or structural inequities.
- SAG4. As a white guy, it's hard for me to fully answer this. However, Hurricane Ida reminds me of the how climate events can disproportionately impact people of color, indigenous communities and poor communities.
- SAG5. Same concerns as above

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG6. Elimination of structural inequities can lead to higher educational attainment, better informed citizens, and economic achievement
- EAG7. Again, I think by the simple fact that we are giving attention to the equity issue is monumental and should be further evolved in terms of actions.
- EAG8. There are possibilities for prioritizing marginalized communities in workforce development or to receive assistance in things like housing upgrades.
- SAG3. Many of the strategies include elements to address disparities and deploy assistance/incentives to include all Louisianans.



- SAG5. Because the entire society is transitioning to a new economy, this is a unique opportunity to build into the new economy; measures that could help reduce or even eliminate current economic and social inequities affecting underserved and marginalized communities.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG1. In quarterly meetings, there should be reports on whether we're meeting our goals.
- EAG2. We have to be realistic and consider the dangers of new pipelines. What are they going to do if they're a hazard to the community? Need a plan for if these systems fail. We need systems that work with nature.
- EAG5. Same comment as above
- EAG7. Ditto from above: I think there should some sort of Equity 2.0 body of work that emanates from the foundation developed by this current focus on the equity issue.
- EAG8. Following federal and international calls for reparations, the state should commission a study on repairing harm to Black and Indigenous communities.
- SAG4. As I mentioned above, everything that we can do to reach the governor's goals early, will help reduce stresses on the system, including for communities that have experienced historical inequities.
- SAG5. Not sure
- SAG7. Mitigation of pollutants in the marginalized communities – Who pays for it? And how it will be implemented?

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. Maximize may be the key term here, and whether that is a distinct possibility. One could envision an economic and environmental transition producing winners and losers. Equity, of course, should always be strived for, but I'm not sure anyone has a crystal ball to predict for sure who might be among the winners and losers.
- SAG1. Although an important consideration, I am not sure if this should be a priority. Rather, it should be an overall aim of every strategy

#### *Maximize engagement with and participation of communities in decision-making and implementation*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG1. The portfolio doesn't fully address co-governance with community stakeholders who are impacted. Consulting with communities is not the same as sharing power with them.
- EAG2. Sections on engaging with Indigenous peoples doesn't specify whether tribes are federally recognized.



- EAG6. Effective engagement/participation cannot occur without greater equity across the board
- EAG7. None
- EAG8. The final report should go farther and give communities more power to govern themselves. Under current law, cities are prevented from doing things like raising the minimum wage. The parish council system has also overruled individual towns and communities when they object to petrochemical development in places like St. James and Ironton.
- LAG1. This should be a result but unless it is made a stated aim it won't be. This is especially true with public engagement requirements being scaled back under NEPA and the expand use of "categorical exclusions" notice and comment requirements for some projects and classes of projects.
- LAG3. It appears that the portfolio is largely neutral on the issue of how to successfully engage and EDUCATE the public on the necessity of and likelihood of success of different potential emissions reduction strategies.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. The technology will allow co-pollutants to continue to be emitted, will prolong the use of fossil fuels and their pollutants, and will expose some communities to the dangers of leaks, human and animal asphyxiation, drinking water contamination, seismic activity, and (according to Larson, "Net Zero America" (p. 185) environmental degradation of fragile wetlands.)
- SAG2. Only a couple of mentions of "significant" engagement but details need to be provided on how local knowledge will be collected and utilized in the planning and implementation of actions
- SAG3. Concerned that not all strategies included education of communities to ensure adoption and or prioritized widespread participation. Education is needed to motivate people to adopt new lifestyle and energy use choices.
- SAG4. Right now, I feel like the lack of quantitative information on the magnitude of specific actions and policies could hinder the acceptance of this project, and could make it more difficult for communities to engage.
- SAG5. None
- SAG7. Lead by example through energy benchmarking in state public buildings

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG2. It's good to include Indigenous people but we need specificity.
- EAG6. By allowing engagement/participation we can achieve public policies that reflect the wishes of the majority
- EAG7. I don't readily see the benefits here.
- EAG8. The wording in Strategy 27 is strong about partnering with communities.
- SAG3. There were strategies that increased education and outreach.
- SAG5. None

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this





fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG1. The state's goals needs to create opportunities for accountability by setting specific metrics. The state should set a goal for people to see themselves in the plan.
- EAG2. Any reference to Indigenous people should specify that non-federally tribes are included as well.
- EAG5. Throughout the transition and beyond, equity leaders throughout the state should be frequently engaged and trusted to review practices and provide counsel
- EAG7. I think we need to pay close attention to legislative efforts in our state to minimize and greatly reduce the engagement of underserved communities of color in our state. There are such movements happening around our country at the moment.
- EAG8. Add that communities will be given material support to ensure that they are better able to participate in collective decision making.
- SAG2. Need to clearly define strategy for participatory planning, engagement, assessment that includes a stakeholders representing vulnerable populations
- SAG5. None

#### Other Comments (Optional)

- EAG7. None
- EAG8.
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. Robust public participation should always be encouraged and reached for.
- SAG1. Community involvement is just as important as the industry recognition of the portfolios required for 2050

### Fundamental Objective Category: Managing for Short- and Long-Term Success

The fundamental objectives associated with this category are:

- 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

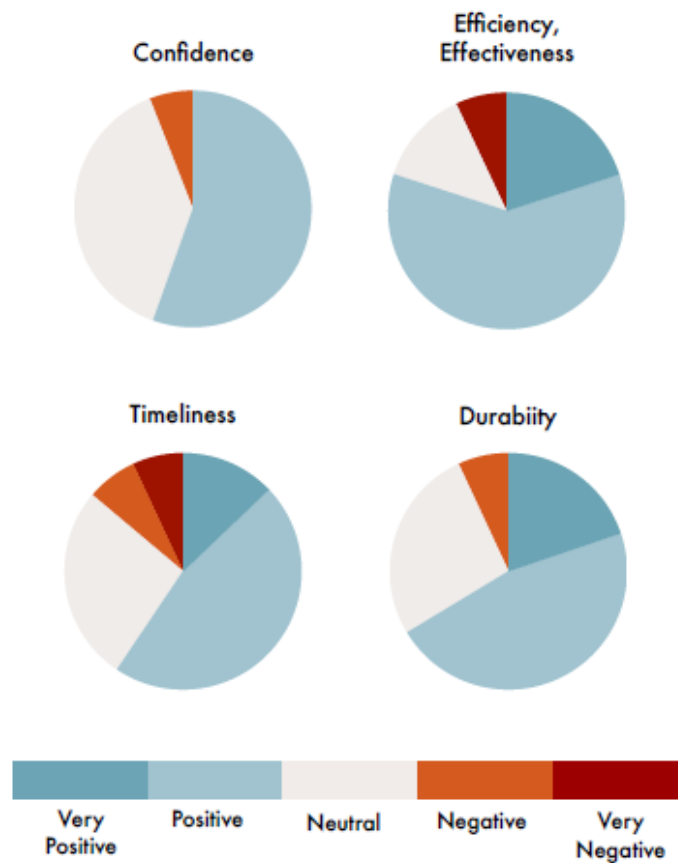


Figure 16. Distribution of responses for the objectives associated with Managing for Short- and Long-Term Success.

Generally positive or neutral outcomes were predicted for all FOs associated with Managing for Short- and Long-Term Success (Figure 16). Respondents noted the potential for public support of bold action, but also that there was a lack of specificity in engagement and public education implementation and that there would likely be challenges given the currently polarized social environment. In regard to timeliness, respondents indicated that this outcome would depend on implementation pathways. Responses on the efficiency and effectiveness of the portfolio included noting uncertainty in the outcomes based on reliance of some actions on new technology, as well as how effective some policies might be given they related on voluntary rather than mandated action.

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

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG1. Again, we need to set bold goals that bring in the public. An economic frame is effective. People who are struggling want to know that they're a part of what's next. People want to thrive.
- EAG5. The studies deployed through this portfolio will aid in community confidence
- EAG6. Current polarization and disinformation through social media will challenge credibility of authorities



- EAG7. My concern is that there is such an entrenched level of discounting the truth around this issue that we won't really realize much tangible benefits in this regard.
- EAG8. This section depends on implementation. The state should prioritize programs that confer material benefits onto people right away, such as housing efficiency upgrades.
- LAG3. It appears that the portfolio is largely neutral on the issue of how to successfully engage and EDUCATE the public on the necessity of and likelihood of success of different potential emissions reduction strategies.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG2. Lack of public knowledge; not enough detail on outreach, how trust will be built and how support will be garnered for these initiatives
- SAG4. The lack of specifics on the amount of emissions reductions that each action will could to will generate a high degree of skepticism among the scientific community. I could also see this being a problem with gaining acceptance in the broader community. It is not too hard to imagine someone saying, "I recognize climate change is a problem, but why should I do this if I don't know how much good it's going to do?"
- SAG5. Louisiana economy is very reliant on fossil fuels, and as such, there are many political and social factors currently contributing to the high level of climate change skepticism observed through the state. Although I am fully in support of maximizing the confidence of the public and stakeholders in the outcome of emissions-reduction strategies to increase support for their implementation, I am not sure how effective it will be.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG6. If this can be achieved, it could be the cornerstone to long-term success
- EAG7. If we can begin to see some tangible and popular benefits in this realm, it could help us turn the corner in gaining more political will behind efforts to improve our environmental conditions.
- EAG8. There are several sections that would help people see the benefits of decarbonization including jobs programs and incentives that could reduce people's utility burdens.
- SAG3. Benchmarking is extremely important for confidence building. Many strategies suggested benchmarking, tracking and setting goals for energy type and limits for emissions. Systematic data collection is extremely important for public buy-in, and is addressed in many of the strategies.
- SAG4. There are a lot of very good ideas in this portfolio, but it's hard to evaluate it from a mathematical perspective as we don't know the amount of emissions associated with each action item.
- SAG5. The benefit here stems from my concern. Since Louisiana's economy is very reliant on fossil fuels, and as such, there are many political and social factors contributing to the high level of climate change skepticism observed through the state, for any action plan to be effectively executed it will require as much public and stakeholders support as possible.



Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG5. Results of studies should be intentionally shared and distributed to the communities that will be most impacted
- EAG7. I think a strategy should be added that focuses on enhancing the public's understanding around the importance of emissions reduction strategies. I'm not convinced the public understands sufficiently around this issue.
- EAG8. Expand programs that are designed for oil and gas workers to include all people in need of financial assistance or re-training.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG3. Adding some open comment periods to some of the strategies to engage stakeholders might be helpful.
- SAG4. This portfolio needs to be made more quantitative, in terms of the magnitude and timing of emissions reductions. The Climate Initiative should look to Louisiana's Coastal Master planning processes, and the decision support tool that it uses as an example of a highly quantitative planning process that is carried out over a long time frame.
- SAG5. The best strategy here will be to depoliticize communication and educational campaigns, by focusing primarily on the increasingly severe effects on the climate change on the state.

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. As the saying goes, the proof will be in the proverbial pudding. Public trust in government at all levels seems to be lacking, and has been for a while. Stakeholders will be judging whether positive outcomes can be achieved, both from an environmental standpoint as well as an economic standpoint.

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

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG3. Without mandating actions it might not get done
- EAG6. The lingering commitment to status quo by the energy industry and its resistance to emission control could impede this step
- EAG7. Ditto from immediately above.
- EAG8. The plan should clarify which actions should come first. For instance, electrification and renewables make all other mitigation strategies more efficient and effective.
- LAG3. With respect to the strategy categories of decarbonization, clean energy transition, and safe and resilient energy and infrastructure, there are several actions that have the potential to lead to substantial



emissions reductions. More detailed comments on each of these actions is provided in the Strategy/Action Input worksheet.

- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG4. Overall, I don't see any hard numbers for the amount of emissions that each proposal will account for. Given that, it is very hard to know about the overall effectiveness of either the total package, or of sections of the package.
- SAG5. The main concern is the early impact of these strategies on Louisiana economy. For any transition, it always get worse before it get better, and if the early action results in a dramatic effect on the state economy, the program will lose public support, which might reduce the political will to see the program through.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG7. Ditto from immediately above.
- EAG8. The plan has a strong pathway for electrification if it can get implemented.
- SAG1. There should be specific strategies detailed in the final report if this has to be met.
- SAG4. There are a number of positives here, including the renewable power standards, efforts to develop wind and solar power, the efforts to increase leak detection, and reduce methane leaks, reduce vehicle miles travelled, set carbon requirements for purchasing, increase the availability of electric vehicles, increase public transport, reduce sprawl, and increase home efficiency. However, in all of these cases, the lack of specifics threatens to reduce the potential for benefits.
- SAG5. The benefit stems from the fact that, maximizing the efficiency and effectiveness of emissions-reduction strategies might help produce better economical results earlier, and probably mitigate any negative effect the transition might have on the economy.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG7. Ditto from immediately above.
- EAG8. List potential emissions reductions over time and associated cobenefits for individual actions.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG4. We need an estimate of the level of reduction from each action. Absent specific, justifiable numbers, there is no way for me to judge the effectiveness of the project. I am hopeful that the release of the Energy Policy Solutions Tool later this month will help address this issue.
- SAG5. This should be one of the major priorities of the action portfolio



### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. Efficiency is certain a worthy goal and should be the standard. Whether that can or will be effective or not remains to be seen.

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

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG3. Without mandating actions it might not get done
- EAG6. Same as above
- EAG7. None
- EAG8. Many of the actions in the portfolio, especially in sectors such as agriculture and transportation, are voluntary and incentive based. We need bolder action to hit our targets.
- LAG3. The portfolio is high-level and there is simply not enough information to get a feeling for how quickly some of these strategies can be implemented. A lot of moving pieces will be needed to develop/implement these actions, including the need for legislative action.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG4. The process right now has very limited information on timing, and essentially no information on how we are going to meet the governor's goals set for 2025 and 2030. The processes needs a lot more specifics on how these near and medium term goals will be met, as well as how the 2050 goal will be met.
- SAG5. We might worry too much about the economy, rightfully so because it is the livelihood of the state population. However, by doing so, we might miss important dateline, and the action taken might not produce the expected effects because they came too late.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG7. The sooner we begin to realize the implementation of such strategies, the easier it could be to further build on such work.
- EAG8. There are some actions that suggest strong requirements, such as a renewable portfolio standard.
- SAG5. Timely action will help remediate or at least mitigate some severe effect of climate change before it is too late.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)



- EAG7. Ditto from immediately above.
- EAG8. Make actions mandatory rather than voluntary where possible.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG4. Every action needs to be associated with a time frame, so that we know when and by how much this portfolio will lead to emissions reductions. I am hopeful that the release of the Energy Policies Solution tool later this month will provide some of this needed information.
- SAG5. None

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. It seems as though timeliness will be dependent upon government funding and/or market pull/advances. ESG appears to be pulling the private sector along, although some will say not fast enough.

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

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG3. How long will we incentivizes
- EAG6. A strategy used in the past has been to kick the can down the road, in the hopes of new technologies that will solve the problem, we can't wait on that future discovery
- EAG7. None
- EAG8. The state needs to take bold action on its own behalf to get the ball rolling. The state should directly build out as much infrastructure as possible rather than incentivizing other governments/private companies to do so or waiting on federal funding.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG1. I do not see how, for example, a strategy developed for Louisiana alone can be successful if our sister states such as TX, AR, MS, AL etc. do not have similar strategies for the future.
- SAG4. See two columns over
- SAG5. A new climate friendly economy is here to stay, otherwise we will return to the same old habits, and any gain accrue will be lost. This requires a complete change in the way we measure economic, social and cultural success. I am not sure whether Louisiana is ready for such a radical change.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG7. Ditto from immediately above.



- EAG8. Once infrastructure is built and the state is used to doing things a certain way, decarbonization will continue.
- SAG5. Climate change did not happen in days or years, it took centuries, and any remediation program should be scheduled to take centuries as well. The benefit is that it will help us build new habits which will be more friendly to our environment.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG7. I believe there has to be more done to incentivize the business sector to become more bought into this issue and be more innovative in how they help to address it.
- EAG8. Create new institutions or new strategies that allow the state to be proactive. For example, if the state is interested in financing projects, it could create a public green bank.
- LAG6. There is very little here about reducing industrial production and steering industrial demand toward green alternatives. I am aware of no path to net zero that refuses to do this.
- SAG4. I see at least two areas where specifics are needed. First, I think we need to focus on emissions-reduction strategies that employ technologies that either currently exist, or which are likely to exist in the near term. We should put a much lower emphasis on strategies that are emerging or which have not been deployed at scale, as we need technologies that we know will work. Additionally, Hurricane Ida reminds us of the vulnerabilities of home and infrastructure to powerful climate events. We need to ensure that we are not relying on structures that could fail during intense winds in a hurricane.
- SAG5. None

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. It seems as though technology will continue to advance. Science can eventually solve for the problem. But whether those technologies can be brought to scale, at a reasonable cost remains an open question at this point.

### Fundamental Objective Category: Strengthening the Economy and Workforce

The fundamental objectives associated with this category are:

- Maximize employment, economic opportunity, and support for Louisiana workers
- Maximize economic growth



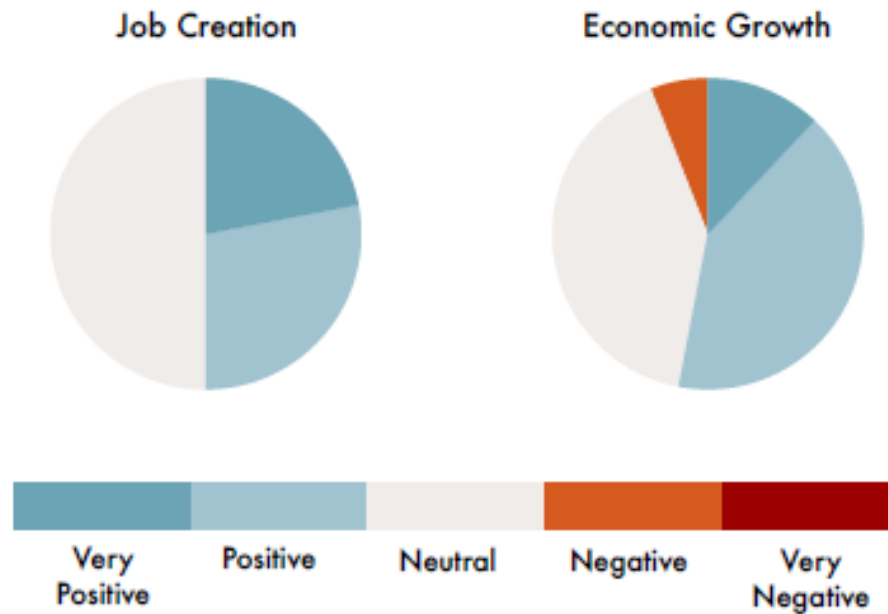


Figure 17. Distribution of responses for the objectives associated with Strengthening the Economy and Workforce.

The majority of respondents predicted positive or neutral outcomes for FOs related to job creation and economic growth (Figure 17). The potential for there to be variability in the quality of jobs that would be created was noted. In addition, respondents indicated uncertainty, unknowns, or concerns related to how quickly the economy and workforce could transition into supporting the new sectors (e.g., renewable energy) associated with strategies and actions of the portfolio, and what the economic outcomes of that transition would be in the short-term. Also noted was a lack of specificity in how that transition would occur in order to ensure equitable opportunities and outcomes for communities and residents, including those with varying educational backgrounds.

#### *Maximize employment, economic opportunity, and support for Louisiana workers*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG1. In order to achieve equity, we need to prioritize certain communities.
- EAG2. The state needs to think about other professions such as traditional seafood harvesters. They won't be able to make a living anymore because of the damage that has been to the environment. What is the state going to do to make sure we rebuild or transition other industries like traditional seafood harvesting and others?
- EAG5. Insufficient details about the efforts that will be enforced to ensure equitable access to workforce and procurement opportunities
- EAG6. If we allow low-skill, low pay jobs, and short term construction to be the jobs added we will short change our citizens
- EAG7. My concern is that there is such an entrenched level of discounting the truth around this issue that we won't really realize much tangible benefits in this regard.



- EAG8. Again, the question is which workers will benefit. Currently the state’s businesses will often use prison labor or bring in temporary workers from other countries. Even the state’s attorney general has done this: [https://www.nola.com/news/politics/article\\_8fc765b6-4ea2-11ea-928c-770507d55b41.html](https://www.nola.com/news/politics/article_8fc765b6-4ea2-11ea-928c-770507d55b41.html)
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana’s economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. By prolonging the use of fossil fuels, the strategy delays the accrual of the “lion’s share” of economic opportunity that come with the transition to renewables.
- SAG3. Changing energy sources is going to change the job distribution in Louisiana. Retraining programs may be needed, and should be more integrated into the strategies.
- SAG4. The initiative needs to do more to think about workers who are in fields that not technically classified as oil and gas, but which depend on the oil and gas industries (e.g. shipping, boat builders, caterers for offshore oil rigs), and how their jobs will be impacted by an energy transition.
- SAG5. The concern here is whether these newly created jobs can be conducted by a broad workforce, including people without college degrees. The other concern here is the availability of training programs that can enable the current workforce to acquire the skill and credentials needed to performed the newly created jobs. It is difficult to know as the nature of these jobs are still to be defined.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG1. There’s nothing that’s actively harmful in the portfolio.
- EAG6. With skillful job development, we can open up new, rewarding opportunities for workers with a range of skills and educational backgrounds
- EAG7. Ditto from immediately above.
- EAG8. The portfolio, if fully implemented, would undoubtedly create a large number of jobs with all of the actions proposed.
- FIAG1. It seems like there are several existing state entities that are focused on workforce development and specifically worker retraining and/or reskilling. LED FastStart, LCTCS institutions, Louisiana Workforce Commission. There are also regional economic development organizations and non-governmental organizations that have workforce development as a priority and recognize the opportunities for Louisiana in the energy transition.
- SAG3. New energy landscape in Louisiana will lead to new opportunities and jobs in many sectors.
- SAG5. The overall goal of the portfolio is to create number of “low-carbon jobs”, and since many of these new jobs requires new technologies, it is expected that they will also pay decent wages.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG1. The plan should prioritize schools in disinvested census tracts and/or communities with the greatest climate burden. We should use data to target communities with the high unemployment rate. When discussing universities, there should be intentional partnerships with HBCUs. We should also build



clear training pathways between community colleges and universities. People need to get paid for their training opportunities, especially with unemployed workers. When we use tax incentives for the energy sector, they should be tied to hiring local workers especially those from disadvantaged communities.

- EAG2. Expand coverage for more Louisiana professions who are suffering from the climate crisis.
- EAG5. Engage community partners who provide direct training services to minority communities
- EAG7. I believe there has to be more done to incentivize the business sector to become more bought into this issue and be more innovative in how they help to address it.
- EAG8. The state should cease using prison labor or create labor protections for prisoners and pay them prevailing wages.
- SAG3. Consider integrating retraining programs, and training programs to position Louisiana residents for employment in renewable energy sectors. Training for plugging legacy wells was explicitly mentioned, but there will be other training needed. Partner with institutions of higher education to develop training that will encourage lifelong learning and a growth mindset.
- SAG4. The climate initiative should put a greater priority on jobs that could be created in the fields of forestry and agriculture, as the state seeks to expand its forest carbon sinks. Louisiana's forests are one of the state's largest carbon sinks, and we need to think about ways to expand that sink. Doing so, will involve foresters, and these foresters should be trained, and houses in Louisiana. Similar points could be made about expanding the soil carbon sink in agriculture, and the possibility of expanding the sustainable agriculture workforce.
- SAG5. The best strategy might be to involve universities and community colleges in the development of this new climate friendly economy. This will allow them to adjust the educational programs to these new jobs.

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.

#### *Maximize economic growth*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG3. State funds should be for people not to help business profit
- EAG6. By pushing to maximize economic growth (over emissions reduction/control) we would open the door to continued peril
- EAG7. My concern is that there is such an entrenched level of discounting the truth around this issue that we won't really realize much tangible benefits in this regard.
- EAG8. Some proposed solutions such as CCUS that require pipelines could have an adverse impact on coastal wetlands, which would decrease storm protection and lead to storms that displace people and lead to less growth.
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.



- LAG6. An expansive CCS program would offset many benefits provided elsewhere. By prolonging the use of fossil fuels, the strategy delays the accrual of the “lion’s share” of economic growth that come with the transition to renewables.
- FIAG1. Some of the rhetoric that has been expressed during this task force process is concerning from an economic standpoint, such as halting emitting activities and revoking permits from emitting operations. These operations have historically employed a good number of Louisiana residents, paid state and local taxes and typically have participated in community activities from a financial and/or volunteer standpoint.
- SAG3. Innovation could be more broadly incorporated into the strategies, not just the ones around energy transition.
- SAG4. The initiative needs to think more about how Louisiana’s economy will be impacted by energy transitions that are occurring in the rest of the country and the rest of the world. For example, if the rest of the US shifts to electric vehicles, how will that impact refineries in Louisiana.
- SAG5. Louisiana economy is currently extremely reliant on fossil fuels, and some slowdown of the economy is to be expected, at least during the transition. The other concern is related to the fact that the development of renewable energy sources will need some early reliance on tax incentives for industry growth and stability. It is not sure if there will be a political and community appetite for these measures, especially when the fossil fuels industry is not in need of such incentives.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG1. I fully support a job guarantee.
- EAG6. Growth tends to favor the wealthy and we need to ensure the benefits flow across all income groups.
- EAG7. Ditto from immediately above.
- EAG8. The portfolio, if fully implemented, would undoubtedly generate loads of economic activity.
- FIAG1. Louisiana has specific assets and advantages that many seem to believe will play well in the energy transition.
- SAG3. Innovation activities such as in Strategy 19 should lead to enhanced economic development in Louisiana
- SAG5. Since there are many components involved in the creation of a climate friendly economy, it is expected that it will result in a wide diversification of our industry, which hopefully will employ a large and diversified workforce.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG1. There’s a huge opportunity with distributed solar to employ local Black- and Brown-owned businesses. The state should incentivize small businesses entering the solar sector to hire disadvantaged workers that have graduated from state approved training programs. Furthermore, when workers have to transition from one sector to another, workers should have some autonomy over which new sectors they’re trained for.



- EAG7. I believe there has to be more done to incentivize the business sector to become more bought into this issue and be more innovative in how they help to address it.
- EAG8. Add restrictions on any solutions that decrease coastal resiliency.
- SAG5. It will be helpful if from the onset, the plan is to use a large diversity of renewable energy sources, and a wide variety of technology to combat climate change. The so-called “all of the above” strategy.

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- FIAG1. It feels like there will be winners and losers, as stated earlier. Not sure anyone today can predict with any certainty how that will play out or balance out from a macro standpoint.
- SAG1. I would not call this maximizing economic growth, but maintaining a steady economic growth.

### Fundamental Objective Category: Conserving Natural Resources and Protecting the Environment

The fundamental objectives associated with this category are:

- Maximize preservation of natural resources and ecosystem services
- Maximize environmental stewardship and support of healthy ecosystems

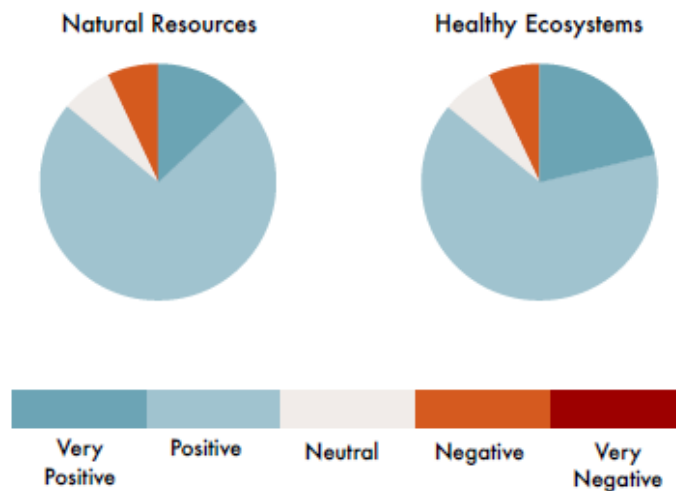


Figure 18. Distribution of responses for the objectives associated with Conserving Natural Resources and Protecting the Environment.

The majority of respondents predicted positive outcomes for FOs related to preserving natural resources and supporting healthy ecosystems, with some negative and neutral outcomes predicted (Figure 18). Respondents noted that there were likely co-benefits of a renewable energy transition and other emissions-reduction actions for the environment, but there were some concerns expressed over the potential environmental impacts of CCUS. There was uncertainty indicated for outcomes to these FOs related to the likelihood of successful implementation,



and specifically that there were limited details on implementation pathways (particularly outside of the coastal zone). It was noted that there would be improved likelihood of positive environmental outcomes with increased benchmarking and tracking of metrics related to these objectives.

*Maximize preservation of natural resources and ecosystem services*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG6. Centuries of neglect of ecosystem services has created a perilous situation that we should avoid repeating
- EAG7. My concern is that certain business interests and special interest groups will wage even more of warfare of messaging to dissuade our citizens from understanding and believing there is a need to conserve natural resources and protect our environment.
- LAG4. Actually being able to implement the portfolio successfully to achieve desired outcomes
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. The technology will allow co-pollutants to continue to be emitted, will prolong the use of fossil fuels and their pollutants, and will expose some communities to the dangers of leaks, human and animal asphyxiation, drinking water contamination, seismic activity, and (according to Larson, "Net Zero America" (p. 185) environmental degradation of fragile wetlands.)
- SAG4. There needs to be more emphasis on preserving, restoring, and expand natural resources and ecosystem services outside of the coastal zone. While Louisiana's Coastal Master Plan does a good job of addressing resilience to climate change within the coastal zone, there is no comparable plan in place outside of the coastal zone. The initiative needs to think about expanding forests and other natural systems that sequester carbon, and to do more to reduce agricultural emissions and enhance carbon sequestration in soils.
- SAG5. None

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG6. Preserving natural resources will be far more feasible when we turn to renewables.
- EAG7. Ditto from immediately above.
- LAG4. If portfolio successfully implemented, then this objective will be realized as a positive outcome
- FIAG1. Being as conservation conscious and energy efficient as possible seems like a good place to start.
- SAG2. Potential for multiple benefits to include better water quality and floodplain management (flood risk reduction); potential to earn points in the Community Rating System (CRS)
- SAG3. Many of the strategies lead to healthier and more sustainable practices that will protect Louisiana's natural resources. Education on climate change is also proposed in the strategies, and will be essential. Innovation will lead to new sustainable processes.
- SAG4. There are some positives in strategies and actions with regard to expanding natural systems and ecosystem services.



- SAG5. Protecting the environment, especially wetlands, mangroves, barrier islands, and other coastal ecosystems that mitigate storm impacts should be the priority of any climate remediation program in the state of Louisiana.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG7. I think a strategy should be added that focuses on enhancing the public's understanding around the importance of emissions reduction strategies. I'm not convinced the public understands sufficiently around this issue.
- SAG2. Potential partners to support efforts: local floodplain managers, Louisiana Floodplain Management Association (LFMA), La Watershed Initiative
- SAG4. Expanding natural sinks could become a positive of this initiative, if expanded and implemented.
- SAG5. None

#### Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.

#### *Maximize environmental stewardship and support of healthy ecosystems*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG6. We have not done a good job in the past of fostering conservation while pushing economic growth and undergoing major energy transitions
- EAG7. My concern is that certain business interests and special interest groups will wage even more of warfare of messaging to dissuade our citizens from understanding and believing there is a need to conserve natural resources and protect our environment.
- LAG4. Actually being able to implement the portfolio successfully to achieve desired outcomes
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere. The technology will allow co-pollutants to continue to be emitted, will prolong the use of fossil fuels and their pollutants, and will expose some communities to the dangers of leaks, human and animal asphyxiation, drinking water contamination, seismic activity, and (according to Larson, "Net Zero America" (p. 185) environmental degradation of fragile wetlands.)
- SAG4. See above.
- SAG5. None



What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG7. Ditto from immediately above.
- LAG4. If portfolio successfully implemented, then this objective will be realized as a positive outcome
- FIAG1. Being as conservation conscious and energy efficient as possible seems like a good place to start.
- SAG2. Potential for multiple benefits to include better water quality and floodplain management (flood risk reduction)
- SAG3. Benchmarking and tracking emissions, sustainable practices, etc., will help with environmental stewardship. Education programs will also help with health of ecosystem in the state. Working with indigenous populations and underserved populations to understand cultural implications, and to work in partnership will be key, and is included in some of the strategies.
- SAG5. Same comment as above

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG5. Conduct continued health studies, post-implementation to ensure that the outcomes are desirable, equitable, and as expected
- EAG7. I think a strategy should be added that focuses on enhancing the public's understanding around the importance of emissions reduction strategies. I'm not convinced the public understands sufficiently around this issue.
- SAG5. None

Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.

### Fundamental Objective Category: Adapting to a Changing Climate

The fundamental objectives associated with this category are:

- Increase resilience of the built and natural environment to climate change impacts
- Increase the resilience of communities to climate change



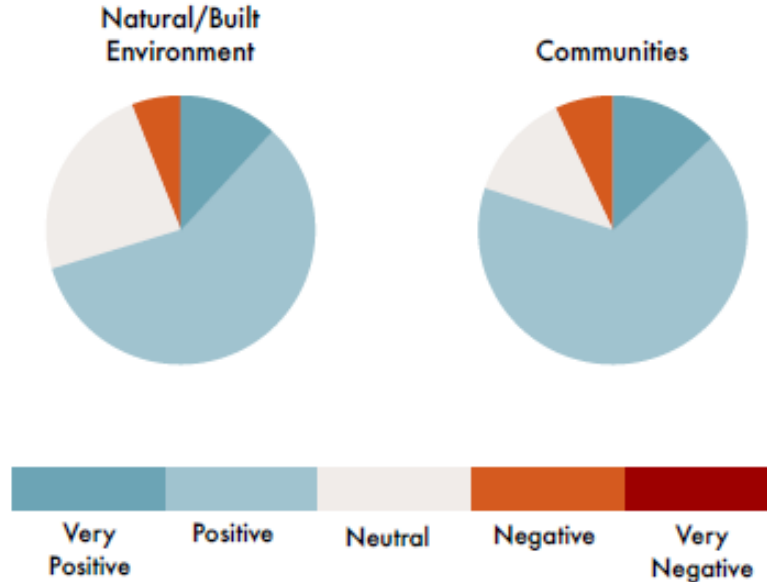


Figure 19. Distribution of responses for the objectives associated with Adapting to a Changing Climate.

The majority of respondents predicted positive or neutral outcomes for FOs related to enhancing resilience of the natural and built environments and communities to climate change impacts (Figure 19). Specific comments included noting that resiliency was likely to be enhanced by emissions reductions, particularly with rapid implementation, and that there could be co-benefits of some actions for water quality and flood risk reduction. However, it was noted that some actions might be difficult to implement, and those challenges could pose a risk to predicted benefits for these FOs, with specific concerns related to potential legal and policy hurdles, uncertainty in the reliability and effectiveness of technological and industrial solutions, and the threats that climate-related disasters pose to community and environmental resilience.

#### *Increase resilience of the built and natural environment to climate change impacts*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG2. The portfolio doesn't include the backfilling of canals, which is important for coastal wetlands.
- EAG6. If we continue to rely on structural protections, and technological fixes, we imperil our natural and built environments
- EAG7. My biggest concern is that we pick up the speed on implementing very necessary and far-reaching actionable items soon. Time is of the essence!
- LAG3. I believe that the implementation of many of these actions can lead to substantial emissions reductions (depending upon the specific actions chosen) and will necessarily lead to increased resilience of communities to climate change.
- LAG4. Multiple legal hurdles must be addressed prior to successfully achieving this objective; the number of years to change and adapt laws is a concern since time is of the essence
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.



- LAG6. An expansive CCS program would offset many benefits provided elsewhere.
- FIAG1. It seems as though it is a debatable point regarding whether relying on the natural environment would actually produce needed, significant climate change impacts.
- SAG4. We need more information on how industrial systems will respond to climate change, particularly recognizing the vast area that was impacted by Hurricane Ida.
- SAG5. The concern here is that existing climate adaptation programs might have a strong footing in the current system, which has contributed to the climate deterioration we are witnessing. Furthermore, some of the current strategies might be inconsistent or even detrimental to the action plan.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG7. If we can begin to see some tangible and popular benefits in this realm, it could help us turn the corner in gaining more political will behind efforts to improve our environmental conditions.
- LAG4. A comprehensive plan to successfully meet this objective – a holistic plan is necessary to successfully achieve the specific objectives
- FIAG1. If it is definitely proven that the natural environment is net positive from a climate change standpoint, it seems as though being “all in” is worthwhile, from numerous standpoints.
- SAG2. Potential for multiple benefits to include better water quality and floodplain management (flood risk reduction); potential to earn points in the Community Rating System (CRS)
- SAG3. The strategies to enhance federal funding to Louisiana for research, energy conversion, education, transportation are all very important to increasing resilience. In addition, making sure that our scientists/engineers/politicians are at the table for national and regional dialogs and planning exercises. A cohesive response to climate action will be essential. Training and education is also essential.
- SAG5. There is a good chance that the current climate pattern is here to stay, and might probably will never be reverse, at least not in the foreseeing future. As such, it is critical that the current and future infrastructure are design to sustain the current and future adverse effects from climate change.

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG2. Include funding to backfill canals.
- EAG7. I think a strategy should be added that focuses on enhancing the public’s understanding around the importance of emissions reduction strategies. I’m not convinced the public understands sufficiently around this issue.
- SAG2. Potential partners to support efforts: local floodplain managers, Louisiana Floodplain Management Association (LFMA), La Emergency Preparedness Association (LEPA), La Watershed Initiative
- SAG5. None

Other Comments (Optional)

- EAG2. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0207717>



- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.

*Increase the resilience of communities to climate change*

What (if any) concerns does this portfolio raise for you relevant to this fundamental objective? (Note: please focus on the portfolio as a whole here and provide action-specific feedback on the next tab.)

- EAG6. Neglect of communities and local cultures and their existing resilient practices may undermine these capacities
- EAG7. Given the increased frequency and intensity of tropical storms and hurricanes, ditto from immediately above.
- LAG4. Education needed for a large number of people to provide understanding that communities must now adapt to climate change – there is no going backwards, we are at the adaptation stage and not in a position to now reverse climate change; however, we can stop the clock at this current mark
- LAG5. There is a balance between demand for consumer items, reducing emissions, environmental stewardship and Louisiana's economy. This is an important part.
- LAG6. An expansive CCS program would offset many benefits provided elsewhere.
- FIAG1. There would seem to be a need for a large infusion of outside capital (e.g., federal government) to add to the existing resilience of communities. Is that dependence on the federal government for this to happen realistic? Transformational? Long-lasting?
- SAG4. The strategies and actions do not do much to address community resilience to climate change. The proposals are mostly focused on reducing greenhouse gas emissions, rather than building resiliency. Given that climate change impacts are becoming increasingly destructive, I see that a net negative impact to communities.
- SAG5. The concern here is that, focusing too much on community resiliency to the effect of climate change might provide us with a false sense of security, and slow down the momentum toward building a more climate friendly economy and communities.

What (if any) specific benefits does this portfolio have for this fundamental objective? (Note: please focus here on the portfolio as a whole and provide action-specific feedback on the next tab.)

- EAG7. Ditto from immediately above.
- LAG4. Provides for the implementation of creative solutions to assist communities in adapting to climate change
- FIAG1. Community-level protection is often most meaningful to, most recognized by individuals.
- SAG2. Potential for multiple benefits to include better water quality and floodplain management (flood risk reduction)
- SAG3. Partnership and education is essential in order to increase resilience to climate change. Not only do we have to continually monitor and track energy use, forest use, protection of resources, and health of the environment, but we have to educate the public on the impact of actions at every level. This is incredibly



important for communities of indigenous people and disadvantaged communities, so the strategies for added engagement and education with those groups will be essential.

- SAG4. The expansion of urban tree canopy is good- particularly if this is in minority neighborhoods.
- SAG5. Same comment as above

Are there strategies or actions that could be added to the portfolio to achieve a positive outcome for this fundamental objective? (Note: please focus only on additions here and provide feedback on actions already in the portfolio in the next tab)

- EAG7. Ditto from immediately above.
- SAG2. Potential partners to support efforts: local floodplain managers, Louisiana Floodplain Management Association (LFMA), La Watershed Initiative
- SAG3. Include more two-way communication strategies where disadvantaged communities and indigenous populations are concerned. Learn from each other.
- SAG5. None

Other Comments (Optional)

- EAG7. None
- LAG5. Although LMOGA has noted a potential predicted outcome, the stated impact and objective is not tied to any one particular strategy/action item. Thus, the predicted outcome is based on incomplete information and is subject to change upon further discussion.
- SAG1. There has to be specific protocols in the final draft towards this objective.



## CONCLUSIONS

### SUMMARY OF GHG CONSEQUENCE ANALYSIS AND OVERARCHING CONSIDERATIONS

The analysis of the draft portfolio of climate strategies and actions' GHG emissions reduction potential led to several key findings. First, electrification and hydrogen are key to reducing emissions in the industrial sector; and because 66% of Louisiana's emissions are from the industrial sector, it would be beneficial for these policies to be a component of the climate action plan. However, hydrogen production could also be considered as a part of this larger strategy so as to avoid the creation of new offsetting emissions. Sequencing of industrial decarbonization actions could be used to ensure that the electricity powering the electrification projects is from renewable energy.

Two additional experimental analyses were conducted to test the extent to which some simple additions to the draft portfolio of climate strategies and actions would maximize emissions reductions (Figure 20). The first analysis removed all hydrogen fuel switching (as seen in Figure 10). This improved the overall performance of the draft portfolio, as it removed the offsetting emissions from hydrogen production. The second analysis added hydrogen production by electrolysis and delayed the timing of industrial fuel-switching to hydrogen, as well as increasing CCS on process emissions (Figure 20, "Extended Portfolio"). The clean electricity standard was accelerated to full implementation by 2035, and the grid's storage, demand response capability, and transmission capacity were increased. The performance increase was significant; this extended portfolio reached very near net zero (Figure 20).

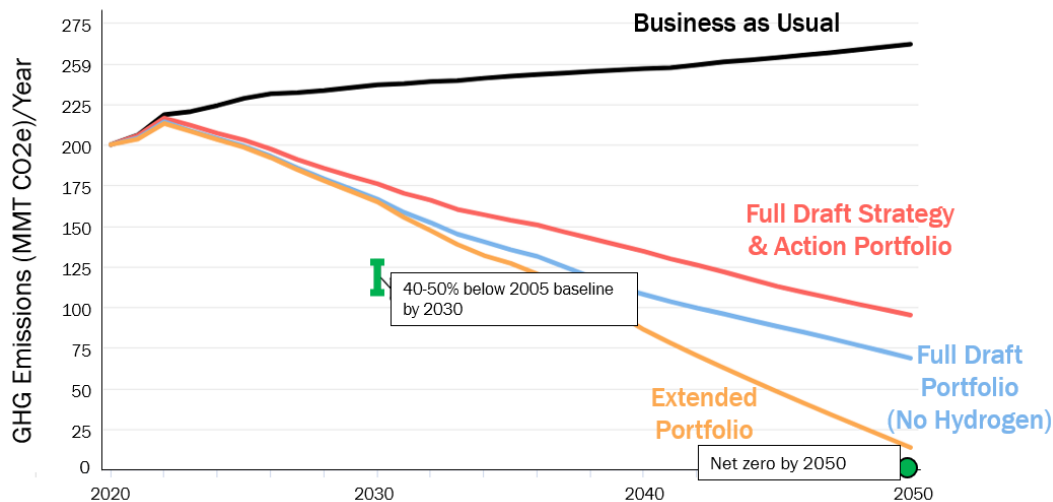


Figure 20. Additional analyses of the draft portfolio of climate strategies and actions as modelled in the EPS tool to inform policy design.

The lessons learned from the consequence analysis as well as these additional analyses allowed for continued remodeling of the draft portfolio of climate strategies and actions as it was strengthened. Several of the modeling adjustments made in the Extended Portfolio (Figure 20) informed the final policy design and modeling for the



Louisiana Climate Action Plan (2022). The EPS tool policy settings for the modeling of the Climate Action Plan’s strategies and actions are detailed in Appendix A.

## SUMMARY OF IMPACTS TO OTHER FUNDAMENTAL OBJECTIVES

The distribution of predicted outcomes from the AG members across these FO categories is provided in Figure 21. The majority of respondents predicted neutral, positive, or very positive outcomes across the FO categories. The most common outcome prediction (i.e., selected by the highest fraction of respondents) for the FO categories related to equity and to the economy was “neutral”, whereas the outcome predictions for the other FO had “positive” as the most common response.

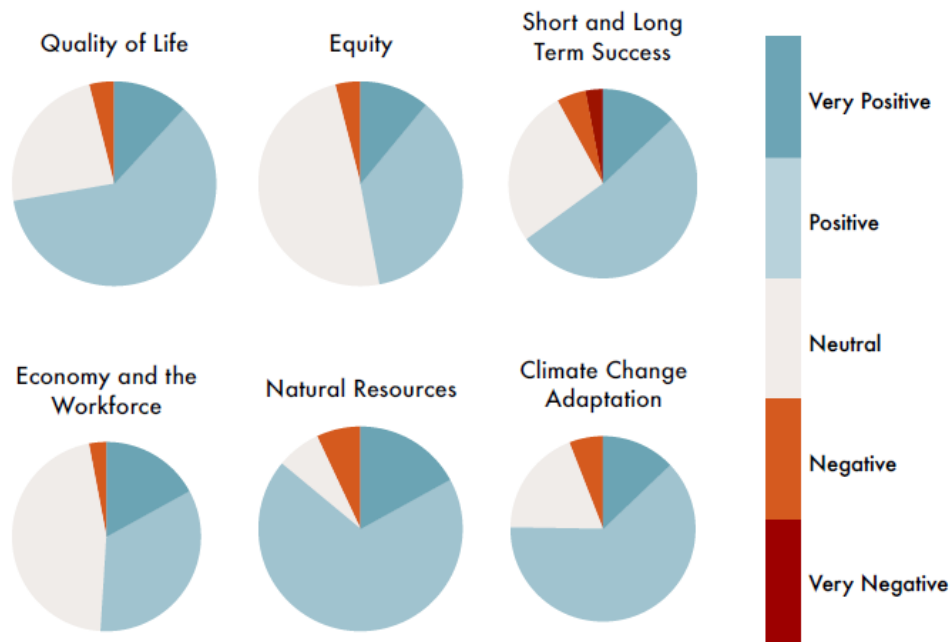


Figure 21. Distribution of predicted outcomes for the six categories of fundamental objectives evaluated by the AG members.

The distribution of outcomes predicted by the AG improved substantially for the draft strategy and action portfolio when benchmarked against the BAU scenario evaluated during the first round of consequence analysis (Figure 22). Whereas the majority of respondents predicted negative or very negative outcomes across all FO categories under business-as-usual, the majority of responses for all FO categories under the draft strategy/action portfolio were either positive or neutral. Respondents did, however, identify specific areas of concern and commented on ways to improve the overall outcomes across the FOs (outlined in the *Results* section), which were considered in revising the portfolio prior to inclusion in the final Climate Action Plan.

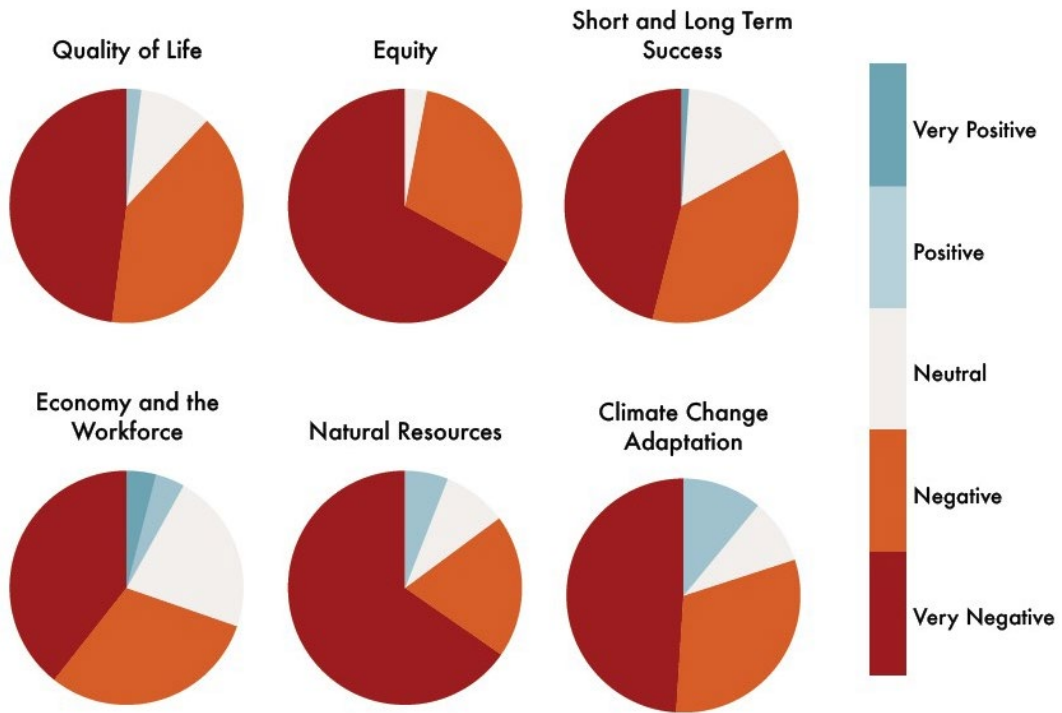


Figure 22. Distribution of responses for the BAU portfolio across the FO categories.



## ACKNOWLEDGEMENTS

EPS modeling was conducted by Allison DeJong and Shubhra Misra of the Water Institute of the Gulf (the Water Institute) with assistance from Olivia Ashmoore of Energy Innovation. Development and analysis of questionnaires was led Soupy Dalyander with input from the Planning Team and additional support from Scott Hemmerling and Jessi Parfait of the Water Institute. Additional input and review provided by Erin Kiskaddon, Charley Cameron, and other team members at the Water Institute and the Louisiana Governor’s Office of Coastal Activities.

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## APPENDICES



## APPENDIX A: FINAL MODELING POLICY SET

After the completion of the second consequence analysis, guided by the lessons learned and other feedback received, the Planning Team revised the strategies and actions to be stronger and to meet the Governor’s goal of net zero by 2050. An interim model set was presented in December 2021 to the Task Force that was still short of this goal. A final set of revisions took place in December 2021 and January 2022.

The strategies and actions were, in some cases, reorganized from their original numbering in this draft. The changes made to the modeling were iterative with the edits made to the portfolio, allowing for strengthening of intensity and more aggressive scheduling within the EPS tool. The final model policy set is in provided in Table 3.



Table 3. Final EPS policy settings for the Climate Action Plan. Inputs related to schedule and intensity along with the original rationale from the second consequence analysis are also provided. Instances where US NDC scenario settings were used are noted. Changes made for the final portfolio are highlighted in yellow and the rationale noted. A full list of policy descriptions for the EPS is provided at <https://us.energypolicy.solutions/docs/policy-design-index.html>.

Draft Strategy	EPS Policies (Changes Highlighted)	Schedule and Intensity (Changes Highlighted)	Original Rationale	Updates Made
(1) Shift towards a clean, renewable, and resilient power grid	<ul style="list-style-type: none"> <li>• <b>Clean Electricity Standard at 100% by 2035</b></li> <li>• <b>Early Retirement of Power Plants</b> at 500MW per year (Coal, Non-Peaker Natural Gas, and Lignite only)</li> <li>• <b>Carbon Capture and Sequestration</b> on Nat Gas Peaker and Nonpeaker, Biomass at <b>90% of emissions captured</b></li> </ul>	Retirement scheduling: 25% by 2025, 50% by 2030, 100% by 2050	CCS setting is to match what's specified in Action 1.1.	The CES was updated to match Action 1.1, which was strengthened to 100% clean energy by 2035. The CCS setting was also changed to 90% to match this action.
(2) Increase renewable electricity generation and access	<ul style="list-style-type: none"> <li>• <b>Distributed Solar Carve-out</b> at 20%</li> <li>• <b>Distributed Solar Subsidy</b> at 30%</li> <li>• <b>Retrofit</b> Existing Buildings (Urban Residential) at 5%</li> <li>• <b>Rebate for Efficient Products:</b> Heating, Cooling and Ventilation, Appliances</li> <li>• <b>Cogeneration and Waste Heat Recovery</b> at 100% of potential achieved by 2050</li> </ul>	Carve-out: 50% by 2030, 100% by 2050 Subsidy: 100% by 2023 Rebates: 100% by 2023	Distributed Solar policies approximate for Actions 2.1, 2.5, 2.6. Retrofits and rebates are for Action 2.5.	
(3) Monitor, inventory, certify, and support industrial decarbonization	<i>None – enabling actions for Strategy 4 and Strategy 5</i>			Note: Action 3.4 was strengthened to include the Net Zero Industry Standard, allowing for the changes made in the Industrial Decarbonization section.



Draft Strategy	EPS Policies (Changes Highlighted)	Schedule and Intensity (Changes Highlighted)	Original Rationale	Updates Made
(4) Improve efficiencies and modernization of industrial processes	<ul style="list-style-type: none"> <li>• <a href="#">Improved System Design</a> at 100%</li> <li>• <a href="#">Industry Energy Efficiency Standards</a> (see intensity to the right)</li> </ul>	Standards set at <b>14%</b> for all fuels for the following industries: Oil and Gas Extraction, Refined Petroleum and Coke, Chemicals, Other Manufacturing, and Energy Pipelines and Gas Processing – 50% by 2030, 100% by 2050	In absence of target specified in actions, used same efficiency target as was set in the US NDC scenario	
(5) Accelerate industrial electrification and fuel switching	<ul style="list-style-type: none"> <li>• <a href="#">Carbon Capture and Sequestration</a>: 50% for Chemicals Process Emissions, Cement Process Emissions, and Iron and Steel Process Emissions; <b>20% for Energy-related Emissions in Refined Petroleum and Coke, Chemicals (100% by 2050 beginning in 2024)</b></li> <li>• <a href="#">Industrial Electrification and Hydrogen</a> (see intensity to the right)</li> <li>• <a href="#">Direct Air Capture R&amp;D</a> at 100% (no impacts by 2050)</li> <li>• <a href="#">Shift Hydrogen Production to Electrolysis at 100% by 2050</a></li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture and Forestry Shift to Electricity: 90%</li> <li>• Coal Mining Shift to Electricity: 92%</li> <li>• Coal Mining Shift to Hydrogen: <b>3%</b></li> <li>• Oil and Gas Extraction Shift to Electricity: 92%</li> <li>• Oil and Gas Extraction Shift to Hydrogen: <b>3%</b></li> <li>• Other Mining and Quarrying Shift to Electricity: 92%</li> <li>• Other Mining and Quarrying Shift to Hydrogen: <b>3%</b></li> <li>• Food Beverage and Tobacco Shift to Electricity: 88%</li> <li>• Food Beverage and Tobacco Shift to Hydrogen: <b>3%</b></li> <li>• Textiles Apparel and Leather Shift to Electricity: 92%</li> <li>• Textiles Apparel and Leather Shift to Hydrogen: <b>3%</b></li> <li>• Wood Products Shift to Electricity: 92%</li> <li>• Wood Products Shift to Hydrogen: <b>3%</b></li> <li>• Pulp Paper and Printing Shift to Electricity: 97%</li> <li>• Pulp Paper and Printing Shift to Hydrogen: 3%</li> <li>• Refined Petroleum and Coke Shift to Electricity: 48%</li> <li>• Refined Petroleum and Coke Shift to Hydrogen: <b>50%</b></li> <li>• Chemicals Shift to Electricity: 47%</li> <li>• Chemicals Shift to Hydrogen: 53%</li> </ul>	Used fuel switching targets from the US NDC scenario	The CCS amounts were adjusted to reflect aggressive implementation of the Net Zero Industry Standard (Action 3.4). Hydrogen fuel-shifting percentages were reduced overall; most industries are set at 3% except for Petroleum, Cement, and Iron, all at 50%, and Chemicals, which remained at 53%. This approximates a reasonable allocation of hydrogen based on Louisiana’s industry profile. The hydrogen electrolysis target was added to



Draft Strategy	EPS Policies (Changes Highlighted)	Schedule and Intensity (Changes Highlighted)	Original Rationale	Updates Made
		<ul style="list-style-type: none"> <li>• Rubber and Plastic Products Shift to Electricity: 47%</li> <li>• Rubber and Plastic Products Shift to Hydrogen: 3%</li> <li>• Glass and Glass Products Shift to Electricity: 92%</li> <li>• Glass and Glass Products Shift to Hydrogen: 3%</li> <li>• Cement and Other Nonmetallic Minerals Shift to Electricity: 22%</li> <li>• Cement and Other Nonmetallic Minerals Shift to Hydrogen: 50%</li> <li>• Iron and Steel Shift to Electricity: 29%</li> <li>• Iron and Steel Shift to Hydrogen: 50%</li> <li>• Other Metals Shift to Electricity: 44%</li> <li>• Other Metals Shift to Hydrogen: 3%</li> <li>• Metal Products Except Machinery and Vehicles Shift to Electricity: 92%</li> <li>• Metal Products Except Machinery and Vehicles Shift to Hydrogen: 3%</li> <li>• Computers and Electronics Shift to Electricity: 92%</li> <li>• Computers and Electronics Shift to Hydrogen: 3%</li> <li>• Appliances and Electrical Equipment Shift to Electricity: 92%</li> <li>• Appliances and Electrical Equipment Shift to Hydrogen: 3%</li> <li>• Other Machinery Shift to Electricity: 92%</li> <li>• Other Machinery Shift to Hydrogen: 3%</li> <li>• Road Vehicles Shift to Electricity: 94%</li> <li>• Road Vehicles Shift to Hydrogen: 3%</li> <li>• Nonroad Vehicles Shift to Electricity: 94%</li> <li>• Nonroad Vehicles Shift to Hydrogen: 3%</li> <li>• Other Manufacturing Shift to Electricity: 92%</li> <li>• Other Manufacturing Shift to Hydrogen: 3%</li> </ul>		<p>Action 5.2 and is added here as well, allowing for the abating of hydrogen production emissions in this modeling scenario. Using the federal definition of low-carbon hydrogen, the amount of emissions reduced in the model could vary by up to 10 MMTCO<sub>2</sub>E.</p>



Draft Strategy	EPS Policies (Changes Highlighted)	Schedule and Intensity (Changes Highlighted)	Original Rationale	Updates Made
(6) Promote reduced-carbon materials	<ul style="list-style-type: none"> <li>• <a href="#">Cement Clinker Substitution</a> at 100%</li> <li>• <a href="#">Material Efficiency, Longevity, and Re-Use</a>: 30% reduction in demand by 2030 for cement, iron and steel, and water and waste</li> <li>• <a href="#">Building Energy Efficiency Standards</a>: 30% reduction in energy use in commercial buildings by 2030</li> <li>• <a href="#">Improved Labeling</a>: On</li> </ul>	<ul style="list-style-type: none"> <li>• Energy Pipelines and Gas Processing Shift to Electricity: 90%</li> <li>• Construction Shift to Electricity: 90%</li> </ul>	Commercial buildings were used as a substitute for public buildings, as EPS doesn't have a setting for public buildings	
(7) Increase the reliability and resilience of tomorrow's energy infrastructure	<ul style="list-style-type: none"> <li>• <a href="#">Offshore Wind Subsidy</a> at \$20/MWh starting in 2023</li> <li>• <a href="#">Grid-Scale Energy Storage</a> at 8% by 2026</li> <li>• <a href="#">Increase Transmission</a> at 30% by 2030 and 100% by 2050</li> </ul>	<ul style="list-style-type: none"> <li>• EPS uses the <a href="#">NREL Renewable Futures</a> study to set the max amount for grid storage potential; the action specifies 1000 MW in five years, so I calculated the user amount (8%) based on the target divided by the policy max.</li> </ul>	The subsidy is a substitute for other "enabling" policies for offshore wind outlined in Action 7.4	Transmission goals were increased in what is now Action 1.6.
(8) Advance equitable siting and permitting processes for new energy and infrastructure projects	<i>None – enabling actions for other strategies</i>			
(9) Increase resources for decommissioning legacy oil and gas infrastructure	<i>See Strategy 10 – options for methane are limited</i>			
(10) Monitor and regulate methane emissions	<ul style="list-style-type: none"> <li>• <a href="#">Methane Capture</a> at 100%</li> <li>• <a href="#">Methane Destruction</a> at 100%</li> </ul>	<ul style="list-style-type: none"> <li>• 100% of potential by 2050 for Oil and Gas Extraction, Energy Pipelines and Gas Processing, Coal Mining, and Water and Waste sectors. EPS has built-in limits as to the emissions these policies can reduce.</li> </ul>	Neither of these policies is a great match for either (9) or (10).	



Draft Strategy	EPS Policies (Changes Highlighted)	Schedule and Intensity (Changes Highlighted)	Original Rationale	Updates Made
(11) Reduce VMT and increase transportation efficiencies	<ul style="list-style-type: none"> <li>• <a href="#">Mode Shifting</a></li> <li>• <a href="#">Fuel Economy Standards</a></li> </ul>	<ul style="list-style-type: none"> <li>• Mode shifting set at policy max in EPS</li> <li>• Fuel economy standards for freight set according to EPS max guidance (88% for LDVs and 56% for HDVs)</li> <li>• Fuel economy standards for freight rail and freight shipping set at 10%</li> </ul>	Rail and shipping fuel economy standards set as a substitute for the freight related Actions in (11) and (12)	
(12) Accelerate adoption of clean fuels	<ul style="list-style-type: none"> <li>• <a href="#">Electric Vehicle Charger Deployment</a></li> <li>• <a href="#">Electric Vehicle Range and Charging Time</a> (100% “reduction in concern” by 2050)</li> <li>• <a href="#">Electric Vehicle Sales Standard</a></li> <li>• <a href="#">Electric Vehicle Subsidy</a></li> <li>• <a href="#">Low Carbon Fuel Standard</a></li> </ul>	<ul style="list-style-type: none"> <li>• Charger Deployment at 250 per 100K of population by 2050</li> <li>• EV sales standard set to 20% of passenger LDVs, freight LDVs, freight HDVs by 2050</li> <li>• Subsidy for passenger LDVs at 10% starting in 2023</li> <li>• Low Carbon Fuel Standard at 5% reduction by 2030</li> </ul>	Charger deployment approximates gas pump distribution. EV sales standard less aggressive than projected federal standards. Subsidy tries to address Action 12.2 on lowering socioeconomic barriers to EVs.	
(13) Increase public transit service	<i>None – mode shifting maxed out in Strategy 11</i>			
(14) Coordinate land use planning to reduce sprawl	<i>None – enabling actions for Vehicle Miles Traveled reductions</i>			
(15) Improve the efficiency of homes and buildings	<ul style="list-style-type: none"> <li>• <a href="#">Retrofit Existing Buildings</a> (urban and rural residential) at 5% per year</li> <li>• <a href="#">Building Energy Efficiency Standards</a> at 35% reduction by 2030 for all</li> <li>• <a href="#">Building Component Electrification</a> at 50% by 2050 for all</li> </ul>	<ul style="list-style-type: none"> <li>• Retrofits also addressed in Action 2.5</li> <li>• Rebate also addressed in Action 2.5</li> <li>• Building Energy Efficiency Standards were first addressed in Action 6.1 as part of the Buy Clean policy for public projects (used commercial settings) – expanded here to cover all buildings based on these actions</li> </ul>	Multi-attributed policies across strategies increases likelihood of achieving modeled result.	



Draft Strategy	EPS Policies (Changes Highlighted)	Schedule and Intensity (Changes Highlighted)	Original Rationale	Updates Made
(16-18) Natural and working lands and wetlands	<ul style="list-style-type: none"> <li>• <a href="#">Rebate for Efficient Products</a> on starting in 2023</li> <li>• <a href="#">Afforestation and Reforestation</a></li> <li>• <a href="#">Forest Set-Asides</a></li> <li>• <a href="#">Cropland Management</a></li> <li>• <a href="#">Rice Cultivation Measures</a></li> <li>• <a href="#">Improved Forest Management</a></li> </ul>	<ul style="list-style-type: none"> <li>• All set to 100% by 2050</li> </ul>	EPS not strong at modeling land policies; difficult to link to Task Force actions.	
(19-21) Inclusive, low-carbon economy	<i>None – enabling actions for full portfolio</i>			
(22-29) Collaboration and partnerships	<i>None – enabling actions for full portfolio</i>			





The final modeling graphic, provided in the Louisiana Climate Action Plan (Figure 16, p. 33; Climate Initiatives Task Force, 2022), is reproduced below (Figure 23). The components of Figure 23 were derived from modeling outputs created using the settings detailed in Table 4. The legend categories of Figure 23 are provided in Table 4 in the order they appear in the legend (read from top to bottom).

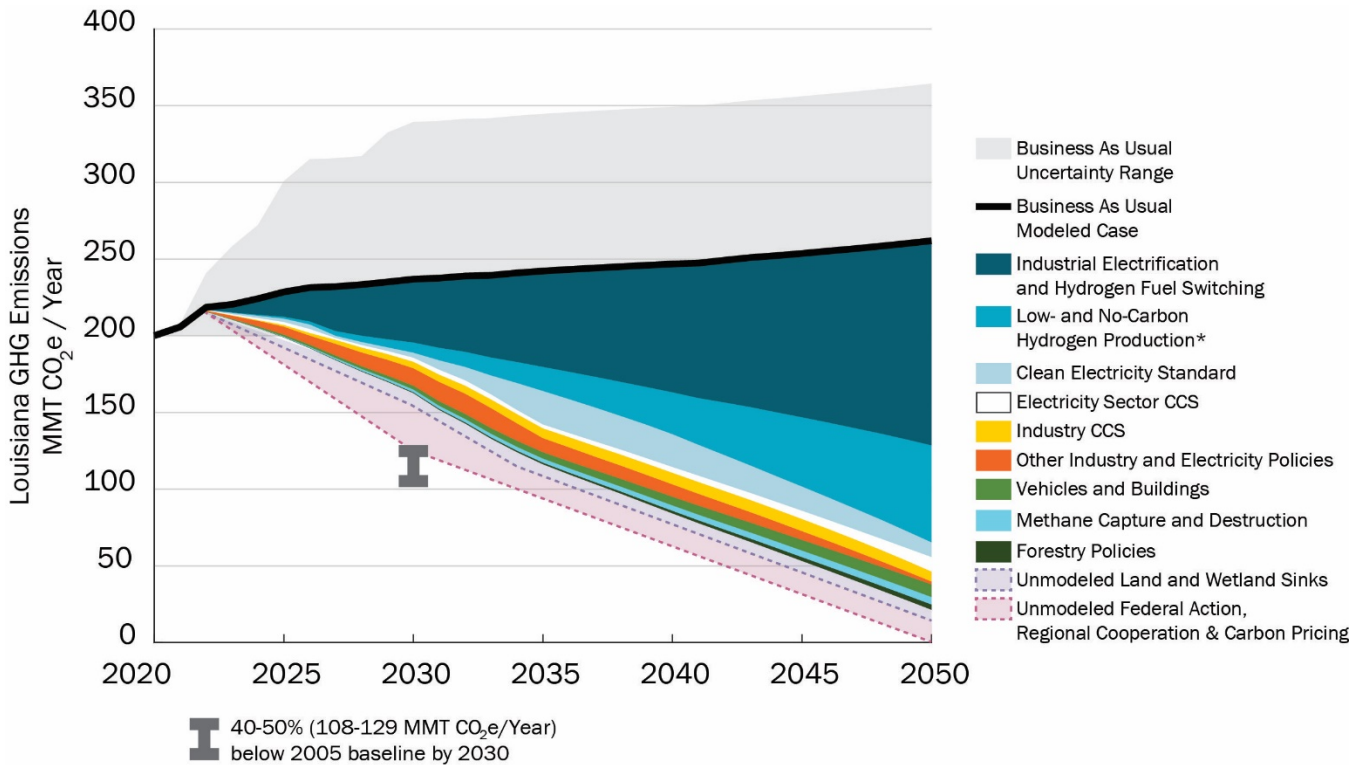


Figure 23. Louisiana's Modeled Pathway to Net Zero by 2050. Figure reproduced from Figure 16 in the Louisiana Climate Action Plan (Climate Initiatives Task Force, 2022a).



Table 4. Figure 23 Legend Detail. EPS policies and other GHG emissions components used to develop the model output that Figure 23 was developed from. The order of rows corresponds to the order of the Figure 23 legend, read from top to bottom.

Legend Item	Components
Business As Usual Uncertainty Range	The uncertainty range is derived from a dataset detailing permitted and announced, but not yet built, industrial facilities and expansions. The estimated emissions from these permits are not certain enough to include in the BAU case, but are shown here to show how Louisiana’s emissions could increase without climate action.
Business As Usual Modeled Case	This line is the modeled BAU case from the EPS tool.
Industrial Electrification and Fuel Switching	This is a direct EPS output from the Industrial Electrification and Hydrogen policy.
Low- and No-Carbon Hydrogen Production	This is a direct EPS output from the Shift Hydrogen Production to Electrolysis policy. This policy only measures ‘green hydrogen’ and does not include low-carbon or ‘blue hydrogen.’ Using the Infrastructure and Jobs Act definition of low-carbon hydrogen (less than 2kg of CO2 per kg of H produced), this amount could vary by up to 10.7 MMTCO2E.
Clean Electricity Standard	This is a direct EPS output from the Clean Electricity Standard policy.
Electricity Sector CCS	This is a direct EPS output from the Electricity Sector CCS policy.
Industry CCS	This is a direct EPS output from the Industry CCS policy.
Other Industry and Electricity Policies	This is a combination of the remaining Industry and Electricity sector policies from EPS, including Distributed Solar Promotion, Early Retirement of Power Plants, Subsidy for Electricity Production, Cogeneration and Waste Heat Recovery, Industry Energy Efficiency Standards, Improved System Design, and Material Efficiency Longevity and Reuse.
Buildings and Vehicles	This is a combination of EPS outputs from the following policies: EV Charger Deployment, EV Subsidy, Vehicle Fuel Economy Standards, Low Carbon Fuel Standard, Mode Shifting, Building Component Electrification, and Building Energy Efficiency Standards.
Methane Capture and Destruction	This is two policies from EPS, Methane Capture and Methane Destruction.
Forestry Policies	This is two policies from EPS, Afforestation and Reforestation and Improved Forest Management.
Unmodeled Land and Wetland Sinks	This is an estimate of additional emissions reductions potential from land and wetland sinks in Louisiana. The land use, agriculture, and forestry policies are not a strong match for Louisiana’s land sinks potential. Additional research is underway into calculating the wetland carbon sequestration potential of Louisiana’s coastal habitats.
Unmodeled Federal Action, Regional Cooperation, & Carbon Pricing	This is an estimate of additional emissions reductions potential from sources outside the modeling capability of EPS or with sufficient uncertainty in state-level policy design. This could include policies that are most commonly set through federal agency rulemaking, such as vehicle emissions standards, or policies that require multi-state cooperation, such as carbon pricing. This could also include climate action that may be put forth by Congress, either from the Infrastructure and Jobs Act or additional bills that may be negotiated in the future.



## APPENDIX B: DRAFT PORTFOLIO OF CLIMATE STRATEGIES AND ACTIONS

### CLEAN ENERGY TRANSITION

#### STRATEGY 1. Shift towards a clean, renewable, and resilient power grid

*ACTION 1.1 Adopt a Renewable and Clean Portfolio Standard and create a statewide market for Renewable Energy Certificates*

A Renewable and Clean Portfolio Standard is a law or regulation that would require electricity used in Louisiana to be generated from an increasing percentage of renewable (naturally replenishing with no GHG emissions; e.g., solar, wind, and geothermal) or clean (generation emits little to no GHGs; e.g., nuclear, biowaste and natural gas with carbon capture) sources. Power generation facilities reliant on carbon capture technology must capture at least 95% of facility emissions to qualify as clean energy. A Renewable and Clean Portfolio Standard would require that by 2035, 50% of electricity generation is to be generated from renewable resources and 30% from clean resources, and by 2050, 100% of electricity would need to be generated from renewable or clean resources, with at least 80% from renewable resources. To support a Renewable and Clean Portfolio Standard, Renewable Energy Certificates play an important role in accounting, tracking, and assigning ownership to renewable electricity generation and use. Renewable Energy Certificates are market-based instruments that represent the property rights to the environmental, social, and other non-power attributes of renewable electricity generation. This action proposes engagement of the Louisiana Public Service Commission (LPSC), Louisiana Legislature, utilities, and stakeholders to develop a Renewable and Clean Portfolio Standard and a statewide market for Renewable Energy Certificates. *(Associated Submitted Action Proposals: 56, 172, 145, 152)*

*ACTION 1.2 Improve electric generation resource planning and procurement to streamline the retirement and replacement of energy resources*

Utilities plan for future electric generation needs through integrated resource plans, or IRP's. IRP's identify future needs and different types of resources a utility can use to reliably serve Louisianans. Over the next decade, Louisiana's electric utilities will be undergoing a rapid transition from predominantly fossil fuel generation to renewable resources coupled with battery storage and new natural gas generation facilities necessary to ensure grid reliability. Where appropriate, the electric utility industry will move away from constructing large base load power stations towards smaller, more distributed generation facilities strategically located to enhance grid reliability and achieve emissions reductions. This action proposes working with the LPSC to evolve the IRP and regulatory process to accommodate the dynamic nature of the transition and to expedite renewable energy procurement in a way that will improve competition, reduce ratepayer costs, and improve Louisiana's air quality. Specific recommendations include: changing the IRP frequency to an annual process, amending existing Market Based Mechanism to require all-source competitive solicitation and loading order rules, considering a limited exemption from the 1983 certification order for new generation projects up to 50 MWs that are replacing existing capacity with zero emissions generation, considering exempting electric utilities from the LPSC Market Based Mechanism Order requirements for additions of replacement capacity of 100 MW or less with zero emission generation, and accounting for climate projections and impacts in resource planning. *(Associated Submitted Action Proposals: 114, 116, 117)*



### *ACTION 1.3 Accelerate the decommissioning of coal and older natural gas-fired power generation*

As utilities in Louisiana look to transition their generation portfolio toward more zero-carbon generation resources, they are analyzing the benefits to customers that could be realized from deactivating legacy generation resources sooner than had historically been planned. Deactivation of coal and older natural gas fired generation will eliminate the GHG emissions provided by those facilities and lead to an overall reduction in GHG emissions when those generation sources are replaced by renewable or more efficient generation resources. Transitioning away from older inefficient fossil fuel generation will also reduce other criteria pollutants and hazardous air pollutants. The deactivation and retirement of older generation resources, particularly on an accelerated basis, typically has impacts on customer rates; this impact can vary depending on the specific circumstances involving the generation resource as well as the level of investment that was required to maintain operation of the resource to provide reliable service to customers. This action would encourage utilities to continue to work with the utilities' stakeholders, customers, and local communities to analyze the costs and benefits of these early deactivations while working with the LPSC to provide the appropriate framework to address the necessary rate effects of such deactivations.

*(Associated Submitted Action Proposals: 112)*

### *ACTION 1.4 Reduce energy usage by adopting an Energy Efficiency Resource Standard*

Improving energy efficiency for all users lowers GHG emissions and brings down the overall need for electricity generation, which decreases the need for investments in new generation and can make the transition to clean energy easier. Reducing energy usage also lowers electricity bills while decreasing other air pollutants associated with electricity production. This action proposes the engagement of the LPSC, Louisiana Legislature, utilities, and stakeholders to implement an Energy Efficiency Resource Standard directing all electric and gas utilities subject to their jurisdiction to reduce energy sales based on 2019 levels by 0.2% annually until savings achieve an overall reduction of 2% annually. Efficiency programs to support meeting this standard would be available to all customer types and include programs specifically targeted to low-income and renter residents. *(Associated Submitted Action Proposals: 16, 119, 162)*

### *ACTION 1.5 Publish "climate rankings" for electric utilities to increase public awareness, transparency, and accountability*

Customers of electric utilities should have easy, understandable access to information about where and how their electricity is produced and how that power mix changes over time. This action proposes engaging with the LPSC and utilities to develop a climate scorecard and real time dashboard for electric utilities that synthesizes data on the diversity of a utility's generation portfolio, including load, energy mix, and renewables forecasting, as well as carbon dioxide (CO<sub>2</sub>) and other emissions. Scorecard information would compare utility data and trends to other utilities around the state and the nation. *(Associated Submitted Action Proposals: 108, 115)*

## **STRATEGY 2. Increase renewable electricity generation and access for all users**

### *ACTION 2.1 Authorize tax incentives for residential, commercial, and community-based renewable energy installation and storage*

Financial incentives for renewable energy installation and storage at household and commercial scales, particularly solar (electricity and water heating), are important for ensuring equitable access to renewable energy across Louisiana. Similar tax incentives created by the Louisiana Department of Revenue have been employed in the past and this action would reinstate an updated program to provide a tax rebate (e.g., 30% or number of kW installed) based on the cost of installation with a cap per household/project and an annual budget limit for the state. This action would



also explore tax incentives or credits to promote and support community-owned solar installations. Community solar refers to local solar facilities shared by multiple community subscribers who receive credit on their electricity bills for their share of the power produced. The primary purpose of community solar is to allow members of a community the opportunity to share the benefits of solar power even if they cannot or prefer not to install solar panels on their property. If this action is implemented, it will be important to ensure that this program is accessible for low/moderate income homeowners through mechanisms such as “carve-outs”, availability for community solar and other non-ownership models, pairing with other incentives, targeted messaging, and outreach. *(Associated Submitted Action Proposals: 113, 147, 126)*

#### *ACTION 2.2 Enable on-bill financing for customers to pay for investments in clean energy, infrastructure, and efficiency upgrades through their utility bill*

On-bill financing models allow utilities to incur the upfront costs for customers who upgrade to renewable/clean energy production (e.g., solar) and add additional facilities, electrification measures, demand response devices, and energy efficiency upgrades. Under this model, customers pay for these investments over time through monthly charges on their utility bill. This action proposes working with the LPSC and utilities to enable, design, and implement an on-bill financing program for Louisiana customers that is accessible, cost-effective, and inclusive of consumer protections. *(Associated Submitted Action Proposals: 79, 175)*

#### *ACTION 2.3 Establish utility green tariffs*

Green tariffs are optional programs offered by utilities that allow customers to purchase renewable or clean power from specific projects through a special utility tariff rate (fee structure). Opting to pay a green tariff for renewable/clean energy helps customers meet sustainability targets and helps promote the development of additional renewable energy generation projects sooner. This action would include working with the LPSC to establish tariff offerings for renewable and/or clean power for residential, commercial, and industrial customers through a Utility Green Tariff program. *(Associated Submitted Action Proposals: 111, 118, 175)*

#### *ACTION 2.4 Enable and promote the use of renewable Power Purchase Agreements (PPAs)*

Power Purchase Agreements (PPAs) are long-term contracts between energy customers and renewable energy developers that allow purchase of renewable energy at certain volumes and prices. Renewable energy developers design, permit, finance, install, operate, maintain, and own a renewable energy project. Basic co-benefits of PPAs are two-fold: 1) customers that enter PPAs can avoid the up-front capital costs of installing a renewable energy system while still increasing access to renewable power; and 2) developers get revenue certainty that helps to finance the renewable energy project. Physical PPAs require renewable energy developers and customers to be located within the same electricity market and provide for the physical transfer of electricity from the generator to the customer. Virtual PPAs are purely financial arrangements where customers do not receive electricity directly from the renewable project but do receive Renewable Energy Credits, and this does not require the renewable energy project and the customer to be in the same electricity market. This action proposes working with the LPSC to allow for physical PPAs and virtual PPAs as part of its Utility Green Tariff program (see Action 2.3). *(Associated Submitted Action Proposals: 11, 47, 144)*

#### *ACTION 2.5 Redesign and expand property-assessed clean energy (PACE) financing*

This action provides a voluntary avenue for home and business owners to finance energy efficiency and renewable energy projects for their property through property-assessed clean energy (PACE). The types of projects typically included under PACE include energy efficiency improvements (e.g., insulation, weather sealing, high-efficiency



water heaters) as well as solar and other on-site renewable energy systems. This program covers the up-front cost of qualified energy improvements with financing from a local government and then spreads the repayments over a longer period such that the costs of these energy improvements would be distributed over the lifetime of the project. This action proposes working with the Louisiana Legislature and local governments to redesign, enable, and expand PACE in Louisiana. This includes education and outreach to developers, realtors, mortgage lenders, title companies, appraisers, and homeowners as well as streamlining and consistency of practices among actors. (*Associated Submitted Action Proposals: 146*)

#### *ACTION 2.6 Reinstate full retail credit net metering for solar energy system owners and virtual net metering for community solar participants*

Many on-site (e.g., rooftop) solar energy system owners produce more electricity than they consume. Net metering is a billing mechanism that provides these customers with credit for the energy they add to the grid, and customers are then only billed for their “net” energy use. Virtual net metering applies similarly to the electricity bills of subscribers of community solar projects. When a solar system is built at a school, grocery store, or other consolidated site in a community, residents can choose to share that solar system through partial ownership or “subscription.” Net metering helps financially justify the cost of solar system installation thereby increasing demand for solar energy and creating jobs for those in the solar industry. The increased use of distributed solar energy also helps smooth the demand curve for electricity allowing utilities to better manage their peak electricity loads. This action includes working with the LPSC to reinstate full retail credit net metering for solar energy system owners and establish full retail credit virtual net metering for community solar, with special attention paid to underserved and overburdened communities. (*Associated Submitted Action Proposals: 57, 126, 164*)

#### *ACTION 2.7 Establish an Emission Reduction Generation and Supply (ERGS) program*

Reduction of uncontrolled combustion flaring from the industrial sector and conversion of energy otherwise wasted into electricity or heat via Combined Heat and Power (CHP) could provide a source of energy for other uses. Allowing excess co-generated power from industry to be purchased by public utilities while building capacity for CHP at multiple scales can help maximize efficiency of energy production. This action would request the LPSC establish an Emission Reduction Generation and Supply (ERGS) program that would authorize industry or other third parties to generate, share and/or transfer power from emission-reducing sources (e.g., CHP, battery storage, on-site renewable energy generation, waste-heat generation) through privately-owned transmission infrastructure without classifying the energy resource owner as a regulated electric public utility. This action would incentivize industrial customers to build larger-scale reduced-emissions energy resources by allowing them to share the electricity produced. (*Associated Submitted Action Proposals: 43, 52, 89, 124, 160*)

## **INDUSTRIAL DECARBONIZATION**

### **STRATEGY 3. Monitor, inventory, certify, and support industrial decarbonization**

#### *ACTION 3.1 Require self-reporting carbon intensity audits for industrial facilities to develop a state carbon intensity database*

To accurately monitor the impact of actions in this Climate Action Plan on GHG emissions from the industrial sector, Louisiana first needs to establish a baseline of current emissions on a facility-by-facility basis. This action proposes mandatory, self-reported energy and carbon-intensity audits from all industrial facilities and would provide a mechanism (e.g., a carbon intensity database) in which state-wide data can be stored and made publicly available. A



carbon intensity database would build upon existing publicly available datasets generated by the U.S. Environmental Protection Agency (EPA) Greenhouse Gas Reporting Program, Title V Clean Air Act Permit Information, and others. Under this action, the Louisiana Department of Environmental Quality (DEQ) would compile and calibrate existing data, ensure all facilities submit reports, update the database annually, and partner with the Louisiana State University Industrial Assessment Center (LSU-IAC), University of Louisiana's Energy Institute of Louisiana, and Louisiana Department of Natural Resources (DNR) to complete assessments for energy reduction. The Governor's Office, state agencies, federal partners, industry, utilities, and environmental stakeholders would be able to use this database to ensure continual progress is made towards emission reduction. *(Associated Submitted Action Proposals: 51, 108, 140)*

### *ACTION 3.2 Develop an Industry Certification Program for GHG emission reduction activities*

Louisiana's emission profile is comprised of various industries each with unique operations and needs, therefore approaches to GHG emission reduction must be flexible to accommodate varying industries. This action would establish a voluntary Industry Certification Program for industries to propose and implement site-specific GHG emission reduction plans to meet emission reduction goals. Site-specific plans would then be approved by the certifying agency with annual certification required to monitor real reduction in GHG emissions and maintain benefits of program participation. This action proposes that DEQ would be the certifying agency and would develop criteria and actions for program participation and certification in partnership with the public. DEQ would monitor and certify GHG emissions reductions rather than specific actions. A participation fee to participate in the Industry Certification Program would cover costs to increase staff capacity, allowing the program to become self-funding and income-generating. Similar programs have been successfully implemented in California and Texas alongside the EPA Natural Gas STAR Program. *(Associated Submitted Action Proposals: 62)*

### *ACTION 3.3 Develop a statewide comprehensive framework to reduce industrial GHG emissions*

This action proposes DEQ and DNR jointly develop a statewide framework to achieve and enforce industrial emissions reductions, prevent waste from new and existing sources, and attract clean energy industry to the state. The framework should incorporate actions expressed in Louisiana's Climate Action Plan and strategic engagement with other state agencies, federal partners, industry, and environmental advocates to ensure a comprehensive approach is developed, implemented, and provides a tool for accountability. *(Associated Submitted Action Proposals: N/A)*

### *ACTION 3.4 Increase capacity for Industrial Assessment Centers (IACs)*

The U.S. Department of Energy (DOE) financially supports IACs across the nation, with a local program at LSU. The LSU-IAC is a team of university-based faculty and students that provide no-cost assessments to small and medium sized U.S. manufacturers to identify potential cost savings from energy efficiency improvements, waste minimization and pollution prevention, and productivity improvement. This action proposes the state work with the U.S. DOE to increase funding for the LSU-IAC so that it can provide extensive no-cost assessments and ad-hoc advice to industry, the DNR State Energy Office, and the Governor's Office in implementing actions of Louisiana's Climate Action Plan and the DEQ-DNR statewide regulatory framework. IACs would partner with the DNR State Energy Office to convene stakeholder groups of small and mid-sized industry to develop strategies for meeting actions of the "Industrial Decarbonization" section of this Climate Action Plan. *(Associated Submitted Action Proposals: N/A)*



*ACTION 3.5 Initiate a regional cap-and-trade program for GHG emissions and direct proceeds toward the advancement of strategies in the Louisiana Climate Action Plan*

Cap-and-trade programs establish a declining limit on major sources of GHG emissions (a mandated “cap”) and create a powerful economic incentive for investment in cleaner, more efficient technologies. Under these programs, emissions allowances are purchased and sold by emitting entities (creating a market to “trade” allowances). This action proposes the Louisiana Legislature authorize DEQ to work with peer agencies in Texas, Oklahoma, Arkansas, Mississippi, Alabama, and Florida to establish a regional cap-and-trade program for GHG emissions from electric and gas utilities, industry, and other large GHG emitters. Proceeds from the sales of emissions allowances would be used to support incentive programs for the equitable expansion of renewable energy deployment, electric vehicle adoption, weatherization and energy efficiency programs, workforce transition, climate change adaptation, and other goals established by the Louisiana Climate Action Plan. (*Associated Submitted Action Proposals: 8, 48, 53, 173*)

**STRATEGY 4. Improve efficiencies in and modernization of industrial processes and facilities**

*ACTION 4.1 Set Industry Efficiency Standards*

Efficiency is the foundation of industrial decarbonization, which not only can reduce GHG emissions immediately but can also lower energy cost, mitigate risk, increase competitiveness, and make electrification more feasible. Near-term modifications to procedures and behaviors can be achieved while incurring little expense and prioritizing investments in modernized technologies. To meet Louisiana’s energy efficiency target, this action proposes that the state both incentivizes and requires increased efficiencies through Industry Efficiency Standards (e.g., BTU per unit output) or pollution standards (e.g., CO<sub>2</sub> per unit output) established by DNR and DEQ. Standards would be minimum allowable criteria for existing and new facilities based on specified metrics, such as equipment, fuels, or per-unit-of-production basis. (*Associated Submitted Action Proposals: N/A, EI citation*)

*ACTION 4.2 Develop and implement a Strategic Energy Management Program*

Strategic Energy Management (SEM) approaches efficiency through direct engagement with manufacturers to identify sources of significant energy use, implement efficiency measures, and track progress toward implementing energy efficiency standards. This action proposes the establishment of an SEM Program in Louisiana’s DNR Energy Office that would ensure continual energy improvement is integrated into the culture of facility management. The SEM Program Manager, partnering closely with IACs and universities, may fund pilot projects that deploy efficient technology and assist manufacturers in meeting Industry Efficiency Standards. Through an SEM Program, DNR and DEQ would also develop a strategic engagement plan to partner with major and minor energy users as an opportunity to discuss and work through concerns, limitations, and feasibility of various methods to improve efficiencies. Working alongside manufacturers and IACs and universities, an SEM program may conduct studies on carbon intensity, life cycle accounting, competitiveness, resilience, and the impacts of energy-intensive industry for various processes to guide decisions, track progress, and set further standards. (*Associated Submitted Action Proposals: n/a (citation 1, citation 2)*)





## **STRATEGY 5. Accelerate industrial electrification, switching to low- or no- carbon fuels and low- or no-carbon feedstocks**

### *ACTION 5.1 Invest in infrastructure to support industrial-scale electrification*

Electrification has the potential to cut industrial emissions in half as numerous industrial technologies and processes that rely on compressed air, steam, and heat can be electrified today. Electrification hinges on the ability of utilities and other power providers to generate adequate amounts of affordable, clean energy to provide to industries (Steinberg, ACEEE). This action proposes the DNR Energy Office partner with utilities, the LPSC, and industry to incentivize transmission buildout, grid updates, and planning for electrification to increase access to clean energy around clusters of industrial facilities in Louisiana. This buildout would allow industry and customers to contract renewable power competitively, identify and purchase renewable energy, and allow new industry to contract with utilities for renewable energy. *(Associated Submitted Action Proposals: 29, 71, 73, 139)*

### *ACTION 5.2 Demonstrate electrification of industrial processes and equipment through pilot projects*

Replacing combustion-fueled technologies with electrification within an industrial facility directly reduces carbon emissions. If the source of the electricity (e.g., from the power grid) is from renewable energy sources or from a less carbon-intensive process than was originally used at the facility, the result is reduced GHG emissions. Technology currently exists to electrify many types of systems and processes within industrial facilities, but the economic and practical feasibility of this technology has not been widely demonstrated. This action would include the development of pilot projects to electrify systems within Louisiana industrial facilities (e.g., building systems and motors) to explore economic feasibility and demonstrate the potential for more widespread implementation. *(Associated Submitted Action Proposals: N/A)*

### *ACTION 5.3 Enact incentives that enable and encourage accelerated electrification*

Electrification has extensive potential to reduce GHG emissions of the industrial sector. For example, electrification in manufacturing can increase efficiency by reducing thermal and material waste and can improve overall product quality. However, given the low cost of alternative fuel sources (e.g., natural gas), electrification is unlikely to be driven by economics alone. This action proposes the DNR Energy Office partner with industry and utilities to determine roadblocks for electrification and work with other state partners to develop effective incentives to encourage a clean energy transition for industrial users. The incentives would be based on criteria that prioritize communities most closely impacted by industry and where explicit pollution reduction co-benefits have been identified. Applicants seeking to take advantage of these incentives would be required to reapply through DNR each year to ensure compliance with established criteria. *(Associated Submitted Action Proposals: 29, 63)*

### *ACTION 5.4 Promote low-carbon alternatives for high-temperature industrial processes*

Industrial feedstocks (unprocessed materials used to supply a manufacturing process) have traditionally been petroleum, natural gas, and their derivatives. Natural gas is also widely combusted in Louisiana to achieve high temperatures for chemical manufacturing and petroleum refining. Low-carbon substitutes can replace energy-dense fuels that manufacturers currently rely on to achieve the high temperatures needed in many industrial processes, especially for refining and chemicals manufacturing. Electric furnaces for temperatures above 350°C are in development but not yet technologically mature for industrial use. Therefore, fuel switching from natural gas and other fossil fuels to low-carbon or renewable fuels (e.g., renewable natural gas, hydrogen, and biofuels) is the most necessary and next less carbon-intensive option. This action proposes tasking the DNR Energy Office and the IACs to explore which less-intensive carbon fuels could be used as alternatives in different processes and then incentivizing industry to



switch fuel sources to lower-carbon options. As a result, IAC assessments and the proposed DEQ Certification Program would recommend and incentivize low-carbon fuels for industrial heat processes that cannot currently be electrified. (*Associated Submitted Action Proposals: 12, 107, 125, [citation](#)*)

*ACTION 5.5 Invest in research, technology, and infrastructure to produce renewables-powered bulk chemicals*

Louisiana is one of the largest producers of bulk chemicals, like ammonia, in the country, and chemical manufacturing accounts for over half of Louisiana's industrial GHG emissions. The bulk chemicals are often intermediate products used to create end products like plastic containers or fertilizer. To reduce emissions from this industry, this action proposes that the state support investments in next generation low or no carbon bulk chemicals, created from renewables-powered electrochemistry (e.g. ammonia produced from green hydrogen) captured CO<sub>2</sub>, or biogas. This action also proposes studies of whether additional infrastructure as well as studies of potential climate and air quality impacts from further development of green and non-green bulk chemicals. (*Associated Submitted Action Proposals: 6, 51*)

*ACTION 5.6 Support the safe and equitable deployment of carbon capture, utilization, and storage (CCUS) for high-intensity and hard-to-abate emissions*

Carbon capture, utilization, and storage (CCUS) is a suite of technologies that can play a significant role in GHG emission reduction. Carbon capture can use a variety of techniques to remove emissions from industrial and power production operations post-combustion. With expansive geologic storage potential, highly concentrated industrial corridors, and a trained workforce, Louisiana has potential for deployment of this technology and infrastructure. For processes unable to be made efficient, electrified, or fuel switched, CCUS may be pursued. This action proposes the state continue to work with federal and state partners and industry to determine potential sites for storage, to identify a regulatory and legal framework that supports CCUS, and to determine impacts of capture and transport infrastructure buildout. Further actions in section "Safe and Resilient Energy and Infrastructure for Tomorrow's Needs" outline specific areas for impact analysis prior to permitting and deployment of infrastructure. (*Associated Submitted Action Proposals: 7, 45, 49, 74, 155*)

*ACTION 5.7 Invest in research for utilizations of captured carbon and life cycle analyses to understand their overall impact*

The capture and use of carbon dioxide to create valuable products has potential to lower the net costs of reducing emissions and remove CO<sub>2</sub> from the atmosphere. This process of utilization refers to the use of CO<sub>2</sub> directly or as a feedstock in industrial or chemical processes, to produce valuable carbon-containing products, where CO<sub>2</sub> can generate economic value. Utilization technologies are still nascent in form and barriers to implementation remain, so more funding is needed to research and pilot various techniques. This action proposes that DNR would partner with universities to more comprehensively understand and study the various utilization techniques and their applicability and feasibility to reduce emissions in Louisiana industries. (*Associated Submitted Action Proposals: n/a*)



## **STRATEGY 6. Promote reduced-carbon materials**

*ACTION 6.1 Develop a “Buy Clean Louisiana” policy for procurement of materials with lower carbon footprints for use in public construction projects*

Adoption of a “Buy Clean Louisiana” policy incentivizes the use of building materials (e.g., concrete and steel) that are manufactured through lower carbon intensity processes to reduce the GHG emission footprint of construction. This action, spurred by Louisiana’s Division of Administration (DOA), Office of Facility Planning and Control, and the Department of Transportation and Development (DOTD), would require state agencies to consider embodied carbon emissions, all carbon dioxide emitted in producing materials, of industrial products when contracting for state infrastructure and non-infrastructure projects. This action would lower GHG emissions and spur further innovation in materials science. *(Associated Submitted Action Proposals: 135)*

*ACTION 6.2 Explore how circular economy principles can be applied to lifecycles of products created and used in Louisiana*

A circular economy is a systemic approach to economic development based around an understanding of product lifecycles. Circular economies are designed to benefit businesses, society, and the environment while promoting zero waste – where every material after use becomes the feedstock for another use. Reducing GHG emissions by implementing material waste reduction programs, providing incentives for recycling, and investing in new technologies that consider the “lifecycle” of material products (e.g., plastics) are important actions to consider when reducing overall wasted energy. This action, coordinated by DEQ, other waste management entities, non-governmental organizations (NGOs) and private industry, includes reviewing opportunities to increase efficiency in recycling practices, exploring possible incentives for industrial use of recycled materials, and identifying other opportunities for the productive reuse of waste materials in Louisiana. After exploring options, this action would direct state agencies involved in the promotion of exports of goods and materials manufactured in Louisiana to develop specific proposals to help Louisiana manufacturers better engage in global markets already moving towards circular economy principles. *(Associated Submitted Action Proposals: 72, 82, 85)*

## **SAFE AND RESILIENT ENERGY AND INFRASTRUCTURE FOR TOMORROW’S NEEDS**

### **STRATEGY 7. Increase the reliability and long-term resilience of tomorrow’s energy infrastructure**

*ACTION 7.1 Support regional long-range transmission infrastructure planning*

Long-range transmission planning ensures that the electricity grid can accommodate the changes occurring in the energy sector as Louisiana transitions to lower GHG-emitting sources (e.g., electrification, the growth of distributed generation, the retirement of aging or inefficient generation, offshore wind, development of reliable and affordable energy storage). Recognizing the important role of long-range transmission planning for achieving GHG emissions reduction goals and maintaining reliable service during extreme weather events, the Office of the Governor will join with the LPSC as an active participant and stakeholder in Louisiana’s two regional transmission organizations, the Midcontinent Independent System Operator (MISO) and the Southwest Power Pool (SPP), to accomplish this action. This action would also ensure connectivity between the MISO and SPP infrastructure through operational agreements that manage joint coordination of transmission upgrades. *(Associated Submitted Action Proposals: 122, 123, 165)*



### *ACTION 7.2 Strategically plan for and foster the development of resilient microgrids*

Microgrids are localized “islands” of electricity generation that can be isolated from the larger macrogrid. This action, involving the Governor’s Office of Homeland Security and Emergency Preparedness, Louisiana National Guard, the LPSC, and other stakeholders, would involve collaboration to plan implementation of microgrids for strategically important entities and underserved communities to build resilience against increasing natural disasters. This action may initially implement pilot projects for strategic assets in the near-term with the intention of broader deployment of microgrids to improve the resilience of other municipalities or user groups over the long-term. (*Associated Submitted Action Proposals: 176*)

### *ACTION 7.3 Adopt an energy storage target*

Energy storage is a necessary component of Louisiana’s energy transition to ensure grid reliability and resilience. Storage enables larger quantities of and greater reliance on clean energy sources through addressing intermittency and fluctuations of solar and wind power generation. Many states, including Virginia and Pennsylvania, have enacted energy storage targets and a streamlined regulatory environment that incentivize energy storage. This action proposes the LPSC develop an energy storage target that mirrors the recommendation of the Energy Storage Association for a benchmark of 1000 megawatts within five years. This action would then require the Louisiana Legislature assemble an Energy Storage Task Force that proposes recommendations for how Louisiana will meet the target. (*Associated Submitted Action Proposals: 174*)

### *ACTION 7.4 Strategically plan for the development of offshore wind power*

Given the availability of wind power as a potential energy resource, Louisiana’s advantage as a strong offshore energy-producing state, and the economic development opportunity that wind power presents, it would be advantageous for Louisiana to continue collaboration across sectors and enhancing plans for the accelerated implementation of offshore wind power generation. This action proposes strategic collaboration across Louisiana state agencies and the federal government, transmission planning agencies, energy regulators, and the private sector, to take additional steps to advance development of offshore wind power generation. Possible activities under this action would include tool development, exploring incentives, conducting research and identifying knowledge gaps, conducting stakeholder outreach, and preparing the transmission and workforce infrastructures needed to capitalize on the deployment of offshore wind in the Gulf of Mexico. (*Associated Submitted Action Proposals: 61, 101*)

## **STRATEGY 8. Advance an equitable, efficient, and sustainable siting and permitting process for new energy and infrastructure projects**

### *ACTION 8.1 Increase the resources and staffing capacity of the Department of Natural Resources (DNR) to plan for, oversee, and monitor the deployment of new clean energy technologies and infrastructure*

DNR’s jurisdiction over utility-scale solar and wind energy on state lands and water bottoms makes the agency central in deployment of clean energy in Louisiana. This action would enable DNR or the Louisiana Legislative Auditor to guide the development of a process to assess, monitor, and make regulatory determinations on development of Carbon Capture and Storage (CCS), CCUS, and clean/renewable energy infrastructure technologies (e.g., solar farming, transmission lines, offshore wind). Specifically related to CCS and CCUS, a new and unique set of research, technology, and monitoring needs are required within DNR. Prior to the



permitting of any projects, this action would require an internal audit of the deploying agency to ensure that it is adequately funded and prepared to assess, monitor, and make regulatory determinations (e.g., related to geologic storage in the development and maintenance of CCS well sites). This action also supports increased capacity of DNR to monitor potential air quality impacts, leaks at CCS well sites, complications of underground storage, and others. *(Associated Submitted Action Proposals: n/a)*

*ACTION 8.2 Solicit a study to more comprehensively understand potential impacts of CCUS technology and infrastructure on communities, ecosystems, and cultural resources to inform siting and permitting deployment*

With mixed feedback and perception around the deployment of CCUS, this action proposes the state review existing research and solicit one or multiple studies to understand potential risks more comprehensively for Louisiana in buildout of this emission reduction technology. The study would expressly address but not be limited to the following concerns: air quality impacts on nearby communities, increased energy intensity for different industry processes, pipeline safety implications, wetland impact of pipeline buildout, potential incidents of geologic storage. *(Associated Submitted Action Proposals: N/A)*

*ACTION 8.3 Collaboratively develop regulatory frameworks and statewide siting plans for new energy technologies (e.g., solar farming, transmission lines, offshore wind, CCUS) with considerations for both climate and environmental justice*

For emerging energy generation and emissions reduction technologies in Louisiana (e.g., solar farming, offshore wind, CCUS), there is opportunity to ground the permitting and siting frameworks around the Principles and Fundamental Objectives identified in Louisiana’s Climate Action Plan. In anticipation of the significant investment in and deployment of large-scale low- or no-carbon technologies, this action would establish an interagency working group that, with the benefit of robust public input particularly from those who face disproportionate climate and environmental impacts, will engage in a prospective, pre-permit siting analysis. One of the primary goals of this action is to ensure that future permitting and siting decisions for the above-mentioned emerging technologies would be carried out in a coordinated manner that is consistent with the Principles and Fundamental Objectives of Louisiana’s Climate Action Plan and centered on an engagement process that is inclusive of environmental impacts, environmental justice considerations, and the needs of marginalized communities. To the extent possible, this effort would seek to identify areas where the necessary conditions (solar, atmospheric, geologic, and economic) for a given technology are highest and the potential for conflicts or adverse impacts (health, environmental, economic) are lowest. *(Associated Submitted Action Proposals: 46, 92, 96)*

*ACTION 8.4 Update existing permitting and facility siting practices and regulations to align with Louisiana’s emission reduction goals*

Currently, the construction of new and expanded industrial facilities are handled by multiple state agencies with multiple permit guidelines depending on the nature of the technology and the location of the proposed facility. Ostensibly all such decisions should be made in accordance with Article IX, §1 of the Louisiana Constitution which serves as the basis for what is known as the “Public Trust Doctrine.” However varying agency priorities, regulatory nuances, and administrative or judicial decisions have led to a complex and at-times disjointed process. Additionally, siting decisions are made on a permit-by-permit basis without having the benefit of a comprehensive statewide plan or framework. The ability of current permitting regulations to fully integrate the most recent understanding of climate impacts and environmental justice concerns is questionable. Via executive



order (EO), the Governor would mandate that all facility siting decisions be made in accordance with the emission reduction goals of EO JBE 20-18. This action would include convening an interagency panel (including DOTD, DEQ, DNR Office of Conservation [OOC], DNR Office of Coastal Management (OCM), Louisiana Department of Agriculture and Forestry [LDAF], the Coastal Protection and Restoration Authority [CPRA], Department of Wildlife and Fisheries [DWF]) with the benefit of robust public input, particularly from those who face disproportionate climate and environmental impacts, with the objective to review existing regulations and permitting practices to ensure that permitting and siting decisions are climate neutral and are not exceeding the cumulative risk burden on vulnerable communities, tribal lands, or the environment. *(Associated Submitted Action Proposals: N/A)*

#### *ACTION 8.5 Ensure energy transition does not overburden vulnerabilities communities*

Based on Action 8.4, this action would enable the same interagency panel (DOTD, DEQ, DNR-OOC, DNR-OCM, LDAF, CPRA, DWF) to establish an additional set of requirements for facility expansions, new developments, and GHG-reducing activities to ensure these activities do not exceed a cumulative risk burden for negative health impacts on nearby communities. Facilities subject to this environmental and public health impact review will include major sources of air pollution, resources recovery facilities, sewage treatment plants, landfills, recycling facilities, and CCUS. *(Associated Submitted Action Proposals: 46)*

## **ACTIVELY MANAGE METHANE EMISSIONS**

### **STRATEGY 9. Increase resources for decommissioning legacy oil and gas infrastructure**

#### *ACTION 9.1 Hold former well operators accountable for orphaned wells*

Orphaned wells are abandoned oil and gas wells for which no viable responsible party can be located, or such party has failed to maintain the wellsite in accordance with Louisiana rules and regulations. Leaks from orphaned wells create a large source of methane emissions where operators are not legally held responsible after wells are plugged and abandoned. This action includes a combination of legislation and regulation by the DNR to ensure that former operators are held responsible for abandoned wells; this action would include but may not be limited to the following activities: changing the definition of “responsible party” within DNR rules to include all former operators; collecting and publishing a database of orphaned wells and responsible parties; and allowing landowners to sue responsible parties for abandoned wells. *(Associated Submitted Action Proposals: 167)*

#### *ACTION 9.2 Strengthen financial security requirements for plugging wells*

The Oilfield Site Restoration (OSR) Program created within DNR focuses on properly plugging abandoned orphan wells and restoring sites to approximate pre-wellsite conditions suitable for redevelopment. Financial security requirements are state bonds that guarantee compliance of statutes and regulations for the issuance of permits for oil and gas exploration, drilling, and plugging. Lack of funding for the OSR Program, alongside loopholes in current state law and regulation that allow operators to avoid financial security requirements, leads to a failure to plug wells. This action proposes necessary comprehensive legislative reform to raise the amount of financial security, require additional bonding for coastal wells, remove the ability of operators to use blanket securities, and require site-specific trust accounts for wells in an ownership transfer. *(Associated Submitted Action Proposals: 168)*



### *ACTION 9.3 Tighten the “future utility” designation and requirements for inactive wells*

Under current regulation, industrial pipeline operators can classify inactive wells with a “future utility” status that indicates that the well has potential for use in the future. However, DNR’s ability to grant indefinite extensions creates a higher risk for “future utility” wells to become orphaned wells and subsequently creating potential negative impacts on the environment and communities. For example, over 1500 wells have been classified as “future utility” status for over 25 years, over 400 over 50 years. Over 7000 wells are currently listed as “future utility” and have had that status over 5 years. This action, enacted by the Louisiana Legislation, would develop regulatory measures that tighten the definition and requirements of a “future utility” well designation in its application and would also limit the duration a well can remain at “future utility” status. Current “future utility” wells would be reviewed and added to the list of orphaned wells as appropriate. *(Associated Submitted Action Proposals: 169)*

### *ACTION 9.4 Increase funding to the Oilfield Site Restoration (OSR) Fund to plug orphaned wells*

The OSR Fund is the state’s largest source of funding to plug orphaned wells. As noted by the Louisiana Legislative Auditor in 2014 and again in 2020, additional funding to the OSR is necessary to address and reduce the current population of orphaned wells, and exemptions and reduced fees result in approximately \$4.4 million in lost revenues to the OSR Fund. This action by the Louisiana Legislation would increase existing (and identify additional) funds for OSR, including a removal of the OSR Fund cap on OSR fees, increase of the OSR fee, removal of exemptions and reductions in fees, and increase of the orphan well surcharge by 150%. *(Associated Submitted Action Proposals: 166)*

### *ACTION 9.5 Provide workforce training to plug legacy wells*

Current Louisiana law limits operator responsibility to initial plug and abandonment; however, even capped and plugged oil and gas wells weaken over time. Plugs are expected to last 100 years and provide limited methane mitigation, meaning that today: 1) millions of legacy wells are likely failing; and 2) all wells eventually become the responsibility of the government. For these reasons, this action proposes establishment of an Abandoned Well Pilot Program from federal and state funding that provides training and jobs for unemployed residents in Louisiana to plug orphaned wells. Initial activity of this action would include a pilot study conducted in parishes most impacted by legacy infrastructure. *(Associated Submitted Action Proposals: 131)*

## **STRATEGY 10. Monitor and regulate methane emissions**

### *ACTION 10.1 Enact methane waste rules*

Methane is a potent GHG and has the potential to leak or be intentionally released into the atmosphere at the wellhead where it is produced, during its transportation and distribution, and when it is being cleaned, refined, or used in the manufacturing process. Reducing these methane emissions improves the GHG footprint of activities that currently use natural gas and is an important component of improving the overall effectiveness of deploying CCUS. Waste management facilities and sites are also sources of methane emissions. This action proposes that DNR-OOC and DEQ collaboratively develop rules to require methane emitters to establish a baseline methane waste capture rate, determined by their quarterly reports, and enact methane waste rules in line with those of other states. States such as New Mexico and Colorado have recently enacted methane waste rules to eliminate this wasteful practice with support from industry and environmental groups. New Mexico requires operators to capture no less than 98% of produced gas by December 31, 2026, starting on April 1, 2022. Although not setting a



strict capture limit, Colorado requires use of modern, zero-emitting (clean) components at all new and most existing facilities to limit methane emissions. *(Associated Submitted Action Proposals: 43, 89, CO, NM)*

#### *ACTION 10.2 Establish a Methane Monitoring Program*

To more comprehensively monitor emissions, this action proposes DNR-OOC and DEQ collaboratively develop programs that effectively and efficiently monitor both intentional and fugitive methane emissions. Emerging technologies, such as remote sensing and satellite imagery, alongside in-situ sensing are increasing the feasibility of continuous monitoring of methane emissions. This action would also ensure that data and maps that show regular fluxes in emissions are provided freely to the public. *(Associated Submitted Action Proposals: 76, 151)*

#### *ACTION 10.3 Enable an effective Leak Detection and Repair (LDAR) Program*

The most effective way to reduce leaks is to require frequent, and where possible continuous, monitoring. Many states have established Leak Detection and Repair (LDAR) programs, modeled after the U.S. EPA LDAR Program, to require owners and operators to find leaky and malfunctioning equipment at production facilities, compressor stations, natural gas storage facilities, and process plants, and then fix that equipment within a set time period of detection. Alongside reduced leakage, air quality and pipeline safety improvements make LDAR programs very cost-effective. Many states have established Leak Detection and Repair (LDAR) programs, modeled after the U.S. EPA LDAR Program, to require owners and operators to find leaky and malfunctioning equipment at production facilities, compressor stations, natural gas storage facilities, and process plants, and then fix that equipment within a set time period of detection. This action proposes a quarterly requirement of LDAR to ensure consistent monitoring. *(Associated Submitted Action Proposals: 91)*

## **TRANSPORTATION, DEVELOPMENT, AND THE BUILT ENVIRONMENT**

### **STRATEGY 11. Reduce vehicle miles traveled (VMT) and increase transportation efficiencies**

#### *ACTION 11.1 Reduce idling of public fleets*

Up to one gallon of fuel is burned per hour of idling, with each gallon equivalent to 20 pounds of carbon dioxide. Idle reduction technologies and practices can reduce the time that vehicle engines idle. This action proposes instituting idle reduction policies for Louisiana's 81,000 publicly owned vehicles. Implementation of this action would be supported by the use of fleet telematics software, already installed in many state-owned vehicles, to manage fuel usage and set an automatic shutoff for vehicles after prolonged idling. Coordination with the DOA alongside training for fleet managers and operators would support telematics usage and successful implementation across public fleets. *(Associated Submitted Action Proposals: 33, 100, 161)*

#### *ACTION 11.2 Expand broadband internet access*

The COVID-19 pandemic has accelerated the transition to online services, but this transition has not been widespread and accessible for all Louisianans due to limited broadband access in urban and rural areas. Expanding broadband, particularly for rural communities, can reduce overall transportation demand and therefore GHG emissions while facilitating e-commerce, telecommuting, and virtual health. This action proposes government serve as the subsurface conduit within public road rights-of-way: DOTD along state highways and local governments in their respective jurisdictions. *(Associated Submitted Action Proposals: 25)*





### *ACTION 11.3 Enact a state policy that allows for hybrid workplaces and telecommuting*

DOTD implements a variety of Travel Demand Management (TDM) strategies designed to maximize choice while reducing travel, single occupant trips, and congestion. TDM options are funded by DOTD and Metropolitan Planning Organizations and include biking, walking, ridesharing, public transit, and telecommuting. To further reduce regular travel demand in Louisiana, this action proposes DOA adopt a state policy that allows for and encourages hybrid workplaces and telecommuting for public workers. *(Associated Submitted Action Proposals: 81)*

### *ACTION 11.4 Explore short-term opportunities and incentives to increase efficiency of freight transport*

This action includes research into and incentives to increase the efficiency of freight transport for inter-city and/or interstate shipment of goods. This shift led by DOTD and DOA, in partnership with Ports and private freight companies (ground, rail, and water) could include efficiency incentives, traffic optimization, shore power at ports to reduce ship idling, and feasibility research into policy or pricing tools to encourage shifting freight to lower-carbon-intensity modes of transport. This action would continue and build upon existing DOTD congestion reduction programs. *(Associated Submitted Action Proposals: 1, 33, 106)*

### *ACTION 11.5 Implement a state VMT reduction strategy*

More efficient fuels and clean vehicles are valuable emission reduction actions but must also be accompanied by transportation mode shifting, where alternatives to automobile travel are chosen, in order to make a meaningful reduction in transportation-related emissions. To position Louisiana to encourage mode shift, this action proposes that DOTD develop a VMT reduction strategy that promotes, incentivizes, and enforces development of Complete Streets infrastructure that enables and supports safe mobility for all users inclusive of pedestrians, bicyclists, or public transportation users. Complete Streets policies should be supported, planned, and incentivized at the state, regional, and local level. The VMT strategy proposed by this action would highlight and build on partnerships with nonprofits and advocacy groups that are focused on these practices. *(Associated Submitted Action Proposals: 69, 70)*

## **STRATEGY 12. Accelerate adoption and accessibility of clean vehicles and fuels**

### *ACTION 12.1 Expand availability of alternative fuels and electric vehicle charging*

Increased availability of alternative fuel sources is critical to reducing GHG emissions and facilitating a smooth transition to clean transportation. This action proposes increased: motorist access to alternative fuels, efficient and sustainable fuels (including aviation), the number charging stations for electric vehicles, and investments in innovation. Dependent on both local and state-wide scales, this action is part of a broader near-term transition to clean energy for public utilities coordinated alongside state agencies (e.g., Department of Revenue, DNR, LDAF, DOTD, and LPSC), utility companies, legislative efforts, and universities. *(Associated Submitted Action Proposals: 12, 13, 22, 27, 94, 125)*

### *ACTION 12.2 Reduce socio-economic and geographic barriers to increase accessibility to low- and zero- emission vehicles and supporting infrastructure*

As low- and zero-emission vehicles become increasingly available, purposeful steps need to be taken to ensure intentional and equitable statewide buildout of vehicle electrification infrastructure, with special attention given to underserved and overburdened communities. Anticipated federal infrastructure funding will facilitate rapid deployment of siting infrastructure, but the state must strategically plan for the buildout of charging stations to



ensure equitable access. Alongside infrastructure, this action proposes that incentives for alternative fuels and low- and zero-emission vehicles be reinstated, either in the form of a state targeted incentive program or tax credit, to accelerate adoption and reduce barriers to access. This action would also include broad community outreach and education central to increased accessibility and would facilitate transitioning behavior to take advantage of incentives and buildout of electric vehicles. *(Associated Submitted Action Proposals: 83, 137, 175)*

#### *ACTION 12.3 Shift public fleets to clean and zero-emission vehicles*

With over 80,000 public vehicles operating in Louisiana, significant GHG emissions reduction can be realized through action taken to transition state and local government fleets to low- and zero-emission vehicles and fuels. This action would set a statewide policy and goal for the transition of public fleet vehicles to clean and zero-emission vehicles and fuels; coordinate among DOTD, DOA, state agencies, and local government to update procurement policies and practices, and work with fleet managers and mechanics to provide training for vehicle maintenance. *(Associated Submitted Action Proposals: 28, 36, 41, 143, 157)*

#### *ACTION 12.4 Begin infrastructure and technology planning to support transition of medium- and heavy-duty transportation, shipping, and aviation to clean and zero-emission*

Medium- and heavy-duty vehicles weigh more than 10,000 pounds and have an outsized impact on GHG emissions. Technical solutions for shifting these larger vehicles to clean and zero-emission fuels are less certain and less widely available than for light-duty vehicles, especially as vehicle turnover is less frequent. Comprehensive decarbonization of heavier duty transportation will also require supporting infrastructure buildout, such as retrofits to depots and fueling stations. This action proposes DOTD begin long-range strategic planning for technology adoption, fleet turnover, and infrastructure needs to support deep decarbonization of medium- and heavy-duty transportation, shipping and aviation. Specific to shipping, many international ships dock at Louisiana-based ports, so planning efforts proposed by this action would also develop emission standards for these vessels that reduce GHGs and potentially alleviate air quality hazards for communities near them. *(Associated Submitted Action Proposals: 12, 84)*

#### *ACTION 12.5 Implement targeted pilot project and incentive programs to accelerate transition of medium- and heavy-duty vehicles to clean and zero-emission vehicles*

Targeted pilot and incentive programs can encourage and accelerate a transition to cleaner heavy-duty vehicles. This action proposes DOTD, in partnership with DNR and DEQ, identify and implement targeted pilot projects and incentive programs that can make significant impact and/or test new technologies today. Such programs may include a targeted incentive program to accelerate the widespread deployment of electric yard trucks or terminal tractors, an expansion of the successful Port of New Orleans Clean Truck Replacement Incentive Program with other Louisiana Ports, and pilot program to replace diesel school buses with electric buses that can also be deployed as mobile power sources for critical facilities post-disaster. *(Associated Submitted Action Proposals: 41, 84, 137)*

### **STRATEGY 13. Increase urban, rural, and regional public transit service**

#### *ACTION 13.1 Increase financial support to local transit operators to increase statewide ridership*

More reliable and frequent public transit is necessary to increase ridership and reduce single-vehicle trips. Increased funding for local transit service will also benefit marginalized, transit-dependent populations in urban areas and provide competitive access to economic opportunity. This action proposes that DOTD increase funding for transit operations in eligible parishes and provide greater funding of the State Transportation Plan. The state



would work with federal partners to ensure more federal funding moves down to subsidize annual transit operations and allows local jurisdictions to secure funding more easily for transit locally. (*Associated Submitted Action Proposals: 95, 138*)

#### *ACTION 13.2 Enable access to resources outside urban centers*

Nearly 750,000 of Louisiana's 4.6 million residents live in rural areas. Therefore, a necessary measure to reduce light-duty vehicles on the road requires access to resources beyond urban centers and greater investment in rural transit service. This action proposes that DOTD, metropolitan planning organizations (MPOs), and local governments take a variety of measures to enable resource access: obtain smaller transit vehicles for more specialized trips, develop an on-demand ridership system, and planned trips to city centers coordinated and supported by the community. Federal funding from the infrastructure package would be prioritized for this transit buildout and for MPOs to develop on-demand public transit. (*Associated Submitted Action Proposals: 81, 95, 128*)

#### *ACTION 13.3 Invest in regional transit to connect communities to jobs and services across Louisiana*

Alongside local transit, regional connectivity can encourage greater use of public transportation. Dedicated bus lanes and high-occupancy vehicle (HOV) lanes on interstates, state highways, and major arterial roadways allow for more efficient travel on highways and urban streets. A high-speed rail between New Orleans and Baton Rouge would minimize light-duty and bus travel between Louisiana's largest cities for daily commuters. This action proposes investment from DOTD, local MPOs, local governments, and municipalities to intentionally plan and build infrastructure that supports regional transit. (*Associated Submitted Action Proposals: N/A*)

### **STRATEGY 14. Coordinate land use planning to reduce sprawl and support healthy and resilient communities**

#### *ACTION 14.1 Develop a statewide framework to guide resilient local land-use practices*

Mitigation of the root emissions of climate change is interconnected with adaptation to the impacts of climate change, particularly as it pertains to land use and land use management. However, with many risks, vulnerabilities, and relevant ongoing initiatives throughout Louisiana, a statewide framework is needed to unify and guide holistic land use management. This action proposes the development of a land use framework that would guide a statewide authority to coordinate decision making as it related to land use, and the authority would partner with DOTD in implementation of the state's VMT reduction strategy (Action 11.5). The statewide authority would also develop an education program that demonstrates the benefit of land use practices on achieving climate goals and reducing climate risk, and would assist locals in their development of comprehensive land use plans. The framework would consider needs of different communities across the state, particularly those underserved and overburdened. (*Associated Submitted Action Proposals: 18, 40, 69, 128*)

#### *ACTION 14.2 Encourage compact development through local trainings, incentives, tools, and model standards and ordinances*

A primary land-use practice to maximize resilience and emission reduction is compact development where land is used efficiently, creatively, and intentionally. Compact development promotes risk reduction and open space conservation while encouraging reuse and retrofit of existing structures, reduced VMTs, mode shift, and energy efficiency. To work towards compact development, this action proposes the state start by convening public, private, and local nonprofit bodies that plan and design compact development, permitting, regulation, and incentives. After receiving feedback from local groups, the state would pilot promising approaches and design



incentive and regulatory systems to support compact development, Complete Streets, and equitable transit access. *(Associated Submitted Action Proposals: 65, 69, 70)*

#### *ACTION 14.3 Develop a model solar ordinance for adoption by local governments*

Communities are increasingly seeing interest by the solar industry to make investments in communities for solar energy generation. However, many - if not most - local governments lack the capacity and technical expertise to develop ordinances on their own. Furthermore, lack of knowledge or misinformation about solar energy facilities may leave communities unprepared and unprotected from the impact of this type of industry and land use. The model solar ordinance developed by this action would be a tool available to local governments and contain the comprehensive policy language needed to protect properties, environments, and people, as well as guide and support solar energy investments locally. This tool would provide context, information, and capacity to local governments, increase predictability of impact, and support current and future solar energy investments that can significantly help the state transition to renewable energy. *(Associated Submitted Action Proposals: 20)*

#### *ACTION 14.4 Align statewide transportation planning and decision making with land use planning*

Transportation infrastructure often dictates how and where land is used and developed in Louisiana. To ensure compact development and other actions set forth in this section are a priority in the state, this action proposes that transportation planning align with smarter land use practices. Land use and transportation modeling tools can test land use scenarios and transportation pricing programs and should be incorporated into how decisions are made in transportation. This alignment would not only reduce VMT, allow for widespread implementation of Complete Streets, facilitate equitable access to public transit, and reduce the need for single-occupancy vehicles, but would also allow for greater implementation of green infrastructure and resilience measures to mitigate against Louisiana's flood risk. Alignment of transportation planning with smart land use would be led by the DOA and DOTD with close partnership by MPOs and local jurisdictions. *(Associated Submitted Action Proposals: 65)*

#### *ACTION 14.5 Reduce the negative impacts of state-funded transportation projects*

Major transportation projects, such as the construction of new or expanded roadways, can have multiple cascading impacts on greenhouse gas emissions as well as community resilience—from the materials used in construction to the spurring of new areas of development to inducing more vehicle miles traveled. This action would require that proposals for medium- to large-scale state-funded transportation projects include an analysis by DOTD of their climate impacts, including induced greenhouse gas emissions as well impacts on community resilience to future weather events. Tools developed by DOTD for this analysis would be made freely available to Parish and municipal governments to inform their decisions about locally-funded transportation projects. This action would also require that DOTD monitor and evaluate all road building and expansion projects to determine if they increase congestion. Transportation spending can also help jump start the “Buy Clean Louisiana” program (Action 6.1), prioritizing lower carbon intensity materials and advancing best practices and standards in road construction.

### **STRATEGY 15. Improve the efficiency and resilience of homes and non-residential buildings**

#### *ACTION 15.1 Improve energy efficiency in residential and commercial buildings by developing new retrofit programs and expanding existing weatherization programs*

This action proposes that Louisiana will retrofit 5% of buildings each year through a combination of expanding existing programs and developing new retrofit programs focused on energy efficiency, including DNR's Home Energy Loan Program (HELP) and reviving the expired Home Energy Rebate Option (HERO) program. Programs would focus on improving insulation, air sealing, appliance efficiency, HVAC efficiency, and other low-hanging



fruit that would provide a reduction in consumer electricity bills as well as a reduction in associated GHGs. Programs impacting public or commercial buildings can also improve indoor air quality and circulation to benefit human health. Implementation of these programs would create a network of trade allies who can perform retrofit work and create a workforce development pipeline. Lastly, program development through this action would coordinate and fund outreach and education to encourage homeowners and small businesses to understand their energy usage and identify possible areas for improved efficiency. (*Associated Submitted Action Proposals: 16, 87, 102*)

#### *ACTION 15.2 Set minimum thermal and lighting efficiency standards for residential, commercial, and public buildings*

Minimum efficiency standards can reduce energy demand and the associated GHGs. Under La. R.S. 30:1203, with some exceptions, this action proposes that DNR enact regulations for minimum thermal efficiency standards for new residential and light commercial buildings, minimum thermal and lighting efficiency standards for new and renovated commercial buildings, minimum lighting efficiency standards for existing public buildings, and procedures for the issuance of certificates certifying compliance with energy efficiency standards for buildings. Thermal efficiency relates to non-electric heating and cooling systems and well as hot water systems. (*Associated Submitted Action Proposals: 133*)

#### *ACTION 15.3 Lead by example in Louisiana through energy benchmarking in state public buildings*

The Louisiana Legislature passed Act 1184 in 2001, requiring benchmarking and disclosure of energy performance of buildings constructed with state funds. However, it has never been implemented. This action proposes that the state fund the implementation of Act 1184 and develop a system for benchmarking the energy performance of public buildings in Louisiana, using a life-cycle analysis methodology to calculate the carbon impacts from construction, materials, and operations over time. This system can be used to guide scoping, design, and procurement, but also in evaluating the carbon impacts of retrofits compared to a new build alternative. The energy savings from improved building performance can be recycled into additional audits, repairs, and improvements. Once developed, the energy benchmarking system could also be used by state subdivisions, parishes, and municipalities. Parishes may seek to accelerate this by developing their own initiatives, such as the St. Tammany Healthy Resilient Buildings Initiative, that can realize energy cost savings and improved air quality. (*Associated Submitted Action Proposals: 50, 87, 104, 134, 161*)

#### *ACTION 15.4 Update statewide building and energy efficiency codes*

The Louisiana State Uniform Construction Code Council (LSUCCC) is tasked with reviewing and approving updates to the state's building code. The Louisiana Legislature has, in the past, directed the LSUCCC to review and adopt new codes, such as the plumbing code. Currently, Louisiana's energy codes are from 2007 – more than 12 years out of date. This action directs LSUCCC to similarly review and adopt new codes pertaining to energy efficiency. In implementing this action, the Louisiana Legislature would also change the LSUCCC authorization and require them to adopt the latest codes automatically as new versions are published, except if overridden by a high threshold of the LSUCCC such as a 3/4 vote. These updates would also include promoting a performance-based building code that sets targets for energy consumption per building. If newer building codes were adopted, building projects could take advantage of the latest low-carbon materials such as mass timber. (*Associated Submitted Action Proposals: 75, 133, 50*)



### *ACTION 15.5 Promote the electrification of building appliances*

Appliances and systems like water heaters, HVACs, driers, and stoves account for the bulk of building energy use. Electrifying these appliances and systems not only reduce GHG emissions when they are powered by renewable or clean electricity, but they also save the user money due to increased energy efficiency. This action would direct rebates for the purchase of efficient electric appliances and systems to customers. To improve equitable access, rebates would be on a graduated scale based on income. This action would also work with retailers, contractors, and distributors to increase stocking of these appliances, so they are available options for unplanned upgrades (i.e. appliance breaks). It also includes making more widely available point-of-purchase materials to increase awareness.

## **NATURAL AND WORKING LANDS AND WETLANDS**

### **Strategy 16. Preserve and expand natural lands and urban green spaces to maximize climate mitigation and adaptation goals**

#### *ACTION 16.1 Conserve Louisiana’s interior natural lands, prioritizing forested lands, floodplains, wetlands and riparian areas*

This action would set a baseline and target for percentage of interior natural lands conserved or protected statewide; strategically identify priority areas for conservation that maximize ecological and social co-benefits, with a focus on forested lands as well as floodplains, wetlands, and riparian areas that provide critical watershed function and flood hazard mitigation; and expand the use of conservation servitudes and other conservation tools in partnership with landowners and local government. This action would also work to align and incorporate climate mitigation goals with the Louisiana Watershed Initiative. (*Associated Submitted Action Proposals: 40, 68*)

#### *ACTION 16.2 Support the expansion of urban tree canopy and green spaces*

Activities that reforest public areas in urban environments (including rights-of-way and adjudicated properties) and increase urban green spaces (e.g., parks, gardens, farms) can sequester carbon while also reducing heat island effect, reducing localized flooding, and increasing access to open space. This action proposes the state government act as convener among Parish and municipal governments to promote a coherent, statewide approach to promote tree planting and maintenance in urban areas along streets to help lower cooling loads and improve climate resilience. This action would prioritize tree-planting in historically underserved communities. In addition, this action would also include surveys of existing tree canopies in Louisiana urban areas, with progress tracked and reported annually, and would require that state-funded transportation projects dedicate at least 3% of project costs to the planting of trees and the provision of landscape-based stormwater runoff management. Finally, this action would promote inclusion of equity-focused conservation actions for urban green spaces in both regional and local plans (e.g., State Watershed Plan, Hazard Mitigation Plan, Comprehensive Plans). (*Associated Submitted Action Proposals: 2, 4, 44, 64, 68, 78*)

### **STRATEGY 17. Restore and conserve Louisiana’s coastal wetlands to maximize climate mitigation and adaptation goals**

#### *ACTION 17.1 Leverage the carbon sequestration potential of Louisiana’s coastal wetlands to accelerate implementation of Coastal Master Plan projects*

Implementation of Louisiana’s Coastal Master Plan includes coastal restoration actions to reduce land loss with a focus on risk reduction to support coastal communities. Implemented currently and over the long-term by CPRA,



LDAF, and the U.S. Army Corps of Engineers, restoration of wetlands will inherently lead to continuous carbon offsets by way of the increased plant biomass and carbon sequestration in the soil as well as mitigation of hazards related to relative sea-level rise and storm surge impacting vulnerable coastal communities. Incorporating climate mitigation goals and measures (e.g., carbon sequestration potential of natural wetlands) into future iterations of the Coastal Master Plan as well as into project design and prioritization could further make the case for investment in Louisiana’s coastal program and unlock additional resources for project implementation.

*(Associated Submitted Action Proposals: 77)*

#### *ACTION 17.2 Quantify and monitor the potential coastal blue carbon in Louisiana habitats and Coastal Master Plan projects*

Development of a quantification and monitoring strategy to assess net carbon flux of Louisiana’s coastal wetland habitats (fresh, intermediate/brackish, and saline; also known as coastal blue carbon) is a crucial step towards building a robust carbon finance framework. Carbon financing presents an opportunity for the state to partner with industry to expand coastal wetland restoration initiatives. Near-term, this action would include: 1) research and development led by the state, non-profits, and/or academic institutions to create accurate biogeochemical models that will allow quantification of Louisiana’s coastal blue carbon over time and across variable environmental conditions; and 2) expanding support and monitoring capacity of existing foundational monitoring programs (e.g., System Wide Assessment and Monitoring Program (SWAMP) that includes the Coastwide Reference Monitoring System [CRMS]) to quantify coastal blue carbon across coastal Louisiana over time. *(Associated Submitted Action Proposals: 59, 60, 77)*

### **STRATEGY 18. Support the sustainable management and conservation of working agricultural and forestry lands**

#### *ACTION 18.1 Establish a Louisiana Conservation Innovation Program*

Many states have established Conservation Innovation Programs to promote development of innovative conservation practices unique to the state. In implementing this action, a Louisiana Conservation Innovation Program would be created within the LDAF that will stimulate development and adoption of innovative conservation approaches and technologies that curtail and sequester GHG emissions. Through partnering with the U.S. Department of Agriculture (USDA) Conservation Innovation Grant Program, the LDAF will promote pilot projects, field demonstrations, and on-farm conservation research. *(Associated Submitted Action Proposals: 42, 110)*

#### *ACTION 18.2 Support the transition to regenerative agriculture and forestry practices*

Regenerative agriculture can be generally described as a system of farming principles and practices that seeks to rehabilitate and enhance farm ecosystems by placing an emphasis on soil health, water management, fertilizer use, and other best management practices. Transition to regenerative agriculture and forestry practices is essential to minimize the agricultural sector’s GHG emissions, maximize agricultural sequestration potential, and promote healthy soils and ecosystems. However, many barriers impede widespread transition. This action proposes that LDAF and local Soil and Water Conservation Districts (SWCDs) convene focus groups of farmers, ranchers, and foresters to identify barriers to adoption of various conservation practices and identify opportunities and solutions to overcome those challenges. SWCDs are local units of state government that provide conservation planning services to landowners. This action would also propose increased funding for the LDAF to be distributed to local SWCDs. Adequate resources would allow SWCDs to build on, coordinate, and expand sustainable agriculture



programs and partnerships across stakeholder groups and their districts. (*Associated Submitted Action Proposals: 88*)

#### *ACTION 18.3 Establish a technical assistance grant program for farmers and foresters*

As consensus is built around impediments to adoption of regenerative agriculture and forestry conservation practices (see Action 18.2), this action would promote partnerships between LDAF, SWCDs, and the USDA Natural Resource Conservation Service (NRCS) to develop a competitive grant program that offers technical and financial assistance to landowners that would guide and support transition and lower barriers to utilize on-farm conservation practices. (*Associated Submitted Action Proposals: N/A*)

#### *ACTION 18.4 Expand implementation of on-farm conservation programs*

On-farm conservation programs have had the largest success in transitioning farmers, ranchers, and forest landowners to implementing conservation practices. The Louisiana Conservation Delivery Program, a partnership of the USDA NRCS and local SWCDs along with individual landowners, focuses on enhancing and conserving soil, water, and related natural resources through implementation of voluntary on-farm conservation plans of sustainable practices. This action uplifts this successful program and would expand federal and state funding for it. (*Associated Submitted Action Proposals: 38, 39*)

#### *ACTION 18.5 Measure carbon sequestration potential of conservation farming best management practices*

Best management practices are central to regenerative and conservation farming, though their emission reduction and carbon sequestration potential have not been quantified. This action would task state research institutions to study, monitor, and publish data on the co-benefits and impacts of best management practices to abate GHG emissions, improve soil and water quality, improve natural ecosystems, and sequester carbon. (*Associated Submitted Action Proposals: 34*)

#### *ACTION 18.6 Establish an urban agriculture and conservation program in the LDAF*

The LDAF currently offers a variety of approaches to conservation through partnerships, programs, and projects through its Office of Soil and Water Conservation and SWCDs. To build on this work and to create additional conservation involvement and education opportunities for the greatest diversity of producers and landowners, this action promotes an urban agriculture and conservation program within the LDAF. The proposed program would provide educational resources, workforce development and training, marketing assistance, and grant support for farmers, landowners, foresters, and other stakeholders as they work to adopt sustainable and regenerative agriculture practices that build resilience, mitigate GHG emissions, and sequester carbon across all Louisiana landscapes. (*Associated Submitted Action Proposals: 88*)

#### *ACTION 18.7 Establish a statewide compost facility and accompanying local programs*

Composting is an effective waste and GHG reduction measure that diverts organic materials from landfills and incinerators and converts those materials into valuable fertilizer to replenish and stabilize the soil. The state already implements an Agriculture Solid Waste Best Management Practice (BMP) Program, though compost is not always the beneficial use at the end of the waste stream. This action proposes the state designate a statewide compost facility, promote compost as a solid waste BMP, and partner with parish- and municipal-level compost programs. Public compost facilities would also increase the viability of community gardens that further promote





sustainable and local agriculture, providing resources to underserved and overburdened communities. *(Associated Submitted Action Proposals: 154, 158, 159, 160)*

*ACTION 18.8 Promote market driven strategies that encourage smarter forest management and greater use of Louisiana forest products for construction*

Markets for wood products create incentives for landowners to plant more trees and keep forests as forests. Educating landowners on the management of forests and encouraging use of forest products through market driven incentives would increase the amount of carbon captured and stored by the forest. This action proposes the state encourage the use of Louisiana forest products—in the form of lumber, plywood, paper, wood pellets, and biomass—in state capital projects and other construction projects. Markets for low-value forest products and residuals, such as residuals generated during milling and production and woody fiber for biofuels and bioenergy, further incentivize forest management and forest products manufacturing, resulting in more carbon sequestration and storage. Implementation of this action would include research and development of new technologies by the state of Louisiana (LDAF, Louisiana Economic Development [LED], Louisiana Forestry Association [LFA], DNR, and the energy sector) related to increasing the use of cellulose (plant-based) products can innovate Louisiana’s manufacturing, construction, and energy sectors while reducing GHG emissions. *(Associated Submitted Action Proposals: 26, 31, 67)*

## **AN INCLUSIVE, LOW-CARBON ECONOMY**

### **STRATEGY 19. Strengthen climate education, research, and innovation as a focus of Louisiana’s energy transition**

*ACTION 19.1 Establish a Research Practitioner Partnership (RPP) Program to support climate education*

This action, enabled through the Louisiana Department of Education STEM Team and the LA STEM Council, proposes a Research Practitioner Partnership (RPP) Program to would provide dedicated, yearly funding and support for K-12 climate education projects and curricula implemented by educators, researchers, practitioners, industry, and policy makers. This is seen as a critical step towards ensuring that the next generation is prepared, resilient, and innovative when facing future climate threats. *(Associated Submitted Action Proposals: 54)*

*ACTION 19.2 Teach, re-train, and employ Louisiana residents in clean energy sectors*

Training Louisiana workers is a critical step towards transitioning and growing the state’s local clean energy industry. This action, enabled by the Louisiana Board of Regents, the Louisiana Legislature, and the Louisiana Department of Labor, would create a Climate Corps Program for local community colleges and Louisiana universities to provide education, training, and re-training necessary to support the growth of the renewable energy industry. This action would also encourage the growth of rural jobs that take advantage of natural carbon sequestration, such as encouraging employment of foresters and land managers who understand the best practices for natural carbon sequestration. This action would provide training and career track transition programs in the form of four-year degrees, two-year degrees, and industry certificate programs offered in the following areas: information technology, electrical engineering, utility management, and electrical vehicles (manufacturing, operations, maintenance). *(Associated Submitted Action Proposals: 23,99, 137)*



### *ACTION 19.3 Coordinate climate change mitigation and adaptation research needs across Louisiana's university network*

Louisiana's extensive research institution and university network offers widespread expertise well-suited to inform climate action. Many universities are already investing in and undertaking research related to various aspects of climate action, though this research and development is often not coordinated. This action proposes The Water Institute of the Gulf (TWI), as the state's Innovation and Collaboration Hub, first inventory interdisciplinary climate research capabilities across the state to provide a broad understanding of existing in-state expertise in climate action. Following completion of this inventory, TWI would launch a partnership program to serve as the coordinating unit that identifies state research needs, convenes institutions to discuss emerging work, and partners among universities on grant and project proposals that seek to understand existing emissions and emission reduction measures by sector. Partners of this program would meet quarterly to coordinate ongoing work and identify emerging opportunities for research, development, and demonstration/pilot projects for the state. *(Associated Submitted Action Proposals: N/A)*

## **STRATEGY 20. Prioritize Louisiana workers and businesses in the transition to a low-carbon economy**

### *ACTION 20.1 Promote and invest in Louisiana solar and offshore wind industries, including specialized worker training and long-term economic development planning to recruit, develop, and retain firms and workers*

Louisiana has many programs and investments in place to promote the energy industry, and the state could retool these programs to promote and invest in the energy of the future, especially solar and offshore wind. As other states invest in the energy transformation, Louisiana cannot afford to be left behind. This action proposes a combination of legislative and executive actions to adjust tax incentives, permits, worker training programs, and determine other ways to speed and smooth the transformation of the state's energy systems. *(Associated Submitted Action Proposals: 23, 61, 93)*

### *ACTION 20.2 Coordinate worker training opportunities with the development of renewable power generation at distributed and utility scales, so that workers are qualified to install and maintain systems at both scales*

The technical needs of renewable power generation are different at the utility scale than at the distributed (individual building) scale. However, with training, a worker could be qualified to work on either type of installation. This action, based on improving the likelihood of workers maintaining steady work across utility and distributed projects, implemented by the state coordinates training opportunities with planned installations so that workers can benefit from hands-on experience and training for renewable energy work across Louisiana. *(Associated Submitted Action Proposals: N/A)*

### *ACTION 20.3 Establish and expand state offices in under-resourced communities to provide tailored programs and services for the energy transition that include procurement and development opportunities for small businesses and workers*

If the energy transition is to reach communities most impacted by climate change and disinvestment, Louisiana should extend the physical reach of state offices and programs to these communities. Implementation of this action would include extending existing offices and programs, like Small Business Assistance Centers run by the



LED, and could expand to new services specifically needed for the energy transition (e.g., Rapid Response teams, Action 20.4). This action incorporates targeted outreach specifically for procurement and development opportunities for small businesses and workers in these communities, ensuring they can benefit from investments in renewable energy. *(Associated Submitted Action Proposals: N/A)*

*ACTION 20.4 Create Louisiana Rapid Response teams to support transition services for oil and gas workers facing job displacement and layoffs*

Louisiana has lost thousands of jobs in oil and gas over the last decade, and as the energy transition accelerates it is inevitable that additional oil and gas workers will face layoffs. To make sure that these workers are supported, this action proposes the creation of Rapid Response teams that can “deploy” to communities facing job losses and facility closures. These Rapid Response teams could work with the workers and their families as part of a Just Transition, ensuring that the workers receive unemployment benefits, support services, and that relevant training or new job opportunities are identified. Louisiana’s oil and gas workers are skilled and valued, and the state should proactively work to place them in new high-quality jobs where their skills can be used, even if not every worker can transition to the renewable energy industry. *(Associated Submitted Action Proposals: 153)*

*ACTION 20.5 Establish partnerships with Louisiana unions and businesses to guarantee job placements for workers in clean energy training programs*

Enrolling in a training program is often too risky, with foregone wages not worth the opportunity cost of gaining a new certification. Still riskier is the prospect of no job waiting at the end of a training program. This action would create partnerships between the state, unions, and businesses to guarantee job training placements for workers so that they know the investment in their skills will be worth the risk. A job guarantee would increase the number of workers enrolled and completing training programs in clean energy and other skills needed for the energy transition. *(Associated Submitted Action Proposals: N/A)*

**STRATEGY 21. Build a more just and resilient future for all Louisiana residents**

*ACTION 21.1 Establish the Louisiana Office of Economic Resilience*

This action proposes the establishment of the Louisiana Office of Economic Resilience to help provide strategic direction and support to the state, workers, and small businesses as they manage economic transitions. This Office would conduct research and develop programming dealing with transitions resulting from globalization and trade disruptions, rapid technological shifts including increased automation, changes to fossil fuel prices and demand, widespread efforts to decarbonize the energy sector, and other challenges resulting from climate change. In addition, the Office would also implement a Just Transition Program to ensure economic opportunity is created for those hardest hit by the transition. This action would be a joint effort by LED and the Louisiana Workforce Commission which would also help promote and prepare workers for emerging opportunities related to the manufacturing, installation, and servicing of renewable energy systems, batteries and other forms of energy storage, natural and engineered carbon sequestration, and energy efficiency.



## COLLABORATION AND PARTNERSHIPS TO ENSURE SUCCESSFUL IMPLEMENTATION

### STRATEGY 22. Ensure Louisiana is prepared to maximize potential federal funding opportunities

Federal funding opportunities can help prepare Louisiana for the transition to a low-carbon economy. These opportunities could include but are not limited to:

- Converting state and local fleets; buildout of electric vehicle infrastructure (SA# 158, 162, 29, 27, 36)
- School bus electrification (SA# 137)
- Plug, remediate, and reclaim orphaned wells (SA# 166, 167, 168)
- Expand monitoring of methane leaks (SA# 91, 151)
- Measuring, monitoring, and enhancing wetland sequestration (SA# 59, 60)
- Pre-disaster mitigation and community-focused resilience (SA# 152)
- 45Q carbon sequestration (SA# 109, 120, 121)
- Hydrogen Hubs and Direct Air Capture Hubs
- Accelerate offshore wind opportunity in Louisiana (SA# 61, 101)
- Attracting clean energy industries and investments (SA# 29)
- Investments in Energy Efficiency Improvements and Weatherization Programs (SA#119, 162, 16, 177)
- Expanding the Trade Adjustment Assistance program to include workers displaced by climate or energy transitions (SA# 153, 23)
- Advocating for a streamlined federal acknowledgement process for Louisiana tribes
- Investing in rural broadband (SA# 25)
- Sustainable agriculture, forestry, and soil management
- Environmental data scientists

### STRATEGY 23. Position Louisiana as a climate leader through engaging in national and regional dialogues and planning

Partnerships are essential to make meaningful progress towards Louisiana's targets. Regional partners are necessary to advance cap-and-trade, electricity transmission planning, offshore wind development, and climate adaptation. This strategy recommends that Louisiana initiate and participate in discussions with surrounding states to establish a regional cap-and-trade program, intentionally plan expansion of electricity transmission infrastructure and offshore wind development, and set goals towards climate resilience with states facing similar threats. National partners are also essential to secure and ensure support for the state's goals and to pilot nationwide initiatives that move towards carbon neutrality. In addition to federal priorities mentioned above, Louisiana supports a national carbon price policy and would work to advance this action with federal partners.

### STRATEGY 24. Align climate action approaches across state government

A whole-of-government approach within Louisiana is necessary to advance emission reduction actions. The Governor's Office will encourage cross-agency collaboration and alignment, the setting of climate-related goals within individual agencies, and the strengthening of partnerships with local government, communities, and Indigenous peoples to coordinate and carry out actions that cross and extend beyond agency jurisdictions. As the



central implementer of this Climate Action Plan, state agencies must maintain alignment and function as a coordinated unit for climate action to be successful. The Governor’s Office will also seek to collaborate with other state entities such as the LPSC and the Louisiana Legislature.

### **STRATEGY 25. Coordinate action with local governments**

Local governments are significant collaborators and implementers of climate action within their jurisdictions. State partners will work alongside local government to encourage local climate action planning to complement Louisiana’s Climate Action Plan, reduce emissions locally, enhance economic activities, and advance equity around local concerns as climate mitigation activities are implemented. Alongside engagement with communities on climate change emissions, parishes and municipalities will work to build community awareness, safer regulation, sufficient funding, and collective implementation of equitable disaster planning and recovery across the rural to urban gradient.

### **STRATEGY 26. Call upon the private sector to align their practices and play a leading role in climate action**

Businesses are crucial partners for developing innovative and technical solutions to reduce emissions and critical sources of resources to meet environmental goals. The Governor’s Office and state partners must work with and engage in solution building continuously with the private sector and regulated utilities, to implement the actions set forth in this Climate Action Plan. One action that would require such a public-private partnership is the establishment of a Green Bank. Private sector and utilities would collaborate with the state to develop a Green Bank that leverages public and private dollars for the implementation of climate mitigation and adaptation initiative, particularly for low-wealth households with community involvement in how funds are spent.

### **STRATEGY 27. Improve engagement with disadvantaged communities and Indigenous peoples**

Disadvantaged communities and Indigenous peoples must be at the center of collaboration and partnership in the development and implementation of climate action. In development, the Climate Initiatives Task Force will ensure actions set forth in this Climate Action Plan create new opportunities for and benefits to disadvantaged communities and Indigenous peoples, particularly those historically marginalized, those who face disproportionate climate impacts, and those of low-to-moderate income. In implementation, the Climate Initiatives Task Force must enable and encourage communities and Indigenous peoples are enabled and encouraged to engage in knowledge sharing, solution building, and decision making. The Governor’s Office and its state agencies must invest in sustainable two-way communication of needs and progress with Indigenous peoples and marginalized communities.

## **ACCOUNTABILITY AND ADAPTABILITY TO ENSURE LASTING SUCCESS**

### **STRATEGY 28. Ensure that Climate Action Plan strategies are effectively and transparently implemented**

#### *ACTION 28.1 Establish the Governor’s Office of Climate Resilience*

As seen in the actions established in this Louisiana Climate Action Plan, climate change mitigation and adaptation require extensive coordination across multiple stakeholders inside and outside of government. It also requires focus to oversee the implementation of this plan and assess progress toward meeting the Governor’s GHG emission reduction goals. This action would establish a formal Governor’s Office of Climate Resilience within the Governor’s Office to ensure the successful implementation of the actions contained in this Climate Action.



*ACTION 28.2 Legislatively enable the Climate Initiatives Task Force (Task Force) with quarterly meetings*

This action by the Louisiana Legislature would enable regular Climate Initiatives Task Force (Task Force) meetings to ensure progress is made towards the implementation of emission reduction strategies and actions; the impacts of these actions on the people, environment, and economy of Louisiana are understood; transparency is maintained; and the critical issue of climate change in Louisiana remains in focus. Regular meetings of the Task Force would ensure the impacts of these actions are tracked and provided to the public, and that opportunities to increase the effectiveness of action implementation in practice are identified and pursued.

**STRATEGY 29. Track progress in reducing net GHG emissions reductions and adapt the approaches taken as needed**

*ACTION 29.1 Establish a Louisiana GHG monitoring program*

Regular collection of GHG data across the state is vital to providing checkpoints on GHG reduction to adaptively manage emission reduction approaches across all sectors. This action includes development of a GHG Monitoring Program established by DEQ-DNR to collect GHG data, which could be used in conjunction with regular updates of the GHG inventory. In addition, this action would facilitate benchmarking that could be used to determine whether the strategies and actions included in the Louisiana Climate Action Plan are effective once implemented.

*ACTION 29.2 Update the state GHG inventory biennially*

In conjunction with regular collection of GHG data (Action 29.1), updates to the GHG inventory are necessary to monitor progress and hold the state accountable for progressing towards reduction goals. This action proposes that the Louisiana Legislature statutorily mandate biennial updates to the GHG inventory with consistent funding to support these efforts. In addition, this action would support work by the state to continue to increase the accuracy of that assessment as technologies evolve. The U.S. EPA State Inventory Tool (SIT) model has been used as the primary information source for inventory updates, but this methodology has known and acknowledged limitations. This proposed action would include investments in remote sensing, satellite imagery, and other tools to provide more accurate and comprehensive monitoring of GHG emissions in Louisiana, as well as incorporating criteria pollutants monitored by the DEQ Air Quality Monitoring Program into the GHG inventory.

*ACTION 29.3 Update the Louisiana Climate Action Plan every five years*

The strategies and actions outlined in the Louisiana Climate Action Plan have been selected based on their expected effectiveness in reducing net GHG emissions while also having the best anticipated outcomes for the state and its people. An updated GHG inventory would reveal where those actions were effective, while at the same time new strategies or actions may become available due to advances in technology or increased understanding of the most effective approaches in net GHG emission reduction. This action would allow updates to Louisiana's Climate Action Plan every five years by the Governor's Office to ensure that it continues to be based on the best available science and that the actions taken demonstrate benefits to Louisiana's communities, environment, and economy to the greatest extent possible. Regular updates would ensure ineffective actions could be modified or replaced, the greatest investment is in the most effective approaches, and new technologies could be incorporated when available.



## APPENDIX C: DEFINED IMPACT SCALES

Defined impact scales were developed to evaluate impacts of action on FOs. Appendix B provides the guiding criteria used by AGs to qualitatively evaluate each FO via the questionnaire evaluation method.

### CATEGORY 1: IMPROVING QUALITY OF LIFE FOR RESIDENTS AND COMMUNITIES

#### FO: Maximize quality of, and access to, essential goods, services, and infrastructure for residents

Evaluation criteria for this objective are given below (Table 5).

Table 5. Evaluation criteria for FO “Maximize quality of, and access to, essential goods, services, and infrastructure for residents”.

Scale	Guidance
<b>Very Positive</b>	<p><i>Strategies/actions result in <b>significant improvements</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• <b>Housing:</b> Access to high-quality healthy, safe, and affordable housing (rental and homeownership)               <ul style="list-style-type: none"> <li>○ Health, safety, and quality improvements to existing housing supply</li> <li>○ Construction of high-quality new housing that is safe, affordable to individuals and families of all income levels, and located near jobs and essential services</li> <li>○ Preserve existing supply and expand total supply of affordable rental and homeownership opportunities</li> <li>○ Reduce long-term housing costs (maintenance, repair, property taxes, flood insurance, etc)</li> </ul> </li> <li>• <b>Transportation:</b> Access to high-quality affordable and reliable transportation that meets people’s needs               <ul style="list-style-type: none"> <li>○ Increased safety, quality, and supply of infrastructure to support many modes of transportation (car, public transit, bike, walking) and types of users (urban, rural, people without cars)</li> <li>○ Reduced commute times and increase in transportation options that meet people’s schedules</li> <li>○ Reduced reliance on transportation to meet daily basic needs</li> <li>○ Reduced transportation costs to individuals and families</li> </ul> </li> <li>• <b>Consumer energy:</b> Access to reliable, resilient, and affordable energy sources for consumers               <ul style="list-style-type: none"> <li>○ Reduced utility costs for consumers</li> <li>○ Increased reliability and long-term resilience of energy infrastructure, especially in the face of extreme weather events and climate risks</li> </ul> </li> </ul>
<b>Positive</b>	<p><i>Strategies/actions result in <b>small to modest improvements</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• <b>Housing:</b> Access to high-quality healthy, safe, and affordable housing (rental and homeownership)               <ul style="list-style-type: none"> <li>○ Health, safety, and quality improvements to existing housing supply</li> <li>○ Construction of high-quality new housing that is safe, affordable to individuals and families of all income levels, and located near jobs and essential services</li> <li>○ Preserve existing supply and expand total supply of affordable rental and homeownership opportunities</li> <li>○ Reduce long-term housing costs (maintenance, repair, property taxes, flood insurance, etc)</li> </ul> </li> <li>• <b>Transportation:</b> Access to high-quality affordable and reliable transportation that meets people’s needs               <ul style="list-style-type: none"> <li>○ Increased safety, quality, and supply of infrastructure to support many modes of transportation (car, public transit, bike, walking) and types of users (urban, rural, people without cars)</li> <li>○ Reduced commute times and increase in transportation options that meet people’s schedules</li> <li>○ Reduced reliance on transportation to meet daily basic needs</li> <li>○ Reduced transportation costs to individuals and families</li> </ul> </li> <li>• <b>Consumer energy:</b> Access to reliable, resilient, and affordable energy sources for consumers</li> </ul>



Scale	Guidance
<b>Neutral</b>	<ul style="list-style-type: none"><li>○ Reduced utility costs for consumers</li><li>○ Increased reliability and long-term resilience of energy infrastructure, especially in the face of extreme weather events and climate risks</li></ul> <hr/> <p><i>Strategies/actions result in <b>virtually no change</b> in:</i></p> <ul style="list-style-type: none"><li>● <b>Housing:</b> Access to high-quality healthy, safe, and affordable housing (rental and homeownership)<ul style="list-style-type: none"><li>○ Health, safety, and quality improvements to existing housing supply</li><li>○ Construction of high-quality new housing that is safe, affordable to individuals and families of all income levels, and located near jobs and essential services</li><li>○ Preserve existing supply and expand total supply of affordable rental and homeownership opportunities</li><li>○ Reduce long-term housing costs (maintenance, repair, property taxes, flood insurance, etc)</li></ul></li><li>● <b>Transportation:</b> Access to high-quality affordable and reliable transportation that meets people’s needs<ul style="list-style-type: none"><li>○ Increased safety, quality, and supply of infrastructure to support many modes of transportation (car, public transit, bike, walking) and types of users (urban, rural, people without cars)</li><li>○ Reduced commute times and increase in transportation options that meet people’s schedules</li><li>○ Reduced reliance on transportation to meet daily basic needs</li><li>○ Reduced transportation costs to individuals and families</li></ul></li><li>● <b>Consumer energy:</b> Access to reliable, resilient, and affordable energy sources for consumers<ul style="list-style-type: none"><li>○ Reduced utility costs for consumers</li><li>○ Increased reliability and long-term resilience of energy infrastructure, especially in the face of extreme weather events and climate risks</li></ul></li></ul> <hr/>
<b>Negative</b>	<p><i>Strategies/actions result in <b>small to modest deterioration</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>● <b>Housing:</b> Access to high-quality healthy, safe, and affordable housing (rental and homeownership)<ul style="list-style-type: none"><li>○ Health, safety, and quality improvements to existing housing supply</li><li>○ Construction of high-quality new housing that is safe, affordable to individuals and families of all income levels, and located near jobs and essential services</li><li>○ Preserve existing supply and expand total supply of affordable rental and homeownership opportunities</li><li>○ Reduce long-term housing costs (maintenance, repair, property taxes, flood insurance, etc)</li></ul></li><li>● <b>Transportation:</b> Access to high-quality affordable and reliable transportation that meets people’s needs<ul style="list-style-type: none"><li>○ Increased safety, quality, and supply of infrastructure to support many modes of transportation (car, public transit, bike, walking) and types of users (urban, rural, people without cars)</li><li>○ Reduced commute times and increase in transportation options that meet people’s schedules</li><li>○ Reduced reliance on transportation to meet daily basic needs</li><li>○ Reduced transportation costs to individuals and families</li></ul></li><li>● <b>Consumer energy:</b> Access to reliable, resilient, and affordable energy sources for consumers<ul style="list-style-type: none"><li>○ Reduced utility costs for consumers</li><li>○ Increased reliability and long-term resilience of energy infrastructure, especially in the face of extreme weather events and climate risks</li></ul></li></ul> <hr/>
<b>Very Negative</b>	<p><i>Strategies/actions result in <b>significant deterioration</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>● <b>Housing:</b> Access to high-quality healthy, safe, and affordable housing (rental and homeownership)<ul style="list-style-type: none"><li>○ Health, safety, and quality improvements to existing housing supply</li><li>○ Construction of high-quality new housing that is safe, affordable to individuals and families of all income levels, and located near jobs and essential services</li></ul></li></ul>





Scale	Guidance
	<ul style="list-style-type: none"> <li>○ Preserve existing supply and expand total supply of affordable rental and homeownership opportunities</li> <li>○ Reduce long-term housing costs (maintenance, repair, property taxes, flood insurance, etc)</li> <li>● <b>Transportation:</b> Access to high-quality affordable and reliable transportation that meets people’s needs               <ul style="list-style-type: none"> <li>○ Increased safety, quality, and supply of infrastructure to support many modes of transportation (car, public transit, bike, walking) and types of users (urban, rural, people without cars)</li> <li>○ Reduced commute times and increase in transportation options that meet people’s schedules</li> <li>○ Reduced reliance on transportation to meet daily basic needs</li> <li>○ Reduced transportation costs to individuals and families</li> </ul> </li> <li>● <b>Consumer energy:</b> Access to reliable, resilient, and affordable energy sources for consumers               <ul style="list-style-type: none"> <li>○ Reduced utility costs for consumers</li> <li>○ Increased reliability and long-term resilience of energy infrastructure, especially in the face of extreme weather events and climate risks</li> </ul> </li> </ul>

### FO: Maximize positive public health outcomes and public safety

Evaluation criteria for this objective are given below (Table 6).

Table 6. Evaluation criteria for FO “Maximize positive public health outcomes and public safety”.

Scale	Guidance
<b>Very Positive</b>	<p><i>Strategies/actions <b>significantly reduce exposure</b> to contaminants or hazards that negatively affect human health, such as:</i></p> <ul style="list-style-type: none"> <li>● Indoor and outdoor air co-pollutants (PM2.5, NOx, SOx, Ozone)</li> <li>● Hazardous or radioactive waste</li> <li>● Transportation accidents</li> <li>● Occupational hazards</li> <li>● Extreme weather events</li> </ul> <p><i>Strategies/actions <b>significantly increase access</b> to resources that improve human physical and mental health, such as:</i></p> <ul style="list-style-type: none"> <li>● Healthy food access and improved nutrition</li> <li>● Increased options for safe physical activity</li> <li>● Access to open space and nature</li> </ul> <p><i>Strategies/actions result in a <b>significant net improvement</b> in health effects and health outcomes, such as rates of:</i></p> <ul style="list-style-type: none"> <li>● Diseases: Asthma, cancer, cardiovascular disease, obesity, diabetes</li> <li>● Unintentional injury or premature death</li> <li>● Mental health and wellbeing</li> <li>● Overall life expectancy</li> </ul>
<b>Positive</b>	<p><i>Strategies/actions <b>somewhat reduce exposure</b> to contaminants or hazards that negatively affect human health, such as:</i></p> <ul style="list-style-type: none"> <li>● Indoor and outdoor air co-pollutants (PM2.5, NOx, SOx, Ozone)</li> <li>● Hazardous or radioactive waste</li> <li>● Transportation accidents</li> <li>● Occupational hazards</li> </ul>



Scale	Guidance
	<ul style="list-style-type: none"><li>• Extreme weather events</li></ul> <p><i>Strategies/actions <b>somewhat increase access</b> to resources that improve human physical and mental health, such as:</i></p> <ul style="list-style-type: none"><li>• Healthy food access and improved nutrition</li><li>• Increased options for safe physical activity</li><li>• Access to open space and nature</li></ul> <p><i>Strategies/actions result in a <b>modest net improvement</b> in health effects and health outcomes, such as rates of:</i></p> <ul style="list-style-type: none"><li>• Diseases: Asthma, cancer, cardiovascular disease, obesity, diabetes</li><li>• Unintentional injury or premature death</li><li>• Mental health and wellbeing</li><li>• Overall life expectancy</li></ul>
<b>Neutral</b>	<p><i>Strategies/actions result in <b>virtually no change in exposure</b> to contaminants or hazards that negatively affect human health, such as:</i></p> <ul style="list-style-type: none"><li>• Indoor and outdoor air co-pollutants (PM2.5, NOx, SOx, Ozone)</li><li>• Hazardous or radioactive waste</li><li>• Transportation accidents</li><li>• Occupational hazards</li><li>• Extreme weather events</li></ul> <p><i>Strategies/actions result in <b>no change in access</b> to resources that improve human physical and mental health, such as:</i></p> <ul style="list-style-type: none"><li>• Healthy food access and improved nutrition</li><li>• Increased options for safe physical activity</li><li>• Access to open space and nature</li></ul> <p><i>Strategies/actions result in <b>virtually no change</b> in health effects and health outcomes, such as rates of:</i></p> <ul style="list-style-type: none"><li>• Diseases: Asthma, cancer, cardiovascular disease, obesity, diabetes</li><li>• Unintentional injury or premature death</li><li>• Mental health and wellbeing</li><li>• Overall life expectancy</li></ul>
<b>Negative</b>	<p><i>Strategies/actions <b>somewhat increase exposure</b> to contaminants or hazards that negatively affect human health, such as:</i></p> <ul style="list-style-type: none"><li>• Indoor and outdoor air co-pollutants (PM2.5, NOx, SOx, Ozone)</li><li>• Hazardous or radioactive waste</li><li>• Transportation accidents</li><li>• Occupational hazards</li><li>• Extreme weather events</li></ul> <p><i>Strategies/actions <b>somewhat decrease access</b> to resources that improve human physical and mental health, such as:</i></p> <ul style="list-style-type: none"><li>• Healthy food access and improved nutrition</li><li>• Increased options for safe physical activity</li><li>• Access to open space and nature</li></ul> <p><i>Strategies/actions result in <b>modest net declines</b> in health effects and health outcomes, such as rates of:</i></p> <ul style="list-style-type: none"><li>• Diseases: Asthma, cancer, cardiovascular disease, obesity, diabetes</li><li>• Unintentional injury or premature death</li></ul>



Scale	Guidance
	<ul style="list-style-type: none"> <li>• Mental health and wellbeing</li> <li>• Overall life expectancy</li> </ul>
<b>Very Negative</b>	<p><i>Strategies/actions <b>significantly increase exposure</b> to contaminants or hazards that negatively affect human health, such as:</i></p> <ul style="list-style-type: none"> <li>• Indoor and outdoor air co-pollutants (PM2.5, NOx, SOx, Ozone)</li> <li>• Hazardous or radioactive waste</li> <li>• Transportation accidents</li> <li>• Occupational hazards</li> <li>• Extreme weather events</li> </ul> <p><i>Strategies/actions <b>significantly decrease access</b> to resources that improve human physical and mental health, such as:</i></p> <ul style="list-style-type: none"> <li>• Healthy food access and improved nutrition</li> <li>• Increased options for safe physical activity</li> <li>• Access to open space and nature</li> </ul> <p><i>Strategies/actions result in <b>significant net declines</b> in health effects and health outcomes, such as rates of:</i></p> <ul style="list-style-type: none"> <li>• Diseases: Asthma, cancer, cardiovascular disease, obesity, diabetes</li> <li>• Unintentional injury or premature death</li> <li>• Mental health and wellbeing</li> <li>• Overall life expectancy</li> </ul>

*Additional sources used as reference in developing this guidance:*

[Guidelines for Modeling and Reporting Health Effects of Climate Change Mitigation Actions](#)

## FO: Maximize preservation of cultural heritage

Evaluation criteria for this objective are given below (Table 7).

Table 7. Evaluation criteria for FO “Maximize preservation of cultural heritage”.

Scale	Guidance
<b>Very Positive</b>	<ul style="list-style-type: none"> <li>• Strategies/actions result in <b>significant overall benefit</b> to the preservation of tribal and indigenous lands and cultural sites</li> <li>• Strategies/actions result in <b>significant overall benefit</b> to the preservation of objects, structures, lands, and waters important to local and state cultural heritage</li> <li>• Strategies/actions <b>acknowledge, preserve, and celebrate</b> the tangible and intangible values and traditions of past generations in communities</li> <li>• Strategies/actions result in the <b>removal of infrastructure</b> such as pipelines that are <b>causing widespread and/or significant harm</b> to indigenous lands, sensitive habitat, and cultural artifacts.</li> </ul>
<b>Positive</b>	<ul style="list-style-type: none"> <li>• Strategies/actions result in <b>marginal overall benefit</b> to the preservation of tribal and indigenous lands and cultural sites</li> <li>• Strategies/actions result in <b>marginal overall benefit</b> to the preservation of objects, structures, lands, and waters important to local and state cultural heritage</li> </ul>



Scale	Guidance
<b>Neutral</b>	<ul style="list-style-type: none"><li>• Strategies/actions <b>acknowledge and preserve</b> the tangible and intangible values and traditions of past generations in communities</li><li>• Strategies/actions result in the <b>removal of infrastructure</b> such as pipelines that are <b>causing localized and/or limited harm</b> to indigenous lands, sensitive habitat, and cultural artifacts.</li></ul> <hr/> <ul style="list-style-type: none"><li>• Strategies/actions have <b>no impact</b> on the preservation of tribal and indigenous lands and cultural sites</li><li>• Strategies/actions have <b>no impact</b> on the preservation of objects, structures, lands, and waters important to local and state cultural heritage</li><li>• Strategies/actions have <b>no impact</b> on preserving the tangible and intangible values and traditions of past generations in communities</li><li>• Strategies/actions <b>neither add nor remove infrastructure</b> such as pipelines in areas that cause harm to indigenous lands, sensitive habitat, and cultural artifacts.</li></ul> <hr/>
<b>Negative</b>	<ul style="list-style-type: none"><li>• Strategies/actions <b>marginally harm</b> the preservation of tribal and indigenous lands and cultural sites</li><li>• Strategies/actions <b>marginally harm</b> the preservation of objects, structures, lands, and waters important to local and state cultural heritage</li><li>• Strategies/actions <b>marginally diminish</b> or detract from efforts to preserve the tangible and intangible values and traditions of past generations in communities</li><li>• Strategies/actions result in <b>new infrastructure</b> such as pipelines that <b>causes localized and/or limited harm</b> to indigenous lands, sensitive habitat, and cultural artifacts.</li></ul> <hr/>
<b>Very Negative</b>	<ul style="list-style-type: none"><li>• Strategies/actions <b>significantly harm</b> the preservation of tribal and indigenous lands and cultural sites</li><li>• Strategies/actions <b>significantly harm</b> the preservation of objects, structures, lands, and waters important to local and state cultural heritage</li><li>• Strategies/actions <b>significantly diminish</b> the tangible and intangible values and traditions of past generations in communities</li><li>• Strategies/actions result in <b>new infrastructure</b> such as pipelines that <b>causes widespread and/or significant harm</b> to indigenous lands, sensitive habitat, and cultural artifacts</li></ul>



## CATEGORY 2: CREATING A MORE EQUITABLE SOCIETY

### FO: Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes

Evaluation criteria for this objective are given below (Table 8).

Table 8. Evaluation criteria for FO “Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes”.

Scale	Guidance
<b>Very Positive</b>	<ul style="list-style-type: none"> <li>• <b>Benefits</b> of <b>many strategies/actions</b> (economic, quality of life, etc.) are <b>targeted</b> to historically underserved communities and communities most in need to reduce current disparities.</li> <li>• <b>Opportunities</b> associated with many strategies/actions are <b>broadly accessible</b> to households and businesses throughout the community—particularly communities of color, low-wealth communities, and minority and women owned businesses.</li> <li>• Strategies/actions <b>build community capacity</b> through funding, an expanded knowledge base, or other resources, and <b>cost of transition</b> is <b>minimal</b> or <b>fully mitigated</b> for historically underserved and low-wealth communities.</li> <li>• Strategies/actions result in <b>significant decreases in disparities</b> across socioeconomic, demographic, and geographic groups in long-term outcomes for <b>many</b> of the following indicators: <ul style="list-style-type: none"> <li>○ <i>Health outcomes</i>: physical health, mental health, life expectancy, mortality rates</li> <li>○ <i>Economic outcomes</i>: Employment rate, workforce participation, wages and incomes, business development, educational attainment</li> <li>○ <i>Environment</i>: Air pollution, water systems and water quality, access to open space and nature</li> <li>○ <i>Quality of life</i>: Housing cost burden, quality of housing, commute time, transportation costs</li> <li>○ <i>Cultural preservation</i>: preservation of cultural heritage, resources, and practices</li> <li>○ <i>Climate vulnerability</i>: exposure to hazards, ability to recover and adapt</li> </ul> </li> </ul>
<b>Positive</b>	<ul style="list-style-type: none"> <li>• <b>Benefits</b> of <b>some strategies/actions</b> (economic, quality of life, etc.) are <b>targeted</b> to historically underserved communities and communities most in need to reduce current disparities.</li> <li>• <b>Opportunities</b> associated with many strategies/actions are <b>mostly accessible</b> to households and businesses throughout the community—particularly communities of color, low-wealth communities, and minority and women owned businesses.</li> <li>• <b>Cost of transition</b> is <b>minimal</b> for historically underserved and low-wealth communities.</li> <li>• Strategies/actions result in <b>modest decreases in disparities</b> across socioeconomic, demographic, and geographic groups in long-term outcomes for <b>some</b> of the following indicators: <ul style="list-style-type: none"> <li>○ <i>Health outcomes</i>: physical health, mental health, life expectancy, mortality rates</li> <li>○ <i>Economic outcomes</i>: Employment rate, workforce participation, wages and incomes, business development, educational attainment</li> <li>○ <i>Environment</i>: Air pollution, water systems and water quality, access to open space and nature</li> <li>○ <i>Quality of life</i>: Housing cost burden, quality of housing, commute time, transportation costs</li> <li>○ <i>Cultural preservation</i>: preservation of cultural heritage, resources, and practices</li> <li>○ <i>Climate vulnerability</i>: exposure to hazards, ability to recover and adapt</li> </ul> </li> </ul>
<b>Neutral</b>	<ul style="list-style-type: none"> <li>• <b>Benefits</b> of strategies/actions (economic, quality of life, etc.) are <b>distributed</b> across segments of the community but are <b>not targeted</b> to historically underserved communities and communities most in need to reduce current disparities.</li> <li>• <b>Opportunities</b> associated with many strategies/actions are <b>equally accessible</b> to households and businesses throughout the community.</li> <li>• <b>Cost of transition</b> is <b>equal</b> for all segments of the community.</li> </ul>



Scale	Guidance
	<ul style="list-style-type: none"><li>• Strategies/actions result in <b>no impact to existing disparities</b> across socioeconomic, demographic, and geographic groups in long-term outcomes for the following indicators:<ul style="list-style-type: none"><li>○ <i>Health outcomes</i>: physical health, mental health, life expectancy, mortality rates</li><li>○ <i>Economic outcomes</i>: Employment rate, workforce participation, wages and incomes, business development, educational attainment</li><li>○ <i>Environment</i>: Air pollution, water systems and water quality, access to open space and nature</li><li>○ <i>Quality of life</i>: Housing cost burden, quality of housing, commute time, transportation costs</li><li>○ <i>Cultural preservation</i>: preservation of cultural heritage, resources, and practices</li><li>○ <i>Climate vulnerability</i>: exposure to hazards, ability to recover and adapt</li></ul></li></ul>
<b>Negative</b>	<ul style="list-style-type: none"><li>• <b>Benefits</b> (economic, quality of life, etc.) of <b>some strategies/actions</b> are <b>disproportionately beneficial to resource-rich communities and institutions</b>, widening current disparities.</li><li>• <b>Opportunities</b> associated with many strategies/actions are <b>somewhat inaccessible</b> to households and businesses throughout the community—particularly communities of color, low-wealth communities, and minority and women owned businesses.</li><li>• <b>Cost of transition</b> is <b>somewhat greater</b> for historically underserved and low-wealth communities.</li><li>• Strategies/actions result in <b>moderate increases in disparities</b> across socioeconomic, demographic, and geographic groups in long-term outcomes for <b>some</b> of the following indicators:<ul style="list-style-type: none"><li>○ <i>Health outcomes</i>: physical health, mental health, life expectancy, mortality rates</li><li>○ <i>Economic outcomes</i>: Employment rate, workforce participation, wages and incomes, business development, educational attainment</li><li>○ <i>Environment</i>: Air pollution, water systems and water quality, access to open space and nature</li><li>○ <i>Quality of life</i>: Housing cost burden, quality of housing, commute time, transportation costs</li><li>○ <i>Cultural preservation</i>: preservation of cultural heritage, resources, and practices</li><li>○ <i>Climate vulnerability</i>: exposure to hazards, ability to recover and adapt</li></ul></li></ul>
<b>Very Negative</b>	<ul style="list-style-type: none"><li>• <b>Benefits</b> (economic, quality of life, etc.) of <b>many strategies/actions</b> are <b>disproportionately beneficial to resource-rich communities and institutions</b>, widening current disparities.</li><li>• <b>Opportunities</b> associated with many strategies/actions are <b>inaccessible</b> to households and businesses throughout the community—particularly communities of color, low-wealth communities, and minority and women owned businesses.</li><li>• <b>Cost of transition</b> is <b>significantly greater</b> for historically underserved and low-wealth communities.</li><li>• Strategies/actions result in <b>significant increases in disparities</b> across socioeconomic, demographic, and geographic groups in long-term outcomes for <b>many</b> of the following indicators:<ul style="list-style-type: none"><li>○ <i>Health outcomes</i>: physical health, mental health, life expectancy, mortality rates</li><li>○ <i>Economic outcomes</i>: Employment rate, workforce participation, wages and incomes, business development, educational attainment</li><li>○ <i>Environment</i>: Air pollution, water systems and water quality, access to open space and nature</li><li>○ <i>Quality of life</i>: Housing cost burden, quality of housing, commute time, transportation costs</li><li>○ <i>Cultural preservation</i>: preservation of cultural heritage, resources, and practices</li><li>○ <i>Climate vulnerability</i>: exposure to hazards, ability to recover and adapt</li></ul></li></ul>



## FO: Maximize reduction and mitigation of historical and structural inequities and their impacts for underserved and marginalized communities, including communities of color and Indigenous peoples

Evaluation criteria for this objective are given below (Table 9).

Table 9. Evaluation criteria for FO “Maximize reduction and mitigation of historical and structural inequities and their impacts for underserved and marginalized communities, including communities of color and Indigenous peoples”.

Scale	Guidance
<b>Very Positive</b>	<ul style="list-style-type: none"><li>• Strategies/actions <b>acknowledge, account for, and repair</b> the legacy and current impacts of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in cumulative disadvantage or harm for marginalized groups, such as:<ul style="list-style-type: none"><li>○ <i>Environmental Injustice</i>: Policies and systems that have resulted in disproportionate exposure of “fenceline” communities of color and low-wealth communities to pollution and its effects on health and environment</li><li>○ <i>Discriminatory housing and land use practices</i>: Policies and systems, such as redlining, urban renewal, and exclusionary zoning that perpetuate patterns of racial segregation, neighborhood disinvestment, housing insecurity, and racial wealth gaps within communities</li><li>○ <i>Climate Exposure and Vulnerability</i>: Policies and systems that have placed “frontline” communities at disproportionate exposure and risk to climate impacts</li><li>○ <i>Resource Extraction and Environmental Degradation</i>: Policies and systems that have resulted in destruction of native habitats and ecosystems and left Indigenous lands vulnerable to increasing climate impacts</li></ul></li><li>• Strategies/actions result in <b>structural changes</b> in society and the state’s economy that redress extractive and exploitative systems and redistribute power and wealth more fairly.</li><li>• Strategies/actions account for and avoid the potential for <b>climate gentrification</b> and substantially reduce disparities that have occurred because of it in the past.</li><li>• Strategies/actions address the <b>interconnected impacts</b> of historical and current discrimination in land use, housing, transportation, access to health care and education.</li><li>• Strategies/actions incorporate <b>appropriate mechanisms of accountability</b>.</li><li>• Disproportionate impacts of <b>all</b> strategies/actions to historically marginalized communities and current or historical fenceline and frontline communities are <b>avoided</b> or <b>fully mitigated</b>.</li></ul>
<b>Positive</b>	<ul style="list-style-type: none"><li>• Strategies/actions <b>acknowledge and account for</b> the legacy and current impacts of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in cumulative disadvantage or harm for marginalized groups, such as:<ul style="list-style-type: none"><li>○ <i>Environmental Injustice</i>: Policies and systems that have resulted in disproportionate exposure of “fenceline” communities of color and low-wealth communities to pollution and its effects on health and environment</li><li>○ <i>Discriminatory housing and land use practices</i>: Policies and systems, such as redlining, urban renewal, and exclusionary zoning that perpetuate patterns of racial segregation, neighborhood disinvestment, housing insecurity, and racial wealth gaps within communities</li><li>○ <i>Climate Exposure and Vulnerability</i>: Policies and systems that have placed “frontline” communities at disproportionate exposure and risk to climate impacts</li><li>○ <i>Resource Extraction and Environmental Degradation</i>: Policies and systems that have resulted in destruction of native habitats and ecosystems and left Indigenous lands vulnerable to increasing climate impacts</li></ul></li><li>• Strategies/actions result in <b>minor reforms</b> in society and the state’s economy.</li><li>• Strategies/actions somewhat account for <b>climate gentrification</b> and reduce disparities that have occurred because of it in the past.</li></ul>



Scale	Guidance
	<ul style="list-style-type: none"><li>• Strategies/actions address <b>some but not all linked impacts</b> of historical and current discrimination in land use, housing, transportation, access to health care and education.</li><li>• Strategies/actions incorporate <b>minimal mechanisms of accountability</b>.</li><li>• Disproportionate impacts of <b>most</b> strategies/actions to historically marginalized communities and current or historical fenceline and frontline communities are <b>avoided</b> or <b>fully mitigated</b>.</li></ul>
<b>Neutral</b>	<ul style="list-style-type: none"><li>• Strategies/actions <b>acknowledge</b>, but do not account for or repair, the legacy and current impacts of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in cumulative disadvantage or harm for marginalized groups, such as:<ul style="list-style-type: none"><li>○ <i>Environmental Injustice</i>: Policies and systems that have resulted in disproportionate exposure of “fenceline” communities of color and low-wealth communities to pollution and its effects on health and environment</li><li>○ <i>Discriminatory housing and land use practices</i>: Policies and systems, such as redlining, urban renewal, and exclusionary zoning that perpetuate patterns of racial segregation, neighborhood disinvestment, housing insecurity, and racial wealth gaps within communities</li><li>○ <i>Climate Exposure and Vulnerability</i>: Policies and systems that have placed “frontline” communities at disproportionate exposure and risk to climate impacts</li><li>○ <i>Resource Extraction and Environmental Degradation</i>: Policies and systems that have resulted in destruction of native habitats and ecosystems and left Indigenous lands vulnerable to increasing climate impacts</li></ul></li><li>• Strategies/actions <b>acknowledge</b> extractive and exploitative economic and social systems but do nothing to change them.</li><li>• Strategies/actions account for and avoid the potential for <b>climate gentrification</b> while having neither a positive nor negative impact on disparities that have occurred because of it in the past.</li><li>• Strategies/actions <b>do not account for links between impacts</b> of historical and current discrimination in land use, housing, transportation, access to health care and education.</li><li>• Strategies/actions <b>acknowledge accountability is desired</b> but offer no mechanisms to implement.</li><li>• Disproportionate impacts of <b>some</b> strategies/actions to historically marginalized communities and current or historical fenceline and frontline communities are <b>somewhat mitigated</b>.</li></ul>
<b>Negative</b>	<ul style="list-style-type: none"><li>• Strategies/actions <b>ignore</b> the legacy and current impacts of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in cumulative disadvantage or harm for marginalized groups, such as:<ul style="list-style-type: none"><li>○ <i>Environmental Injustice</i>: Policies and systems that have resulted in disproportionate exposure of “fenceline” communities of color and low-wealth communities to pollution and its effects on health and environment</li><li>○ <i>Discriminatory housing and land use practices</i>: Policies and systems, such as redlining, urban renewal, and exclusionary zoning that perpetuate patterns of racial segregation, neighborhood disinvestment, housing insecurity, and racial wealth gaps within communities</li><li>○ <i>Climate Exposure and Vulnerability</i>: Policies and systems that have placed “frontline” communities at disproportionate exposure and risk to climate impacts</li><li>○ <i>Resource Extraction and Environmental Degradation</i>: Policies and systems that have resulted in destruction of native habitats and ecosystems and left Indigenous lands vulnerable to increasing climate impacts</li></ul></li><li>• Strategies/actions <b>maintain</b> extractive and exploitative economic and social systems.</li><li>• Strategies/actions have limited consideration of the potential for <b>climate gentrification</b> and/or somewhat exacerbate disparities that have occurred because of it in the past.</li></ul>





Scale	Guidance
	<ul style="list-style-type: none"> <li>Strategies/actions <b>somewhat intensify links between impacts</b> of historical and current discrimination in land use, housing, transportation, access to health care and education.</li> <li>Strategies/actions incorporate <b>no mechanisms of accountability</b>.</li> <li>Disproportionate impacts of <b>most</b> strategies/actions to historically marginalized communities and current or historical fenceline and frontline communities are <b>not mitigated</b>.</li> </ul>

<b>Very Negative</b>	<ul style="list-style-type: none"> <li>Strategies/actions <b>perpetuate</b> the legacy and current impacts of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in cumulative disadvantage or harm for marginalized groups, such as:               <ul style="list-style-type: none"> <li><i>Environmental Injustice:</i> Policies and systems that have resulted in disproportionate exposure of “fenceline” communities of color and low-wealth communities to pollution and its effects on health and environment</li> <li><i>Discriminatory housing and land use practices:</i> Policies and systems, such as redlining, urban renewal, and exclusionary zoning that perpetuate patterns of racial segregation, neighborhood disinvestment, housing insecurity, and racial wealth gaps within communities</li> <li><i>Climate Exposure and Vulnerability:</i> Policies and systems that have placed “frontline” communities at disproportionate exposure and risk to climate impacts</li> <li><i>Resource Extraction and Environmental Degradation:</i> Policies and systems that have resulted in destruction of native habitats and ecosystems and left Indigenous lands vulnerable to increasing climate impacts</li> </ul> </li> <li>Strategies/actions <b>maintain or advance</b> extractive and exploitative economic and social systems.</li> <li>Strategies/actions have do not consider the potential for <b>climate gentrification</b> and exacerbate disparities that have occurred because of it in the past.</li> <li>Strategies/actions <b>significantly intensify links between impacts</b> of historical and current discrimination in land use, housing, transportation, access to health care and education.</li> <li>Strategies/actions incorporate <b>no mechanisms of accountability</b> and <b>ignore community desires</b> for accountability.</li> <li>Disproportionate impacts of strategies/actions to historically marginalized communities and current or historical fenceline and frontline communities are <b>not mitigated</b>.</li> </ul>
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### FO: Maximize engagement with and participation of communities in decision-making and implementation

Evaluation criteria for this objective are given below (Table 10).

Table 10. Evaluation criteria for FO “Maximize engagement with and participation of communities in decision-making and implementation”.

Scale	Guidance
<b>Very Positive</b>	<p><i>Decision-making and implementation of strategies and actions include <b>all of the following:</b></i></p> <ul style="list-style-type: none"> <li><b>Meaningful engagement:</b> Strategies and actions engage and empower communities of color and low-income populations in a meaningful, authentic, and culturally appropriate manner           <ul style="list-style-type: none"> <li>Early and consistent engagement with affected communities</li> <li>Concerns of community members are taken seriously</li> <li>Varied meetings and broad community-wide outreach methods</li> </ul> </li> <li><b>Inclusive governance and decision-making:</b> Communities have an ability to participate in and influence decision making in the design and implementation of strategies</li> </ul>



- Community input on identifying and mitigating any adverse impact
  - Steering/Advisory committees composed of members of affected communities
  - **Traditional Ecological Knowledge:** Incorporate Indigenous and other traditional knowledge of local resources into analysis and implementation approaches
  - **Alignment and partnership:** Strategies/actions align with and support existing priorities of historically marginalized and affected communities, creating an opportunity to leverage resources and build collaborative partnerships
  - **Relationship building:** Strategies/actions help foster the building of effective, long-term relationships and trust between diverse communities, state and local government, and other institutions
  - **Economic opportunity:** Strategies/actions support communities of color and low-income populations through job training, apprenticeships, and contracting opportunities
- 

**Positive**

*Decision-making and implementation of strategies and actions include **some of the following:***

- **Meaningful engagement:** Strategies and actions engage and empower communities of color and low-income populations in a meaningful, authentic, and culturally appropriate manner
    - Early and consistent engagement with affected communities
    - Concerns of community members are taken seriously
    - Varied meetings and broad community-wide outreach methods
  - **Inclusive governance and decision-making:** Communities have an ability to participate in and influence decision making in the design and implementation of strategies
    - Community input on identifying and mitigating any adverse impact
    - Steering/Advisory committees composed of members of affected communities
  - **Traditional Ecological Knowledge:** Incorporate Indigenous and other traditional knowledge of local resources into analysis and implementation approaches
  - **Alignment and partnership:** Strategies/actions align with and support existing priorities of historically marginalized and affected communities, creating an opportunity to leverage resources and build collaborative partnerships
  - **Relationship building:** Strategies/actions help foster the building of effective, long-term relationships and trust between diverse communities, state and local government, and other institutions
  - **Economic opportunity:** Strategies/actions support communities of color and low-income populations through job training, apprenticeships, and contracting opportunities
- 

**Neutral**

*Decision-making and implementation of strategies and actions **superficially include a few of the following:***

- **Meaningful engagement:** Strategies and actions engage and empower communities of color and low-income populations in a meaningful, authentic, and culturally appropriate manner
  - Early and consistent engagement with affected communities
  - Concerns of community members are taken seriously
  - Varied meetings and broad community-wide outreach methods
- **Inclusive governance and decision-making:** Communities have an ability to participate in and influence decision making in the design and implementation of strategies
  - Community input on identifying and mitigating any adverse impact
  - Steering/Advisory committees composed of members of affected communities



- **Traditional Ecological Knowledge:** Incorporate Indigenous and other traditional knowledge of local resources into analysis and implementation approaches
  - **Alignment and partnership:** Strategies/actions align with and support existing priorities of historically marginalized and affected communities, creating an opportunity to leverage resources and build collaborative partnerships
  - **Relationship building:** Strategies/actions help foster the building of effective, long-term relationships and trust between diverse communities, state and local government, and other institutions
  - **Economic opportunity:** Strategies/actions support communities of color and low-income populations through job training, apprenticeships, and contracting opportunities
- 

**Negative**

*Decision-making and implementation of strategies and actions **actively ignore the following:***

- **Meaningful engagement:** Strategies and actions engage and empower communities of color and low-income populations in a meaningful, authentic, and culturally appropriate manner
    - Early and consistent engagement with affected communities
    - Concerns of community members are taken seriously
    - Varied meetings and broad community-wide outreach methods
  - **Inclusive governance and decision-making:** Communities have an ability to participate in and influence decision making in the design and implementation of strategies
    - Community input on identifying and mitigating any adverse impact
    - Steering/Advisory committees composed of members of affected communities
  - **Traditional Ecological Knowledge:** Incorporate Indigenous and other traditional knowledge of local resources into analysis and implementation approaches
  - **Alignment and partnership:** Strategies/actions align with and support existing priorities of historically marginalized and affected communities, creating an opportunity to leverage resources and build collaborative partnerships
  - **Relationship building:** Strategies/actions help foster the building of effective, long-term relationships and trust between diverse communities, state and local government, and other institutions
  - **Economic opportunity:** Strategies/actions support communities of color and low-income populations through job training, apprenticeships, and contracting opportunities
- 

**Very Negative**

***Community voices are suppressed, and decision-making and implementation of strategies and actions prohibit many of the following:***

- **Meaningful engagement:** Strategies and actions engage and empower communities of color and low-income populations in a meaningful, authentic, and culturally appropriate manner
  - Early and consistent engagement with affected communities
  - Concerns of community members are taken seriously
  - Varied meetings and broad community-wide outreach methods
- **Inclusive governance and decision-making:** Communities have an ability to participate in and influence decision making in the design and implementation of strategies
  - Community input on identifying and mitigating any adverse impact
  - Steering/Advisory committees composed of members of affected communities
- **Traditional Ecological Knowledge:** Incorporate Indigenous and other traditional knowledge of local resources into analysis and implementation approaches



- **Alignment and partnership:** Strategies/actions align with and support existing priorities of historically marginalized and affected communities, creating an opportunity to leverage resources and build collaborative partnerships
- **Relationship building:** Strategies/actions help foster the building of effective, long-term relationships and trust between diverse communities, state and local government, and other institutions
- **Economic opportunity:** Strategies/actions support communities of color and low-income populations through job training, apprenticeships, and contracting opportunities

*Additional sources used as reference in developing all criteria guidance in this category:*

- [Equity in Sustainability: An Equity Scan of Local Government Sustainability Programs](#)
- [Climate Action Through Equity: The integration of equity in the Portland/Multnomah County 2015 Climate Action Plan.](#)
- [National Equity Atlas](#). Policy Link
- [Equality Indicators](#). CUNY Institute for State and Local Governance
- [Community Guide to Environmental Justice and NEPA Methods](#).
- Equity Advisory Group presentation to the Louisiana Climate Initiatives Task Force. February 2021.

## CATEGORY 3: STRENGTHENING THE ECONOMY AND WORKFORCE

### FO: Maximize employment, economic opportunity, and support for Louisiana workers

Evaluation criteria for this objective are given below (Table 11).

Table 11. Evaluation criteria for FO “Maximize employment, economic opportunity, and support for Louisiana workers”.

Scale	Guidance
<b>Very Positive</b>	<p><i>Strategies/actions result in <b>large net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Number of new jobs created</li> <li>• Number of “low-carbon jobs” available to local workers transitioning from other industries or unemployment</li> <li>• Average wages across new jobs created</li> <li>• Training, educational, and credentialing programs available for, and geographically consistent with, new jobs created, and/or strategies and actions utilize existing skill sets in the Louisiana workforce</li> <li>• Jobs that can be conducted by a broad swath of the workforce, including people without college degrees</li> </ul>
<b>Positive</b>	<p><i>Strategies/actions result in <b>small to modest net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Number of new jobs created</li> <li>• Number of “low-carbon jobs” available to local workers transitioning from other industries or unemployment</li> <li>• Average wages across new jobs created</li> <li>• Training, educational, and credentialing programs available for, and geographically consistent with, new jobs created, and/or strategies and actions utilize existing skill sets in the Louisiana workforce</li> <li>• Jobs that can be conducted by a broad swath of the workforce, including people without college degrees</li> </ul>
<b>Neutral</b>	<p><i>Strategies/actions result in <b>virtually no net change</b> in:</i></p> <ul style="list-style-type: none"> <li>• Number of new jobs created</li> <li>• Number of “low-carbon jobs” available to local workers transitioning from other industries or unemployment</li> <li>• Average wages across new jobs created</li> <li>• Training, educational, and credentialing programs available for, and geographically consistent with, new jobs created, and/or strategies and actions utilize existing skill sets in the Louisiana workforce</li> <li>• Jobs that can be conducted by a broad swath of the workforce, including people without college degrees</li> </ul>
<b>Negative</b>	<p><i>Strategies/actions result in <b>small to modest net losses</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Number of new jobs created</li> <li>• Number of “low-carbon jobs” available to local workers transitioning from other industries or unemployment</li> </ul>



Scale	Guidance
	<ul style="list-style-type: none"> <li>• Average wages across new jobs created</li> <li>• Training, educational, and credentialing programs available for, and geographically consistent with, new jobs created, and/or strategies and actions utilize existing skill sets in the Louisiana workforce</li> <li>• Jobs that can be conducted by a broad swath of the workforce, including people without college degrees</li> </ul>
<b>Very Negative</b>	<p><i>Strategies/actions result in <b>large net losses</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Number of new jobs created</li> <li>• Number of “low-carbon jobs” available to local workers transitioning from other industries or unemployment</li> <li>• Average wages across new jobs created</li> <li>• Training, educational, and credentialing programs available for, and geographically consistent with, new jobs created, and/or strategies and actions utilize existing skill sets in the Louisiana workforce</li> <li>• Jobs that can be conducted by a broad swath of the workforce, including people without college degrees</li> </ul>

## FO: Maximize economic growth

Evaluation criteria for this objective are given below (Table 12).

Table 12. Evaluation criteria for FO “Maximize economic growth”.

Scale	Guidance
<b>Very Positive</b>	<p><i>Strategies/actions result in <b>large net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• State Gross Domestic Product (GDP)</li> <li>• Diversification of industry mix</li> </ul> <p><i>And/or <b>large net decreases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Reliance on tax incentives for industry growth and stability</li> <li>• Income inequality as measured by the Gini index</li> </ul> <p><i>And/or a <b>high likelihood of:</b></i></p> <ul style="list-style-type: none"> <li>• Improving state and municipal bond ratings and insurability</li> </ul>
<b>Positive</b>	<p><i>Strategies/actions result in <b>small to modest net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• State Gross Domestic Product (GDP)</li> <li>• Diversification of industry mix</li> </ul> <p><i>And/or <b>small to modest net decreases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Reliance on tax incentives for industry growth and stability</li> <li>• Income inequality as measured by the Gini index</li> </ul> <p><i>And/or a <b>small to modest likelihood of:</b></i></p> <ul style="list-style-type: none"> <li>• Stable or improving state and municipal bond ratings and insurability</li> </ul>
<b>Neutral</b>	<p><i>Strategies/actions result in <b>virtually no net change</b> in:</i></p> <ul style="list-style-type: none"> <li>• State Gross Domestic Product (GDP)</li> <li>• Industry mix</li> <li>• Reliance on tax incentives for industry growth and stability</li> <li>• State and municipal bond ratings and insurability</li> <li>• Income inequality as measured by the Gini index</li> </ul>
<b>Negative</b>	<p><i>Strategies/actions result in <b>small to modest net decreases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• State Gross Domestic Product (GDP)</li> <li>• Diversification of industry mix</li> </ul>



Scale	Guidance
	<p><i>And/or <b>small to modest net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Reliance on tax incentives for industry growth and stability</li> <li>• Income inequality as measured by the Gini index</li> </ul> <p><i>And/or a <b>small to modest likelihood</b> of:</i></p> <ul style="list-style-type: none"> <li>• Stable or declining state and municipal bond ratings and insurability</li> </ul>
<b>Very Negative</b>	<p><i>Strategies/actions result in <b>large net decreases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• State Gross Domestic Product (GDP)</li> <li>• Diversification of industry mix</li> </ul> <p><i>And/or <b>large net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Reliance on tax incentives for industry growth and stability</li> <li>• Income inequality as measured by the Gini index</li> </ul> <p><i>And/or a <b>high likelihood</b> of:</i></p> <ul style="list-style-type: none"> <li>• Declining state and municipal bond ratings and insurability</li> </ul>

## CATEGORY 4: MANAGING FOR SHORT- AND LONG-TERM SUCCESS

### FO: Maximize confidence of the public and stakeholders in the outcome of emissions-reduction strategies to increase support for their implementation

Evaluation criteria for this objective are given below (Table 13).

Table 13. Evaluation criteria for FO “Maximize confidence of the public and stakeholders in the outcome of emissions-reduction strategies to increase support for their implementation”.

Scale	Guidance
<b>Very Positive</b>	<ul style="list-style-type: none"> <li>• <b>Most members of the public and stakeholders (&gt;80%)</b> are already familiar with and support the strategies and actions as proposed</li> <li>• <b>Frequent, varied</b> (targeted to reach different communities), and meaningful opportunities for stakeholder engagement on the implementation and refinement of GHG reduction strategies/actions, including production of online and printed updates with plain language summaries and published in languages that are commonly spoken in Louisiana</li> <li>• <b>Very high diversity of engagement opportunities</b> to reach different stakeholders, such as public forums, targeted engagement of industry, etc.</li> <li>• <b>Numerous and varied outreach materials</b> are produced that include plain language summaries and are published in languages commonly spoken in Louisiana</li> <li>• <b>Inclusion of comprehensive plan</b> for increasing information-sharing by non-state entities (local government, industry, scientific non-profits, academia, etc.)</li> <li>• <b>Prescribed process</b> for updating net zero GHG emissions strategies and actions that includes detail on how impacts to people, the economy, and the environment will continue to be evaluated</li> </ul>
<b>Positive</b>	<ul style="list-style-type: none"> <li>• <b>Many members of the public and stakeholders (60-80%)</b> are already familiar with and support the strategies and actions as proposed</li> <li>• <b>Regular, somewhat varied</b> (targeted to reach different communities), and meaningful opportunities for stakeholder engagement on the implementation and continued refinement of GHG reduction strategies/actions, including production of online and printed updates with plain language summaries and published in languages that are commonly spoken in Louisiana</li> <li>• <b>Some diversity of engagement opportunities</b> to reach different stakeholders, such as public forums, targeted engagement of industry, etc.</li> <li>• <b>Regular and somewhat varied outreach materials</b> are produced that include plain language summaries and are published in languages commonly spoken in Louisiana</li> </ul>



Scale	Guidance
	<ul style="list-style-type: none"> <li>• <b>Some targeted strategies/actions</b> to increase information-sharing by non-state entities to address specific high-priority opportunities (local government, industry, scientific non-profits, academia, etc.)</li> <li>• <b>Process for updating</b> net zero GHG emissions strategies and actions is given, with guidance on continuing to consider impacts to people, the economy, and the environment</li> </ul>
<b>Neutral</b>	<ul style="list-style-type: none"> <li>• <b>Some members of the public and stakeholders (40-60%) are already familiar</b> with and support the strategies and actions as proposed</li> <li>• Continued engagement of the public and stakeholders is <b>primarily for informational purposes only</b> (updating on ongoing implementation vs. providing opportunities for continued active engagement in refinement)</li> <li>• <b>Occasional</b> production and updating of online and printed updates on net GHG reduction progress with plain language summaries</li> <li>• <b>Few clear or targeted strategies/actions</b> for facilitating information-sharing by non-state entities (local government, industry, scientific non-profits, academia, etc.)</li> <li>• There is <b>no specific process</b> prescribed for updating net zero GHG emissions strategies and actions, but guidance is given to consider impacts to people, the economy, and the environment</li> </ul>
<b>Negative</b>	<ul style="list-style-type: none"> <li>• <b>Few members of the public and stakeholders (20-40%)</b> are already familiar with and support the strategies and actions as proposed</li> <li>• Continued engagement of the public and stakeholders is <b>exclusively for informational purposes only</b> (updating on ongoing implementation, not providing opportunities for continued active engagement in refinement)</li> <li>• <b>Limited production</b> of online or printed updates on net GHG reduction progression that is accessible and understandable to the public; information sharing is sporadic/ad-hoc, primarily technical in nature, and/or targeted at a limited audience</li> <li>• <b>Limited number of strategies or actions for supporting or encouraging information sharing</b> by non-state entities (local government, industry, scientific non-profits, academia, etc.)</li> <li>• There is <b>no specific process</b> prescribed for updating net zero GHG emissions strategies and actions, and <b>limited reference</b> is made to future consideration of impacts to people, the economy, and the environment</li> </ul>
<b>Very Negative</b>	<ul style="list-style-type: none"> <li>• <b>Almost no members of the public and stakeholders (&lt;20%) are already familiar</b> with and support the strategies and actions as proposed</li> <li>• <b>No engagement of the public or other stakeholders</b> in continued implementation or refinement of the net GHG emission reduction plan</li> <li>• <b>No educational outreach</b> to the public or stakeholders</li> <li>• <b>No strategies or actions for supporting or encouraging information sharing</b> by non-state entities (local government, industry, scientific non-profits, academia, etc.)</li> <li>• There is <b>no specific process</b> prescribed for updating net zero GHG emissions strategies and actions, and <b>no reference</b> is made to future consideration of impacts to people, the economy, and the environment</li> </ul>

## FO: Maximize the efficiency and effectiveness of emissions-reduction strategies

Evaluation criteria for this objective are given below (Table 14).

Table 14. Evaluation criteria for FO “Maximize the efficiency and effectiveness of emissions-reduction strategies”.

Scale	Guidance
<b>Very Positive</b>	<p><b>Most (&gt;80%) strategies/actions include:</b></p> <ul style="list-style-type: none"> <li>• Defined legal requirements for monitoring and reporting</li> <li>• Clear lines of responsibility within state government and avoidance of known problems in efficient and effective policy implementation</li> <li>• Precedence within the state of Louisiana or elsewhere supporting their feasibility and/or effectiveness</li> <li>• Clear and executable implementation pathways (regulatory, legislative, etc.) and reliance on existing technology that is ready to be deployed at scale</li> <li>• Defined mechanisms for interagency coordination, where necessary, and awareness and buy-in from all entities on their responsibilities</li> </ul>



Scale	Guidance
	<p><i>And are:</i></p> <ul style="list-style-type: none"><li>• Fully consistent with existing policies and laws</li><li>• Fully consistent with existing climate adaptation strategies (e.g., the Coastal Master Plan)</li></ul> <p><i>In addition, the strategies/actions in this portfolio are <b>sequenced appropriately</b> so that short term strategies/actions maximize the effectiveness of long-term strategies/actions</i></p>
<b>Positive</b>	<p><b>Many (60-80%) of strategies/actions include:</b></p> <ul style="list-style-type: none"><li>• Defined legal requirements for monitoring and reporting</li><li>• Clear lines of responsibility within state government and avoidance of known problems in efficient and effective policy implementation</li><li>• Precedence within the state of Louisiana or elsewhere supporting their feasibility and/or effectiveness</li><li>• Clear and executable implementation pathways (regulatory, legislative, etc.) and reliance on existing technology that is ready to be deployed at scale</li><li>• Defined mechanisms for interagency coordination, where necessary, and awareness and buy-in from all entities on their responsibilities</li></ul> <p><i>And are:</i></p> <ul style="list-style-type: none"><li>• Somewhat consistent with existing policies and laws</li><li>• Somewhat consistent with existing climate adaptation strategies (e.g., the Coastal Master Plan)</li><li>• Reliant on existing technology that is ready to be deployed now.</li></ul> <p><i>In addition, the set of strategies/actions includes <b>some consideration of sequencing</b> so that short term strategies/actions improve the effectiveness of long-term strategies/actions</i></p>
<b>Neutral</b>	<p><b>Some strategies/actions (40-60%) include:</b></p> <ul style="list-style-type: none"><li>• Defined legal requirements for monitoring and reporting</li><li>• Clear lines of responsibility within state government and avoidance of known problems in efficient and effective policy implementation</li><li>• Precedence within the state of Louisiana or elsewhere supporting their feasibility and/or effectiveness</li><li>• Clear and executable implementation pathways (regulatory, legislative, etc.) and reliance on existing technology that is ready to be deployed at scale</li><li>• Defined mechanisms for interagency coordination, where necessary, and awareness and buy-in from all entities on their responsibilities</li></ul> <p><i>And are:</i></p> <ul style="list-style-type: none"><li>• Consistent with existing policies and laws (some strategies are, some are not)</li><li>• Consistent with existing climate adaptation strategies (e.g., the Coastal Master Plan) (some strategies are, some are not)</li></ul> <p><i>There is <b>no explicit consideration of sequencing of actions</b>, but there are near- and long-term actions identified</i></p>
<b>Negative</b>	<p><b>Few strategies/actions (20-40%) include:</b></p> <ul style="list-style-type: none"><li>• Defined legal requirements for monitoring and reporting</li><li>• Clear lines of responsibility within state government and avoidance of known problems in efficient and effective policy implementation</li><li>• Precedence within the state of Louisiana or elsewhere supporting their feasibility and/or effectiveness</li><li>• Clear and executable implementation pathways (regulatory, legislative, etc.) and reliance on existing technology that is ready to be deployed at scale</li><li>• Defined mechanisms for interagency coordination, where necessary, and awareness and buy-in from all entities on their responsibilities</li></ul> <p><i>And are:</i></p> <ul style="list-style-type: none"><li>• Somewhat inconsistent with existing policies and laws</li></ul>





Scale	Guidance
	<ul style="list-style-type: none"> <li>Somewhat inconsistent with existing climate adaptation strategies (e.g., the Coastal Master Plan)</li> </ul> <p><i>There is <b>no explicit consideration of sequencing of actions</b> and actions are generally <b>focused</b> in either the short- or long term</i></p>
<b>Very Negative</b>	<p><b>Almost none (0-20%) of the strategies/actions include:</b></p> <ul style="list-style-type: none"> <li>Defined legal requirements for monitoring and reporting</li> <li>Clear lines of responsibility within state government and avoidance of known problems in efficient and effective policy implementation</li> <li>Precedence within the state of Louisiana or elsewhere supporting their feasibility and/or effectiveness</li> <li>Clear and executable implementation pathways (regulatory, legislative, etc.) and reliance on existing technology that is ready to be deployed at scale</li> <li>Defined mechanisms for interagency coordination, where necessary, and awareness and buy-in from all entities on their responsibilities</li> </ul> <p><i>And are:</i></p> <ul style="list-style-type: none"> <li>Inconsistent with existing policies and laws</li> <li>Inconsistent with existing climate adaptation strategies (e.g., the Coastal Master Plan)</li> </ul> <p><i>There is <b>no consideration of short- vs. long-term implementation</b> of actions or strategies</i></p>

## FO: Maximize timely implementation of emissions-reduction strategies

Evaluation criteria for this objective are given below (Table 15).

Table 15. Evaluation criteria for FO “Maximize timely implementation of emissions-reduction strategies”.

Scale	Guidance
<b>Very Positive</b>	<p><b>Most of the net GHG emission reduction strategies/actions (80-100%):</b></p> <ul style="list-style-type: none"> <li>Can be conducted predominantly at the state level without requiring independent or coordinated federal or local action</li> <li>Have low potential for federal preemption</li> <li>Have a clear timeline and begin to phase in within the first five years</li> <li>Protect individual rights and have low potential to result in tort lawsuits that could slow or halt their successful implementation</li> <li>Have limited potential negative impacts to the environment or endangered/threatened species that would require National Environmental Policy Act (NEPA) review</li> <li>Have existing, available funding sources identified at the state or federal level</li> </ul>
<b>Positive</b>	<p><b>Many of the net GHG emission reduction strategies/actions (60-80%):</b></p> <ul style="list-style-type: none"> <li>Have a clear timeline and begin to phase in within the first five years</li> <li>Can be conducted predominantly at the state level without requiring independent or coordinated federal or local action</li> <li>Have low potential for federal preemption</li> <li>Protect individual rights and have low potential to result in tort lawsuits that could slow or halt their successful implementation</li> <li>Have limited potential negative impacts to the environment or endangered/threatened species that would require National Environmental Policy Act (NEPA) review</li> <li>Have existing, available funding sources identified at the state or federal level</li> </ul>
<b>Neutral</b>	<p><b>Some of the net GHG emission reduction strategies/actions (40-60%):</b></p> <ul style="list-style-type: none"> <li>Have a clear timeline and begin to phase in within the first five years</li> <li>Can be conducted predominantly at the state level without requiring independent or coordinated federal or local action</li> <li>Have low potential for federal preemption</li> <li>Protect individual rights and have low potential to result in tort lawsuits that could slow or halt their successful implementation</li> </ul>



Scale	Guidance
	<ul style="list-style-type: none"> <li>• Have limited potential negative impacts to the environment or endangered/threatened species that would require National Environmental Policy Act (NEPA) review</li> <li>• Have existing, available funding sources identified at the state or federal level</li> </ul>
<b>Negative</b>	<p><b>Few of the net GHG emission reduction strategies/actions (20-40%):</b></p> <ul style="list-style-type: none"> <li>• Have a clear timeline and begin to phase in within the first five years</li> <li>• Can be conducted predominantly at the state level without requiring independent or coordinated federal or local action</li> <li>• Have low potential for federal preemption</li> <li>• Protect individual rights and have low potential to result in tort lawsuits that could slow or halt their successful implementation</li> <li>• Have limited potential negative impacts to the environment or endangered/threatened species that would require National Environmental Policy Act (NEPA) review</li> <li>• Have existing, available funding sources identified at the state or federal level</li> </ul>
<b>Very Negative</b>	<p><b>Very few or none of the net GHG emission reduction strategies/actions (0-20%):</b></p> <ul style="list-style-type: none"> <li>• Have a clear timeline and begin to phase in within the first five years</li> <li>• Can be conducted predominantly at the state level without requiring independent or coordinated federal or local action</li> <li>• Have low potential for federal preemption</li> <li>• Protect individual rights and have low potential to result in tort lawsuits that could slow or halt their successful implementation</li> <li>• Have limited potential negative impacts to the environment or endangered/threatened species that would require National Environmental Policy Act (NEPA) review</li> <li>• Have existing, available funding sources identified at the state or federal level</li> </ul>

## FO: Maximize the durability of emissions-reduction strategies in an uncertain future

Evaluation criteria for this objective are given below (Table 16).

Table 16. Evaluation criteria for FO “Maximize the durability of emissions-reduction strategies in an uncertain future”.

Scale	Guidance
<b>Very Positive</b>	<p><b>Most of the net GHG emission reduction strategies/actions (80-100%):</b></p> <ul style="list-style-type: none"> <li>• Identify relevant emerging GHG reduction technologies where applicable and, if necessary, enable future utilization</li> <li>• Have limited legal and policy uncertainties related to future implementation</li> <li>• Are robust and durable against foreseeable threats outside of state control (underlying technology is robust against storms, etc.)</li> </ul> <p><i>In addition, the portfolio includes a <b>clear and defined process</b> for future updates that:</i></p> <ul style="list-style-type: none"> <li>• Outlines a specific timeline for regular revisiting and updating the net GHG emission reduction strategies</li> <li>• Provides a defined pathway for gathering critical information and data needs to assess the effectiveness of strategies/actions as they are implemented (i.e., data needs and entities to gather that information are identified)</li> <li>• Links updates to the net GHG reduction plan to achieving (or failing to achieve) defined thresholds of strategy/action effectiveness (i.e., adaptive management)</li> <li>• Includes a complete plan for regular evaluation and incorporation of best available science and data that becomes available</li> <li>• Incorporates specific approaches for revisiting, refining, or replacing strategies and actions based on effectiveness and/or changes in cost, legal requirements, national or state policy, etc.</li> </ul>
<b>Positive</b>	<p><b>Many of the net GHG emission reduction strategies/actions (60-80%):</b></p> <ul style="list-style-type: none"> <li>• Identify relevant emerging GHG reduction technologies where applicable and, if necessary, enable future utilization</li> <li>• Have limited legal and policy uncertainties related to future implementation</li> <li>• Are robust and durable against foreseeable threats outside of state control (underlying technology is robust against storms, etc.)</li> </ul>



Scale	Guidance
	<p><i>In addition, the portfolio includes a <b>process</b> for future updates that:</i></p> <ul style="list-style-type: none"><li>• Outlines criteria and methods for revisiting and updating the net GHG emission reduction strategies</li><li>• Includes prescribed gathering of information and data to assess the effectiveness of strategies/actions as they are implemented</li><li>• Links updates to the net GHG reduction plan to strategy/action effectiveness (i.e., adaptive management)</li><li>• Includes mechanisms for evaluation and incorporation of best available science and data as it becomes available</li><li>• Incorporates mechanisms for revisiting, refining, or replacing strategies and actions based on effectiveness and/or changes in cost, legal requirements, national or state policy, etc.</li></ul>
<b>Neutral</b>	<p><b>Some of the net GHG emission reduction strategies/actions (40-60%):</b></p> <ul style="list-style-type: none"><li>• Identify relevant emerging GHG reduction technologies where applicable and, if necessary, enable future utilization</li><li>• Have limited legal and policy uncertainties related to future implementation</li><li>• Are robust and durable against foreseeable threats outside of state control (underlying technology is robust against storms, etc.)</li></ul> <p><i>The portfolio also <b>includes</b>:</i></p> <ul style="list-style-type: none"><li>• Methods for revisiting and updating the net GHG emission reduction strategies</li><li>• Recommendations for information and data gathering to assess the effectiveness of strategies/actions as they are implemented</li><li>• Recommendations for linking updates to the net GHG reduction plan to strategy/action effectiveness (i.e., adaptive management)</li><li>• Recommendations for evaluation and incorporation of best available science and data as it becomes available</li><li>• Recommendations for revisiting, refining, or replacing strategies and actions based on effectiveness and/or changes in cost, legal requirements, national or state policy, etc.</li></ul>
<b>Negative</b>	<p><b>Few of the net GHG emission reduction strategies/actions (20-40%):</b></p> <ul style="list-style-type: none"><li>• Identify relevant emerging GHG reduction technologies where applicable and, if necessary, enable future utilization</li><li>• Have limited legal and policy uncertainties related to future implementation</li><li>• Are robust and durable against foreseeable threats outside of state control (underlying technology is robust against storms, etc.)</li></ul> <p><i>The portfolio has <b>limited consideration</b> of:</i></p> <ul style="list-style-type: none"><li>• Methods for revisiting and updating the net GHG emission reduction strategies based on effectiveness</li><li>• Data or information that would be needed to evaluate strategy/action effectiveness</li><li>• Mechanisms for evaluating and incorporating best available science and data as it becomes available</li></ul>
<b>Very Negative</b>	<p><b>Few or none of the net GHG emission reduction strategies/actions (0-20%):</b></p> <ul style="list-style-type: none"><li>• Identify relevant emerging GHG reduction technologies where applicable and, if necessary, enable future utilization</li><li>• Have limited legal and policy uncertainties related to future implementation</li><li>• Are robust and durable against foreseeable threats outside of state control (underlying technology is robust against storms, etc.)</li></ul> <p><i>The portfolio <b>does not include mechanisms</b> for evaluating strategy effectiveness, collection of data or information that support that evaluation, or considerations for updates based on scientific or technological advancements.</i></p>



## CATEGORY 5: CONSERVING NATURAL RESOURCES AND PROTECTING THE ENVIRONMENT

### FO: Maximize preservation of natural resources and ecosystem services

Evaluation criteria for this objective are given below (Table 17).

Table 17. Evaluation criteria for FO “Maximize preservation of natural resources and ecosystem services”.

Scale	Guidance
<b>Very Positive</b>	<p><i>Strategies/actions result in <b>large net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Overall net productivity of commercial and recreational fisheries</li> <li>• Acreage and/or productivity of habitat supporting key food webs</li> <li>• Acreage of wetlands, mangroves, barrier islands, and other coastal ecosystems that mitigate storm impacts</li> <li>• Acreage of natural areas available for birding, hunting, camping, and other outdoor activities</li> </ul>
<b>Positive</b>	<p><i>Strategies/actions result in <b>small to modest net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Overall net productivity of commercial and recreational fisheries.</li> <li>• Acreage and/or productivity of habitat supporting key food webs.</li> <li>• Acreage of wetlands, mangroves, barrier islands, and other coastal ecosystems that mitigate storm impacts.</li> <li>• Acreage of natural areas available for birding, hunting, camping, and other outdoor activities</li> </ul>
<b>Neutral</b>	<p><i>Strategies/actions result in <b>virtually no net change</b> in:</i></p> <ul style="list-style-type: none"> <li>• Overall net productivity of commercial and recreational fisheries.</li> <li>• Acreage and/or productivity of habitat supporting key food webs.</li> <li>• Acreage of wetlands, mangroves, barrier islands, and other coastal ecosystems that mitigate storm impacts.</li> <li>• Acreage of natural areas available for birding, hunting, camping, and other outdoor activities</li> </ul>
<b>Negative</b>	<p><i>Strategies/actions result in <b>small to modest net losses</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Overall net productivity of commercial and recreational fisheries.</li> <li>• Acreage and/or productivity of habitat supporting key food webs.</li> <li>• Acreage of wetlands, mangroves, barrier islands, and other coastal ecosystems that mitigate storm impacts.</li> <li>• Acreage of natural areas available for birding, hunting, camping, and other outdoor activities</li> </ul>
<b>Very Negative</b>	<p><i>Strategies/actions result in <b>large net losses</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Overall net productivity of commercial and recreational fisheries.</li> <li>• Acreage and/or productivity of habitat supporting key food webs.</li> <li>• Acreage of wetlands, mangroves, barrier islands, and other coastal ecosystems that mitigate storm impacts.</li> <li>• Acreage of natural areas available for birding, hunting, camping, and other outdoor activities</li> </ul>

### FO: Maximize environmental stewardship and support of healthy ecosystems

Evaluation criteria for this objective are given below (Table 18).

Table 18. Evaluation criteria for FO “Maximize environmental stewardship and support of healthy ecosystems”.

Scale	Guidance
<b>Very Positive</b>	<p><i>Strategies/actions result in <b>large net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"> <li>• Acreage of native Louisiana ecosystems including wetlands, forests, prairie grasslands, and others.</li> <li>• Acreage of critical habitat that supports threatened or endangered species</li> <li>• Habitat connectivity and wildlife corridors</li> <li>• Health and resilience of intact native ecosystems</li> </ul> <p><i>And/or <b>large net decreases</b> in one or more of:</i></p>



Scale	Guidance
	<ul style="list-style-type: none"><li>• Presence of invasive plant or animal species</li><li>• Squeeze or threat from anthropogenic development</li><li>• Excessive nutrient loading and/or eutrophication</li></ul>
<b>Positive</b>	<p><i>Strategies/actions result in <b>small to modest net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>• Acreage of native Louisiana ecosystems including wetlands, forests, prairie grasslands, and others.</li><li>• Acreage of critical habitat that supports threatened or endangered species</li><li>• Habitat connectivity and wildlife corridors</li><li>• Health and resilience of intact native ecosystems</li></ul> <p><i>And/or <b>small to modest net decreases</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>• Presence of invasive plant or animal species</li><li>• Squeeze or threat from anthropogenic development</li><li>• Excessive nutrient loading and/or eutrophication</li></ul>
<b>Neutral</b>	<p><i>Strategies/actions result in <b>virtually no net change</b> in:</i></p> <ul style="list-style-type: none"><li>• Acreage of native Louisiana ecosystems including wetlands, forests, prairie grasslands, and others.</li><li>• Acreage of critical habitat that supports threatened or endangered species</li><li>• Habitat connectivity and wildlife corridors</li><li>• Health and resilience of intact native ecosystems</li><li>• Presence of invasive plant or animal species</li><li>• Squeeze or threat from anthropogenic development</li><li>• Excessive nutrient loading and/or eutrophication</li></ul>
<b>Negative</b>	<p><i>Strategies/actions result in <b>small to modest net decreases</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>• Acreage of native Louisiana ecosystems including wetlands, forests, prairie grasslands, and others.</li><li>• Acreage of critical habitat that supports threatened or endangered species</li><li>• Habitat connectivity and wildlife corridors</li><li>• Health and resilience of intact native ecosystems</li></ul> <p><i>And/or <b>small to modest increases</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>• Presence of invasive plant or animal species</li><li>• Squeeze or threat from anthropogenic development</li><li>• Excessive nutrient loading and/or eutrophication</li></ul>
<b>Very Negative</b>	<p><i>Strategies/actions result in <b>large net decreases</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>• Acreage of native Louisiana ecosystems including wetlands, forests, prairie grasslands, and others.</li><li>• Acreage of critical habitat that supports threatened or endangered species</li><li>• Habitat connectivity and wildlife corridors</li><li>• Health and resilience of intact native ecosystems</li></ul> <p><i>And/or <b>large net increases</b> in one or more of:</i></p> <ul style="list-style-type: none"><li>• Presence of invasive plant or animal species</li><li>• Squeeze or threat from anthropogenic development</li><li>• Excessive nutrient loading and/or eutrophication</li></ul>



## CATEGORY 6: ADAPTING TO A CHANGING CLIMATE

**Note:** Potential climate change effects include rising temperatures and precipitation; increases in storm/hurricane frequency and intensity; relative sea level rise; and ocean acidification

### FO: Increase resilience of the built and natural environment to climate change impacts

Evaluation criteria for this objective are given below (Table 19).

Table 19. Evaluation criteria for FO “Increase resilience of the built and natural environment to climate change impacts”.

Scale	Guidance
<b>Very Positive</b>	<p><b>Most (&gt;80%)</b> of the net Greenhouse Gas (GHG) emissions reduction strategies/actions <b>maintain or improve the overall resilience</b> of the built or natural environment. In addition, strategies/actions are fully consistent and integrated with existing or planned climate adaptation programs as part of a complete and holistic approach to improve the resilience of <b>the built and natural environment</b>, including:</p> <ul style="list-style-type: none"> <li>Climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts on the natural and built environment (coastal land loss, increased urban temperatures/heat islands, impacts to agricultural crops, etc.) are identified and mitigated through design or other implementation measures</li> <li>Operability of critical built infrastructure (power transmission lines, roads, etc.) is enhanced in spite of climate impacts</li> <li>Safeguards to ensure natural habitat and species that are vulnerable to climate change have adaptation space (for example, coastal habitats have space to accommodate migration)</li> <li>Consistency with existing conservation and restoration plans to mitigate climate-related increase loss of vulnerable habitat, such as marshes and barrier islands</li> <li>Strategies/actions that support durable and natural resiliency, such as coastal wetlands that act as hurricane buffers</li> </ul>
<b>Positive</b>	<p><b>Many (60-80%)</b> of the net Greenhouse Gas (GHG) emissions reduction strategies/actions <b>maintain or improve the overall resilience</b> of the built or natural environment. In addition, strategies/actions are consistent with existing or planned climate adaptation programs as part of improving the resilience of <b>the built and natural environment</b>, including:</p> <ul style="list-style-type: none"> <li>Climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts on the natural and built environment (coastal land loss, increased urban temperatures/heat islands, impacts to agricultural crops, etc.) are identified and mitigated through design or other implementation measures</li> <li>Operability of critical built infrastructure (power transmission lines, roads, etc.) is enhanced in spite of climate impacts.</li> <li>Safeguards to ensure natural habitat and species that are vulnerable to climate change have adaptation space (for example, coastal habitats have space to accommodate migration)</li> <li>Consistency with existing conservation and restoration plans to mitigate climate-related increase loss of vulnerable habitat, such as marshes and barrier islands</li> <li>Strategies/actions that support durable and natural resiliency, such as coastal wetlands that act as hurricane buffers</li> </ul>
<b>Neutral</b>	<p><b>Some (40-60%)</b> of the net Greenhouse Gas (GHG) emissions reduction strategies/actions <b>maintain or improve the overall resilience</b> of the built or natural environment. In addition, strategies/actions have some consistency with existing or planned climate adaptation programs as part of maintaining the resilience of <b>the built and natural environment</b>, including:</p> <ul style="list-style-type: none"> <li>Climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts on the natural and built environment (coastal land loss, increased urban temperatures/heat islands, impacts to agricultural crops, etc.) are identified and mitigated through design or other implementation measures.</li> <li>Operability of critical built infrastructure (power transmission lines, roads, etc.) is enhanced in spite of climate impacts.</li> </ul>



Scale	Guidance
	<ul style="list-style-type: none"> <li>• Safeguards to ensure natural habitat and species that are vulnerable to climate change have adaptation space (for example, coastal habitats have space to accommodate migration)</li> <li>• Consistency with existing conservation and restoration plans to mitigate climate-related increase loss of vulnerable habitat, such as marshes and barrier islands</li> <li>• Strategies/actions that support durable and natural resiliency, such as coastal wetlands that act as hurricane buffers</li> </ul>
<b>Negative</b>	<p><b>Few (20-40%) of the net Greenhouse Gas (GHG) emissions reduction strategies/actions maintain or improve the overall resilience of the built or natural environment. Strategies/actions do not consider existing or planned climate adaptation programs as part of maintaining the resilience of the built and natural environment, with limited:</b></p> <ul style="list-style-type: none"> <li>• Climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts on the natural and built environment (coastal land loss, increased urban temperatures/heat islands, impacts to agricultural crops, etc.) are identified and mitigated through design or other implementation measures.</li> <li>• Operability of critical built infrastructure (power transmission lines, roads, etc.) is enhanced in spite of climate impacts</li> <li>• Safeguards to ensure natural habitat and species that are vulnerable to climate change have adaptation space (for example, coastal habitats have space to accommodate migration)</li> <li>• Consistency with existing conservation and restoration plans to mitigate climate-related increase loss of vulnerable habitat, such as marshes and barrier islands</li> <li>• Strategies/actions that support durable and natural resiliency, such as coastal wetlands that act as hurricane buffers</li> </ul>
<b>Very Negative</b>	<p><b>Few (&lt; 20%) of the net Greenhouse Gas (GHG) emissions reduction strategies/actions maintain or improve the overall resilience of the built and natural environment. Some strategies/actions increase damages to or operability of infrastructure and facilities during climate-related events, or enhance the destruction of habitats and species.</b></p> <p><i>In addition, strategies/actions include:</i></p> <ul style="list-style-type: none"> <li>• <b>Limited or no consideration</b> of climate change adaptation needs for the built of natural environment.</li> <li>• <b>Limited or no integration</b> with existing climate adaptation initiatives, plans, and strategies.</li> <li>• <b>No consideration of enhancement of durable and natural resiliency</b>, such as coastal wetlands that act as hurricane buffers</li> </ul>

## FO: Increase the resilience of communities to climate change

Evaluation criteria for this objective are given below (Table 20).

Table 20. Evaluation criteria for FO “Increase the resilience of communities to climate change”.

Scale	Guidance
<b>Very Positive</b>	<p><b>Most (&gt;80%) of the net Greenhouse Gas (GHG) emissions reduction strategies/actions maintain or improve the overall resilience of Louisiana communities in practice (i.e., are practical, effective, and affordable). In addition, strategies/actions are fully consistent and integrated with existing or planned community adaptation approaches as part of a complete and holistic approach to improve community resilience, including:</b></p> <ul style="list-style-type: none"> <li>• Identification of climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts to communities and livelihoods (agricultural crop vulnerability, increased drought, flooding, etc.)</li> <li>• Mitigation of flood risk and impacts to inland communities (e.g., maintains or expands adequate stormwater infrastructure)</li> <li>• Mitigation of flood risk to coastal communities</li> <li>• Ensuring availability, accessibility, and effectiveness (rapid deployment, robust coverage, etc.) of insurance and other disaster recovery mechanisms</li> </ul>



Scale	Guidance
<b>Positive</b>	<ul style="list-style-type: none"><li>• Mitigation of potential negative human health impacts associated with climate change (e.g., increased heat deaths/hospitalizations)</li><li>• Inclusion of adaptation plans to support jobs, industries, and activities vulnerable to climate change (e.g., fishing, agriculture)</li></ul> <p><b>Many (60-80%)</b> of the net Greenhouse Gas (GHG) emissions reduction strategies/actions maintain or improve the overall resilience of Louisiana communities in practice (i.e., are practical, effective, and affordable). In addition, strategies/actions are <b>consistent</b> with existing or planned adaptation approaches to improve community resilience, including:</p> <ul style="list-style-type: none"><li>• Identification of climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts to communities and livelihoods (agricultural crop vulnerability, increased drought, flooding, etc.)</li><li>• Mitigation of flood risk and impacts to inland communities (e.g., maintains or expands adequate stormwater infrastructure)</li><li>• Mitigation of flood risk to coastal communities</li><li>• Ensuring availability, accessibility, and effectiveness (rapid deployment, robust coverage, etc.) of insurance and other disaster recovery mechanisms</li><li>• Mitigation of potential negative human health impacts associated with climate change (e.g., increased heat deaths/hospitalizations)</li><li>• Inclusion of adaptation plans to support jobs, industries, and activities vulnerable to climate change (e.g., fishing, agriculture)</li></ul>
<b>Neutral</b>	<p><b>Some (40-60%)</b> of the net Greenhouse Gas (GHG) emissions reduction strategies/actions maintain or improve the overall resilience of Louisiana communities in practice (i.e., are practical, effective, and affordable). In addition, strategies are <b>somewhat consistent</b> with existing or planned adaptation approaches to improve community resilience, including:</p> <ul style="list-style-type: none"><li>• Identification of climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts to communities and livelihoods (agricultural crop vulnerability, increased drought, flooding, etc.)</li><li>• Mitigation of flood risk and impacts to inland communities (e.g., maintains or expands adequate stormwater infrastructure)</li><li>• Mitigation of flood risk to coastal communities</li><li>• Ensuring availability, accessibility, and effectiveness (rapid deployment, robust coverage, etc.) of insurance and other disaster recovery mechanisms</li><li>• Mitigation of potential negative human health impacts associated with climate change (e.g., increased heat deaths/hospitalizations)</li><li>• Inclusion of adaptation plans to support jobs, industries, and activities vulnerable to climate change (e.g., fishing, agriculture)</li></ul>
<b>Negative</b>	<p><b>Few (20-40%)</b> of the net Greenhouse Gas (GHG) emissions reduction strategies/actions maintain or improve the overall resilience of Louisiana communities in practice (i.e., are practical, effective, and affordable). In addition, strategies/actions are <b>inconsistent</b> with existing or planned adaptation approaches to improve community resilience, including:</p> <ul style="list-style-type: none"><li>• Identification of climate change related challenges (rising temperatures and precipitation, changes in storm/hurricane frequency and intensity, relative sea level rise, ocean acidification, etc.) and their potential impacts to communities and livelihoods (agricultural crop vulnerability, increased drought, flooding, etc.)</li><li>• Mitigation of flood risk and impacts to inland communities (e.g., maintains or expands adequate stormwater infrastructure)</li><li>• Mitigation of flood risk to coastal communities</li><li>• Ensuring availability, accessibility, and effectiveness (rapid deployment, robust coverage, etc.) of insurance and other disaster recovery mechanisms</li><li>• Mitigation of potential negative human health impacts associated with climate change (e.g., increased heat deaths/hospitalizations)</li></ul>





Scale	Guidance
<b>Very Negative</b>	<ul style="list-style-type: none"><li data-bbox="310 270 1442 327">• Inclusion of adaptation plans to support jobs, industries, and activities vulnerable to climate change (e.g., fishing, agriculture)</li></ul> <hr/> <p data-bbox="310 369 1442 459"><b>Few (&lt; 20%)</b> of the net Greenhouse Gas (GHG) emissions reduction strategies/actions maintain or improve the overall resilience of Louisiana communities <i>in practice</i> (i.e., are practical, effective, and affordable). In addition, strategies/actions include:</p> <ul style="list-style-type: none"><li data-bbox="310 474 1016 501">• <b>Limited or no consideration</b> of community adaptation needs</li><li data-bbox="310 508 1373 535">• <b>Limited or no integration</b> with existing community adaptation initiatives, plans, and strategies</li></ul>