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STATE + LOCAL DECARBONIZATION POLICIES FOR THE SOUTH

Report by Mark Paul, PhD + Leah Stokes, PhD

**SOUTHERN
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ABOUT THE SOUTHERN ECONOMIC ADVANCEMENT PROJECT (SEAP)

SEAP is your partner and resource. We amplify the efforts of existing organizations and networks that work towards broadening economic power and building a more equitable future.

Broadening economic power brings attention to how race, class, and gender intersect social and economic policy in the South. We explore policy ideas designed to directly address these connections. SEAP focuses on 12 Southern states and marginalized/vulnerable populations within the region and is a fiscally sponsored project of the Roosevelt Institute.

NOTE: *This is a shortened version of a 50-page report that can be found [HERE](#) with references for the citations.*

AUTHORS

Mark Paul is an assistant professor of economics and environmental studies at New College of Florida and a fellow at the Roosevelt Institute, where he works on the 21st Century Economy project. His current research focuses on the economics of climate change and inequality. He is a co-author of *Decarbonizing the US Economy: [Pathways Toward a Green New Deal](#)*.

Leah Stokes is an assistant professor of political science at the University of California, Santa Barbara. She studies public policy and political behavior, with a focus on environmental and energy politics. She is the author of *Short Circuiting Policy: Interest Groups and the Battle Over Clean Energy Laws and Climate Policy in the American States*, at Oxford University Press.

Contributors

Sydney Bartone is a research assistant in political science at the University of California, Santa Barbara. **Nikayla Jefferson** is a research assistant in political science at the University of California, Santa Barbara. **Olivia Quinn** is a PhD student in political science at the University of California, Santa Barbara, focused on climate and environmental politics.

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Introduction

Climate change is the greatest problem of the 21st century.

It is a problem not for future generations, but for today. Communities in the South are already coming to terms with their new reality: life in the era of climate change. The region is highly exposed to climate change impacts given its extreme vulnerability to increased temperatures and rising sea levels, low levels of climate mitigation and adaptation to date, and high level of inequality (GCRP, 2018; Muro et al., 2019). A recent study showed that as global warming intensifies, economic losses will disproportionately affect the South (Hsiang et al., 2017). While some warming and sea level rise are already locked in, bold action on climate mitigation and adaptation policy now can wean the region off fossil fuels, leading to a healthier, safer, and more resilient South.

The inequity crisis in the South will continue to be amplified by climate change, making it that much more important for the region to act. High levels of poverty and inequality are associated with energy insecurity, increased vulnerability during extreme weather events, and higher levels of pollution. Considerable attention in this report is focused on how to tackle the climate crisis while easing the energy burden for the most vulnerable households.

While some states in the Southeast do gain tax revenue and jobs from the current fossil fuel economy, a managed transition to renewables can ensure a just transition for the workers, and a sufficiently strong economy to maintain, and likely strengthen, the economic position of state governments (Morris, 2016). There will be challenges in this transition. Currently fossil fuels generate significant tax revenues in many southern states. For example, severance taxes from fossil fuels can be as much as 10% of a state's total tax revenue in Louisiana, West Virginia and Texas (Morris, 2016).¹ However, in states where government policy has helped propel renewable energy investments, local tax revenue has grown from these sources. In 2019, Kansas received \$29 million in local tax payments from wind projects alone (AWEA, 2019). As states invest in clean energy, it can provide new tax revenue.

The South has untapped potential for economic growth and climate leadership. What policies could states adopt to meet these goals? This report aims to inform state and local policymakers, as well as other stakeholders, about policies the Southern states could adopt to decarbonize and create well-paying jobs. The policies we cover aim to

¹ For example, Texas already has more wind jobs than the entire fossil fuel sector in either LA or WV (USEER 2020).

reduce emissions, promote employment and economic growth, and provide broad-based health benefits by eliminating deadly co-pollutants. While decarbonizing is front and center, equity is also incorporated throughout; as a more resilient South means not only addressing the climate crisis, but confronting the economic insecurity crisis simultaneously.

Reducing greenhouse gas emissions will be no small feat. Yet, it is achievable.

The South is poised to make up for lost time by passing bold climate policy to protect the environment and propel the economy forward.

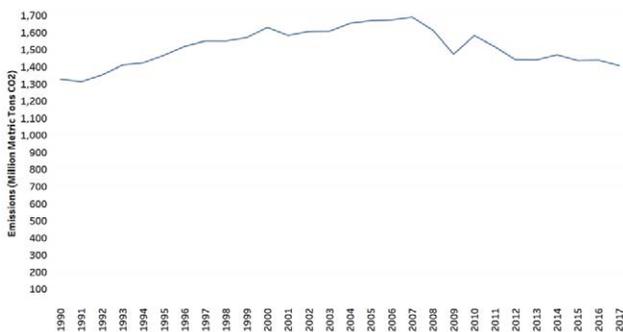
Section 1: The State of Climate Policy in the Southern States



The South is at a crossroads.

Currently, the South is heavily reliant on fossil fuels. While carbon emissions have fallen slightly from their peak in 2007, they remain stubbornly high (Figure 1). Energy usage in the South is also quite high. In fact, Louisiana tops the charts nationally for energy consumption per capita (EIA, 2017).

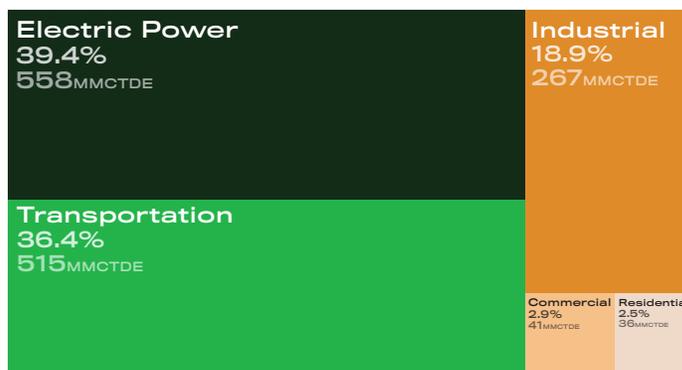
Figure 1: Annual U.S. CO₂ Emissions from Fossil Fuel Combustion, 1990-2017



Source: EPA https://www.epa.gov/sites/production/files/2019-11/documents/co2ffc_2017.pdf

To understand the South’s carbon emissions, we can look at emissions by sector (Figure 2).

Figure 2: South Green House Gas Emissions by Sector, 2017



Source: EIA <https://www.eia.gov/environment/emissions/state/>

Electricity generation is responsible for almost 40% of the region’s emissions, followed closely by the transportation sector at 36%. While the residential and commercial sectors appear to be small sources, that’s not the whole story. The figure above only identifies direct emissions through on-site combustion of fossil fuels in buildings, for example gas stoves and water heaters. Emissions associated with electricity

consumed by buildings are counted in the electricity sector in the graphic above. Thus, the building sector has a much larger carbon footprint than this figure suggests. This figure also excludes agricultural emissions, which nationally account for around 9% of total emissions; thus, this is a sector that also warrants significant policy attention (EPA, 2019).



Siesta Key Beach – Sarasota, Florida.

Section 2: Overview of Policies to Drive Climate Action in the Southern States



To address the climate crisis and make tangible emissions reductions we recommend the following policies to sectors of the economy be implemented:

ELECTRICITY SECTOR POLICY:

State level renewable energy targets have driven large amounts of clean energy adoption across the country. Unfortunately, states in the South have not yet adopted these laws. To increase the rate that coal and natural gas plants retire, states can also adopt policies for “stranded costs.” This approach allows debt to be refinanced, to reduce the costs associated with retiring these plants. Additionally, Southern states may seek to reform utility regulation, to prioritize renewables and bring down costs.

We encourage Southern policymakers to take the following bold steps to decarbonize the electricity sector quickly and equitably.

- Enact ***Renewable Portfolio Standards (RPS) and Clean Electricity Standards (CES)*** that set annual benchmarks for the production of clean or renewable electricity state-wide. While RPS policies usually allow wind and solar to count, CES policies also count nuclear, since it does not emit carbon. These laws have been crucial to driving progress. Since 2000, nearly half of all renewable energy generation growth in the US can be attributed to state renewable energy requirements (Barbose, 2019). State RPS policies vary in terms of eligible resources and requirements. As of 2019, 29 states, Washington, D.C., and

three territories have adopted an RPS (NCSL, 2019). South Carolina, and Virginia have been successful in passing renewable energy legislation. Similarly, Texas established its law in 1999, and has achieved its goals (NCSL, 2019).

- Reduce the financial burden associated with deep decarbonization by implementing **Policies for Stranded Costs**, such as power plant debt refinancing mechanisms and funds for workers affected by power plant shutdowns. Most coal plants in the South are actually more expensive to continue operating than new renewable energy projects – thus, many coal plants have closed already based on economic factors (Gimon et al., 2019). Across the South, 74 of the 77 running existing coal-fired power plants in the region could be replaced with local wind or solar renewables by 2025 at a cost-saving. Similar to refinancing a mortgage on a home, securitization enables utilities to refinance the debt on their coal and natural gas plants at a lower interest rate. Lowering costs is beneficial to all parties. With securitization, the debt can be repaid through government-backed bonds (Richardson, 2019). This policy is currently available in 24 states, including Mississippi and Louisiana in the South. Policy can be designed to ensure that both workers and communities are supported during the transition away from fossil plants. For example, in 2019, New Mexico passed a law to not only increase their RPS to achieve 100% clean energy by 2045 but also allocate \$40

million in transition assistance for the community where a coal plant would close (Long, 2019).

- Adopt **Distributed Generation Policies**, such as net metering, that reduce regulatory barriers and provide incentives to increase deployment of distributed energy resources and technologies such as photovoltaic solar arrays and battery storage. Distributed generation refers to electricity that is produced near where it is consumed. Technologies like solar photovoltaic (PV), micro wind turbines and battery storage enable this approach (EPA, 2018). State governments can utilize distributed generation policy to increase renewable energy deployment on the grid, create local jobs in technology manufacturing and reduce the grid's energy losses. By incentivizing private actors to change their behavior and invest in their own on-site renewable technologies and storage, customers will experience increased energy independence. South Carolina passed a comprehensive clean energy law, the Energy Freedom Act, last year. The law lifts the state's 2% cap on net metering, streamlines the contract process for small power producers, bolsters utility customer rights, and requires utilities to submit Integrated Resource Plans at least once every three years (Roselund, 2019).

BUILDING SECTOR POLICY:

The estimated 118 million residential and 5.6 million commercial buildings across the country account for 40% of total energy use

and 29% of total GHG emissions in the U.S. (Leung, 2018; EIA, 2016; EIA, 2019). Decarbonizing the building sector requires two key outcomes: buildings must be fully electrified so they can run off clean electricity; and buildings must undergo energy efficiency retrofits to run on less electricity. Together, these steps can help reduce both direct emissions – emissions due to on-site combustion of fossil fuels (e.g. gas stove or water heater) – and indirect emissions from electricity consumption.

- Get a head start on deep decarbonization by reducing total energy consumption of residential and commercial buildings via **Energy Efficiency Investments**, including passing an **Energy Efficiency Resource Standard (EERS)**. For each million dollars spent on energy efficiency an estimated seven direct jobs and five indirect jobs are created (Pollin et al., 2014). However, high up-front costs and imperfect information regarding long-term savings are significant challenges to improving energy efficiency in residential and commercial buildings. According to a report by the American Council for an Energy-Efficient Economy (ACEEE), the South ranks last in the country for energy efficiency (ACEEE, 2019c). To overcome these roadblocks, Kentucky has a sales tax exemption for energy efficient products as well as numerous residential rebate programs that local utilities run. Similarly, Alabama offers an energy efficiency loan program called AlabamaSAVES. The program is designed to finance non-profit, industrial and commercial business' projects including upgrades to

refrigeration equipment, lighting, doors and windows (DSIRE, 2017). At the local level, a number of cities across the South have participated in the Department of Energy's Better Buildings Challenge, which requires a commitment to improving the energy efficiency of local buildings by at least 20% over a decade. Atlanta has been a regional leader in this program, meeting its 20% energy reduction goal two years early for 450 buildings, spanning 114 million square feet. This work has created over 650 jobs, added an estimated \$52 million to the regional economy, and saved the carbon emissions equivalent of removing half a million cars from the road for a year (ABCC, 2019; DOE, n.d.). Other Southern participants in the program include Chattanooga, TN; West Palm Beach, FL; Roanoke, VA; and Bullitt County Public Schools, KY.

- Reduce in-home reliance on polluting fuels by funding **Building Electrification** programs that target home appliances and heating/cooling systems. Governments can offer financial incentives such as rebates and sales tax breaks for the electrification of appliances, including heat pumps, cook stoves, and water heaters to lower the upfront costs of electrification. Property assessed clean energy (PACE) financing is a way to assist homeowners and businesses with the upfront costs associated with electrification, energy efficiency upgrades, and renewable energy installation. PACE financing allows projects to be paid back over a 5-25 year time horizon by incorporating the payment into the property taxes

associated with the building. Kentucky and Florida already offer PACE financing, but it could be expanded to all other Southern states.

- Strengthen **Building Codes and Zoning** requirements for new construction that expand energy efficiency requirements and target urban sprawl. Stronger building codes bring about more than economic and environmental benefits, they bring about social benefits including “significant equity benefits by reducing energy poverty, strengthening energy resilience, and improving energy access for all” (Becque et. al 2019, 2). Florida is currently leading the region in energy efficient building codes by having adopted the 2015 International Energy Conservation Code (IECC), while Louisiana is using the 2009 IECC standard. At the other end of the spectrum, Mississippi has yet to adopt and implement any statewide building energy code program (Office of Energy Efficiency & Renewable Energy, 2020). According to the DOE, the adoption of model energy codes for residential and commercial buildings could save the country \$126 billion and avoid 841 million metric tons (MMT) of CO₂ emissions through 2040 (Office of Energy Efficiency & Renewable Energy, 2017). For states like Louisiana, updating their residential codes would save consumers roughly \$6,000 - \$7,000 on average and consumers’ cash flow would be positive in 1-2 years (Taylor, 2019; Mendon et al., 2015).

TRANSPORTATION SECTOR POLICY:

The transportation sector is responsible for the largest portion of greenhouse gas emissions in the United States. It’s also responsible for more than one-third of the South’s emissions. Transportation in the South is heavily reliant on the automobile because the region has less urban density than other regions (APTA, 2019). Fortunately, decarbonization strategies are not out of reach for many Southern cities and states looking to transition away from fossil fuels.

The region can aim to increase electric vehicle adoption, expand public transit, invest in rail and increase walking and biking. Programs that incentivize Southerners to make the switch from a traditional gas vehicle to an electric one ought to be designed and implemented in ways that benefit all drivers, not just the wealthy. Additionally, transit-oriented urban development can prioritize walking and biking, decrease reliance on emissions-intensive modes of transportation, promote public health and contribute to the larger goal of livable, culturally vibrant cities.

- Enact **Electric Vehicle (EV) Policies** to provide market-based incentives that reduce consumer barriers to EVs and support producers, in tandem with policies that build out city-level EV infrastructure. States can implement a number of policies to reduce consumer barriers to EV adoption, including reducing financial barriers through tax credits and rebates and building out charging infrastructure

(ICCT, 2018). Similarly, local governments can encourage EV, as exemplified by Austin, TX. In 2012, the municipally-owned utility Austin Energy formed the Texas River Cities Plug-in Electric Vehicle Initiative (TRC) with funding from the U.S. Department of Energy. The program offers discounts and rebates on charging station installation. Beyond demand-side incentives for consumers, the labor force of the automobile manufacturing industry ought to be a priority for Southern policymakers looking to swap gas-vehicles for EVs in their cities and states. A large portion of automobile assembly plants are located in Southern states, including those of Hyundai, Toyota and Nissan. To ensure a just transition away from fossil fuels, state policies that seek to expand EV production should keep Southern autoworkers in mind. Fortunately, transitioning to a clean-energy automobile industry presents opportunities to re-train existing employees and thus maintain the good-paying car manufacturing jobs that have come to define many Southern cities.

- Electrify and expand bus and light rail transit systems through **Public Transit Investments** to reduce automobile traffic and provide reliable transportation services to residents. The federal Department of Transportation estimates that for every zero-emission bus added to a city's transit fleet, there is a corresponding elimination of 1,690 tons of CO₂ – the equivalent emissions of 359 passenger cars over their lifespan (SACE, 2019).

On average, subways produce 76% lower GHG emissions per passenger mile than the average single-occupancy vehicle, while light rail systems produce 62% less, and bus transit produces 33% less (Hodges, 2010). Louisville, Kentucky and Seneca, South Carolina have both launched electric bus fleets. In fact, Seneca was the first city in the United States to transition to an all-electric bus fleet and has become the model for other municipalities looking to make the switch. Louisville created a first-of-its-kind, all-electric bus. Known as the “LouLift,” the bus is powered by batteries located under the bus floor. The batteries automatically recharge as they are connected to a high-capacity charger located overhead. The bus batteries last for around two hours and can be recharged within 10 minutes (Louisville Downtown Partnership, 2019). Regional transportation is also key. Here, Atlanta, Georgia is a clear leader. It has one of the largest metropolitan areas in the United States, and its transit system, the Metropolitan Atlanta Rapid Transit Authority (MARTA) currently ranks as the rail system with the greatest ridership in the South and 11th largest in the U.S. (APTA, 2019).

- Prioritize the needs of pedestrians and bicyclists by centering **Walk and Bike Mobility** goals in urban planning policy. Charlottesville, VA stands out as one of only two cities in the South with a Walk Friendly Communities Gold level ranking. Walkers and cyclists in Charlottesville account for 18% of work commutes (City of

Charlottesville, 2020). A closer look at Charlottesville's city planning and land use development policy reveals careful attention to the needs of pedestrians and cyclists. Mixed-use zoning reduces dependence on daily driving commutes because residents live near where they work and shop. According to the Brookings Institute, this kind of planning will also lead to economic growth (Leinberger & Loh, 2019).

CARBON PRICING:

Putting a price on carbon – whether through a carbon tax, cap, or a hybrid model – is one of the most straightforward ways to help reduce carbon emissions and other air pollution. This is especially true for fiscally constrained governments at the state and local level, as carbon pricing can be designed to raise revenues. The idea is rather simple: the government levies a price on fossil fuels to ensure polluters pay for the pollution they release into the atmosphere. The carbon price therefore helps level the playing field between fossil fuels and carbon-free energy sources. While many policies are aimed at specific sectors of the economy, such as the building sector or electricity sector, carbon pricing is an example of a policy that could be cross-sector if applied economy-wide.

- Hold polluters accountable for carbon emissions by setting a **Carbon Price** and directing subsequent revenue to carbon dividends, renewable energy, and community equity investments. We suggest a price collar which is a hybrid model utilizing

features from both a carbon tax and a carbon cap. All pollution permits would be allocated through quarterly auctions. The initial price floor could be set at \$25/tCO_{2e} in year one, then rising by \$5/tCO_{2e} per year, plus inflation. The price ceiling may be initially set at \$35/tCO_{2e} rising by \$10/tCO_{2e} per year, plus inflation. Revenue should be used to invest in energy efficiency and electrification measures, especially for low-income consumers, in order to reduce energy demand and protect consumers from increasing the price of carbon-intensive electricity. States may also want to return some revenue back to the public via carbon dividends.

AGRICULTURAL AND OCEANS POLICY:

The climate crisis will greatly impact farmers in the South and across the nation. The agriculture sector is already facing higher temperatures, drought, and extreme weather events, and these will only be amplified as global warming intensifies. Sustained high temperatures decrease crop yields and expose livestock to heat stress. Fisheries already burdened by overfishing and pollution will face higher water temperatures, which have been shown to disrupt ecosystems, facilitate the spread of marine diseases and alter marine species' reproduction and migration lifecycles (EPA, 2017). In the South, where crop cultivation, livestock, and fisheries are important to regional economies, climate action is necessary to protect the sector. The region produces more than \$55 billion in agriculture products each

year, roughly equal to 17% of total U.S. production (Asseng, 2013). The Southern states along the Gulf of Mexico are the second largest domestic source of seafood by landings, with four of the top ten U.S. commercial fishing ports located along the South Atlantic and Gulf Coasts (NOEP, 2016).

Small-scale agricultural and coastal land use policies that support climate change mitigation already exist in the U.S. There is considerable room for further innovation. Southern policymakers can act to decarbonize these sectors by focusing policy efforts on climate-mitigating agricultural practices, preserving wild lands and forests, and protecting critical coastal habitats.

- Decarbonize the **Agriculture** sector by providing financial and technical support to farmers engaged in regenerative agriculture practices that sequester carbon in soil and protect rural lands. Industrialized agriculture generates nearly 10% of all greenhouse gas emissions in the United States, including methane (CH₄), carbon dioxide (CO₂), and nitrous oxide (N₂O) (ERS, 2017). These emissions are linked to fertilizer use, soil erosion and degradation, loss of grass wildlands, and methane emissions from livestock. Agricultural sector emissions are largely tied to large-scale farming operations. Often, large-scale operations discourage practices like crop rotation and no-till farming that sequester carbon and maintain soil health. Regenerative agriculture has the potential

to restore rural environments and agricultural lands, increase biodiversity, produce high-quality food, and store carbon from the atmosphere in the soil – all while supporting local economies (Rodale Institute, 2014). Farming practices can prioritize soil health and carbon sequestration. Modern agriculture methods deplete the soil of its organic carbon through tillage, monocropping and yield-based management systems. Alternative approaches can be used, including reduced tillage, composting, cover crops, and rotational crops. With this approach, modern farms have the potential to become carbon sinks, reducing more atmospheric pollution than they release (Rodale Institute, 2014). State and local agriculture institutions like state Departments of Agriculture can offer diverse stakeholders like fishers, farmers, and environmentalists a variety of financial resources, training assistance and research services to incentivize regenerative agriculture practices.

- Expand publicly owned **Forests and Wildlands** to conserve native biodiversity and maintain carbon sinks. The state of Georgia leads the nation in urban tree loss, which stresses wildlife and decreases tree canopy and the availability of clean air (Nowak and Greenfield, 2018). Similarly, Houston, Raleigh, and Charlotte have lost much of their urban trees. The Forestry Legacy Program, administered by the U.S. Forest Service, allows private landowners to participate by “either selling their property outright or by retaining ownership and

selling only a portion of the property’s development rights; both are held by state agencies or another unit of government” (USFS, 2020a). Recently funded projects include Arkansas’ Hot Springs Forest, Florida’s Welannee Watershed Forest, and Texas’ Fox Hunters Hill – totaling \$8.3 million in project funds (USFS, 2020b). For fiscal year 2021, states can submit three projects totaling \$10 million in federal funds. Projects of this kind, when paired with deep decarbonization in other sectors, protect nature’s ability to pull carbon from the air and mitigate additional warming.

- Enact and enforce regulation of **Coastal Ecosystems** to protect the ocean’s natural ability to store carbon long-term. Destructive coastal development projects can harm native habitats that are crucial to climate mitigation and adaptation and should be carefully regulated to prevent further damage. Over the last century, negligent coastal development – including dredging, filling, and diking – has stressed or destroyed native mangrove forests (Office of Resilience, 2019). In total, 83% of global carbon is circulated through the ocean (Blue Carbon Initiative, 2019). Mangroves and coastal wetlands store carbon at a greater rate than most ecosystems, including three to five times more than tropical forests.

Coastal ecosystems also provide one of the first lines of defense against climate-change-induced sea level rise and stronger, more damaging hurricanes. Cities and states can protect coastal wetlands through increased regulation and enforcement, as well as public outreach and education campaigns about the necessity and sensitivity of wetlands. Federal programs within U.S. Fish and Wildlife, the EPA, FEMA, the U.S. Army Corp of Engineers, NOAA, and other federal agencies and departments, offer grants for ecosystem and wildlife restoration. Most state level agencies also offer similar programs for coastal communities to adapt and mitigate the effects of climate change. Non-profit groups like The Wildlife Conservation Society’s Climate Adaptation Fund, the Rockefeller Foundation, and several other charitable groups offer assistance to local restoration and mitigation efforts.

Conclusion



Climate change is here, and it represents a serious threat to the economy, ecosystems and people in the South. The region is particularly vulnerable to climate change, yet remains behind many other regions of the United States in terms of action. Thankfully, technologies and public policies to put the region on the path to decarbonization exist. But this change will not arise on its own. Altering the current trajectory of the region will take leadership across scales of government to re-orient sectors across the economy. The energy, transportation, agriculture, land use, and industrial policies currently in place are in immediate need of updating.

These advancements will generate new well-paying employment opportunities, improve development patterns, improve air quality and public health, reduce energy burdens for households, and bolster economic growth. Together, these changes can build a strong, more resilient, and more equitable Southern United States.

The aim of this report has been to provide a menu of policy options for policymakers to consider in their efforts to address one of the most pressing issues of our time: climate change. While decarbonizing the region will require sizable changes to our economy, they are necessary. Importantly, the economy is going to be changed drastically if global warming is allowed to continue unabated; the question becomes, do we shape the future into one centered on sustainability and a vibrant local economy, or do we allow global warming to take its toll on the region, devastating the local economy and destroying our communities? The choice is ours. Local and state policy-makers should not let this opportunity go to waste.



A row of solar panels is installed outside Blakely, GA. This 102.5-mega-watt power plant will generate electricity for Facebook's new data center in Newton County, GA, 200 miles away.
Source: Johnathon Kelso for NPR.

**Read the full report [HERE](#)
with references for the citations.**