University of Tennessee - Knoxville

An Assessment and Mapping of Federal Energy Investments in the Southeastern United States

Payton Corlew

Master's of Public Policy Capstone

December 10, 2024

I. Abstract

For the purpose of this paper, the Southeastern states are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Texas. This report will offer brief explanations and definitions for key offices and pieces of legislation, beginning with the Bipartisan Infrastructure Law (BIL), Inflation Reduction Act (IRA), and the differences between the Loan Programs Office (LPO) and the Office of Clean Energy Demonstrations (OCED). Each state will be studied, and a synopsis will be created for each one within the scope of the study. Data tables have been created in addition to the written report to better represent the funding and project allocation within each state. It will include how many pieces of legislation each state has passed and implemented and how much money each state is reported to be getting from the federal government. Ultimately, this report will examine and map the various federal programs that have allocated funds to energy initiatives in the Southeast. By understanding the role of federal funding in shaping the Southeast's energy landscape, this paper aims to provide valuable insights for policymakers, researchers, and stakeholders interested in promoting sustainable energy solutions and informing those on where gaps in energy-related advancements might lie.

II. Introduction

The Southeastern United States, with its diverse geography and energy needs, has been a significant player in the national energy landscape. Federal funding has been pivotal in shaping the region’s energy infrastructure and promoting clean energy initiatives. Historically, the Southeast has relied heavily on fossil fuels, particularly coal and natural gas, for energy needs. However, the increasing concerns about climate change, air pollution, and energy security have spurred a shift towards cleaner and more sustainable energy sources. Federal funding has

supported this transition, providing financial resources for research, development, and deployment of renewable energy technologies. One of the major challenges facing the Southeast is its vulnerability to extreme weather events, such as hurricanes, droughts, and heat waves. These events can disrupt energy infrastructure and increase energy demand. Federal funding has been used to support resilience initiatives, including developing microgrids and integrating distributed energy resources. Furthermore, the Southeast has a significant rural population, often facing unique energy challenges due to limited access to infrastructure and higher energy costs. Federal programs have aimed to address these disparities by providing funding for energy efficiency upgrades in rural homes and businesses and supporting the development of off-grid renewable energy systems.

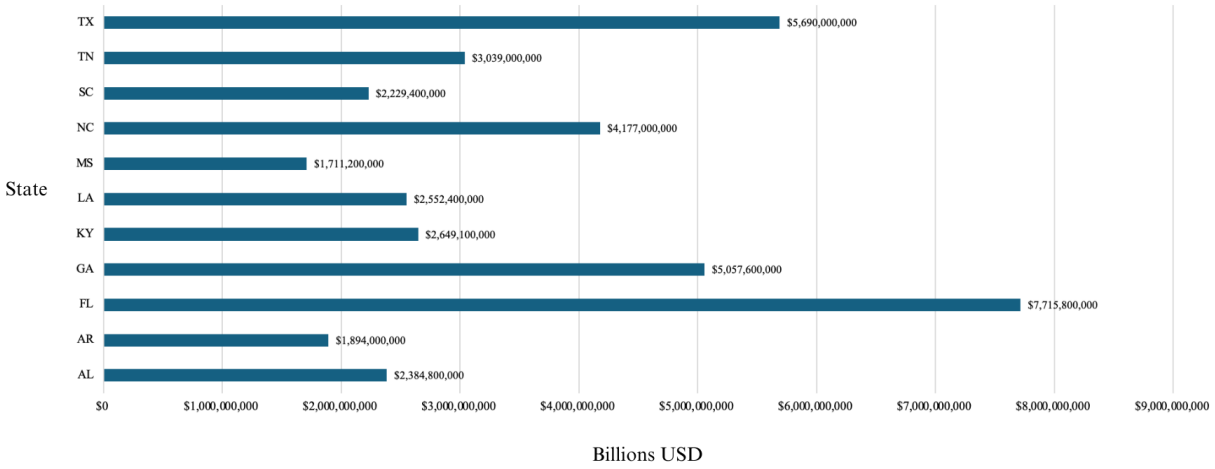
III. Existing Legislation and Offices

A. Bipartisan Infrastructure Law

The Bipartisan Infrastructure Law (BIL), enacted in November 2021, is a landmark piece of legislation that invests $1.2 trillion over a decade to upgrade America's infrastructure. This includes roads, bridges, public transit, broadband, and electric grid funding. A key feature of the BIL is its focus on accelerating the clean energy transition. It also includes investments in electric grid modernization, energy-efficient homes, workforce training, and cutting-edge clean energy technologies. The U.S. Department of Transportation will receive the largest share of new funding, totaling $274 billion. Other federal agencies, such as the Environmental Protection Agency, Department of Energy, Department of Commerce, and Department of Interior, will also receive significant funding allocations (roughly $28-$67 billion each). These agencies will use the funds to support infrastructure projects through various mechanisms, including direct

payments, competitive grants, cooperative agreements, and formula-based allocations.[1] Below is a graph that visualizes the total amount awarded to each state.

Table 4: Awarded Money from the Bipartisan Infrastructure Law



Southeast Energy Efficiency Alliance. (2023, December). Federal Funding Tracker - Southeast. Retrieved from https://www.seealliance.org/federal-funding-tracker-southeast/
Parker, Grace. Investing in the Southeast: Tracking Bipartisan Infrastructure Law Spending. Accessed December 8, 2024. https://www.seealliance.org/wp-content/uploads/BILReport_territories_FINAL.pdf.

B. Inflation Reduction Act

In addition to the BIL, The Inflation Reduction Act (IRA) is a significant piece of legislation passed by the U.S. Congress in 2022.[2] It seeks to curb inflation and reduce the national deficit through tax reforms and drug price negotiations. In addition, the IRA invests heavily in domestic energy production and manufacturing, promoting clean energy technologies to bolster energy security and reduce reliance on foreign sources. One of the IRA's primary focuses is combating climate change. By incentivizing renewable energy sources like solar, wind, and geothermal, and supporting the manufacture of clean energy technologies domestically, it aims to reduce carbon emissions significantly. The act offers tax credits for individuals and businesses adopting these technologies, including incentives for electric vehicle

[1]Seealliance. https://www.seealliance.org.
[2]U.S. Department of the Treasury, September 20, 2024. https://home.treasury.gov/.

purchases and charging infrastructure development, i.e., Energy Efficiency and Conservation Block Grants.

Both of these pieces of legislation are vital in modernizing America's infrastructure, accelerating the clean energy transition, creating jobs, improving energy security, and addressing climate change. By investing in roads, bridges, public transit, broadband, and electric grids while supporting renewable energy technologies, energy efficiency programs, and electric vehicle infrastructure, these laws seek to create a more sustainable and resilient future for the United States. However, it is important to note that the full impact of these laws will depend on various factors, including the effectiveness of implementation, the availability of funding, and the market dynamics of the energy sector.

C. The Office of Clean Energy Demonstrations

The Office of Clean Energy Demonstrations (OCED) was established in December 2021 and is an extended U.S. Department of Energy office. OCED receives funding from the Bipartisan Infrastructure Law and Inflation Reduction Act (August 2022). With over $25 billion in funding, OCED is spearheading large-scale clean energy demonstration projects in collaboration with the private sector, aiming to accelerate deployment, drive market adoption, and promote a just transition to a decarbonized energy system.[3] It is also dedicated to advancing the technologies necessary to address critical climate challenges and reach net zero emissions by 2050. Through OCED, the typical types of applicants are institutions of higher education, nonprofit and for-profit organizations, state and local governmental entities, tribal organizations, Indian tribes, incorporated and unincorporated consortia, and federally funded research and

[3]Portfolio | department of energy. https://www.energy.gov/oced/portfolio.

development centers.[4] What is unique about this program is that these awards are grants and do not have to be paid back.

D. Loan Programs Office

The Loan Programs Office (LPO) within the U.S. Department of Energy functions as a key driver of clean energy innovation. It provides vital financial support to large-scale energy projects that might otherwise struggle to secure funding.[5] This support comes in the form of loans and loan guarantees, helping to cover the often substantial upfront costs associated with developing and deploying new energy technologies. One of the LPO's primary roles is to mitigate risk for private investors. By providing loan guarantees, it encourages greater investment in the clean energy sector.[6] This is crucial for attracting the capital needed to bring innovative projects to fruition, particularly those involving technologies still in their early stages of commercialization. The LPO's focus extends beyond simply funding projects. It actively seeks to support technologies that can transform the U.S. energy landscape and contribute to a cleaner future. This includes renewable energy generation, advanced transportation technologies, and carbon capture and storage.[7] By fostering these advancements, the LPO promotes job creation, stimulates economic growth, and enhances U.S. energy security.[8] Empowered by increased funding and authority through the Inflation Reduction Act, the LPO is poised to play an even more significant role in the coming years. It will continue to catalyze clean energy

---

[4]Department of Energy. https://www.energy.gov/.
[5]Loan Programs Office | Department of Energy. https://www.energy.gov/lpo/loan-programs-office.
[6]United States Department of Energy. "INFLATION REDUCTION ACT OF 2022." Energy.gov. https://www.energy.gov/lpo/inflation-reduction-act.
[7]United States Department of Energy. "Innovative Energy and Innovative Supply Chain." Energy.gov. https://www.energy.gov/lpo
[8]U.S. Department of the Treasury. "FACT SHEET: Inflation Reduction Act's Tax Incentives Will Deliver Benefits for Americans and the Economy." Press release, August 16, 2023. https://home.treasury.gov/news/press-releases/jy1830.

innovation, helping the nation achieve its ambitious climate goals and transition towards a more sustainable energy future.

IV. Individual State Profiles

A. Alabama

Alabama possesses a wealth of energy resources, including fossil fuels (coal, oil, and natural gas) and renewables like hydropower and biomass. The state's varied geography supports this diverse energy portfolio, ranging from the Appalachian Mountains to the Gulf Coast. As a major industrial hub, Alabama ranks among the top 10 states in the U.S. for industrial energy consumption, with this sector accounting for over 40% of the state's total energy use.[9] Key industries driving this demand include automobile manufacturing, metal production, and chemical processing. Furthermore, transportation plays a significant role in Alabama's energy landscape, with increased gasoline consumption contributing to rising energy demands within this sector.

According to the State Energy Legislation Database, Alabama has enacted 85 bills since 2008,[10] and the state has received roughly $25.9 million from the Weatherization Assistance Program (WAP) and $7.7 million from the State Energy Program (SEP) since 2015.[11] It was also reported by the U.S. Energy Information Administration in 2022 that the leading energy production source in the state was nuclear electric power, coming in at 441.3 trillion British Thermal Units (BTU), followed by coal and wood/waste production.[12] The state's overall

---

[9]U.S. Energy Information Administration. "Alabama State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php.
[10]National Conference of State Legislatures. "Energy State Bill Tracking Archive 2008-2022." NCSL.org. https://www.ncsl.org/energy/energy-state-bill-tracking-archive-2008-2022.
[11]United States Department of Energy. "State and Community Energy Programs Project Map - Alabama." Energy.gov. https://www.energy.gov/scep.
[12]U.S. Energy Information Administration. "Alabama State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=AL#tabs-3.

funding can be further broken down into categories such as energy conservation, regional development, and land management, with a total amount of federal funding being roughly $2.4 billion through BIL.[13]

Current project allocations within the state:[14]

- U.S. Department of Agriculture (USDA): 1 Contract, 48 Grants, and 3 Loans
- Department of Energy (DOE): 1 Contract and 23 Grants
- Environmental Protection Agency (EPA): 1 Grant
- Department of Interior (DOI): 5 Grants

B. Arkansas

Arkansas is a state of contrasts. Its varied terrain encompasses mountains, dense forests, lakes, and river valleys. This diverse landscape provides a wealth of natural resources, including natural gas, coal, oil, and timber reserves. The state's topography plays a significant role in its energy profile. The Mississippi River along its eastern border and the highlands in the north and west contribute to Arkansas's considerable hydropower potential. The Arkansas River Valley is a key source of natural gas and coal. Meanwhile, the Gulf Coastal Plains in southern Arkansas contain the state's crude oil production areas. Despite its significant energy resources, Arkansas consumes about 50% more energy than it produces.[15] This high energy consumption is mainly driven by the industrial sector, which includes agriculture. Arkansas's fertile lands and favorable climate support a thriving agricultural industry, with poultry, soybeans, and rice leading

[13]Appendix: Table 4
[14]Table 1
[15]U.S. Energy Information Administration. "Arkansas State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=AR.

products. Energy-intensive manufacturing industries, such as food processing, metal fabrication, and paper production, also contribute to the state's energy demands. Transportation, residential, and commercial sectors round out the major energy consumers in the state.

Arkansas has enacted 132 energy-related bills since 2008[10] and has received roughly $48.1 million from WAP and $39.4 million from SEP.[16] In 2022, the leading energy producer in the state was marketed natural gas at 425.6 trillion BTU, followed by nuclear electricity at 149.4 trillion BTU, and wood/waste at 67.8 trillion BTU.[17] According to the Southeast Energy Efficiency Alliance (SEEA), the state of Arkansas has received a total of $1.9 billion in federal funding (BIL).[13]

Current project allocations within the state:[14]

- USDA: 22 Grants and 3 Loans
- DOE: 14 Grants
- EPA: 6 Grants
- DOI: 1 Contract

C. Florida

Florida, the Sunshine State, is aptly named for its expansive solar energy potential. Beyond sunshine, the state also possesses substantial biomass resources and some oil and natural gas production. Florida has a long peninsula extending south into the warm waters of the Gulf of Mexico, shaping its climate and energy landscape. The Gulf Stream moderates temperatures,

---

[16]United States Department of Energy. "Arkansas Recovery Act State Memo." Energy.gov. https://www.energy.gov.
[17]U.S. Energy Information Administration. "Arkansas State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=AR#tabs-3.

creating a tropical to subtropical climate while also contributing to the state's high humidity and vulnerability to hurricanes. Historically a rural state, Florida experienced explosive population growth in the 20th century. Today, it is the third most populous state in the nation and a major energy consumer, ranking third in total energy consumption.

However, Florida's per capita energy use is relatively low, thanks to its mild winters and a smaller industrial sector than other large states. The transportation sector dominates Florida's energy consumption, driven by the influx of tourists. With automobiles, trains, planes, and ships contributing, this sector accounts for almost two-fifths of the state's total energy use. Residential energy consumption is also significant, with air conditioning a near necessity in most homes. This sector consumes nearly three-tenths of the state's energy. The commercial sector accounts for over one-fifth of energy use, while the industrial sector consumes a comparatively smaller one-tenth. Overall, Florida consumes far more energy than it produces, relying heavily on energy imports.[18]

The state has enacted 103 pieces of legislation since 2008[10] and has received roughly $25.3 million from WAP and $16.1 million from SEP.[19] Producing 320.9 trillion BTU, nuclear electric power is the state's leading energy production resource, followed by wood/waste at 148.8 trillion BTU, and noncombustible renewables at 85.6 trillion BTU.[20] According to the SEEA, the state of Florida has received a total of $7.7 billion in federal funding (BIL).[13]

---

[18]U.S. Energy Information Administration. "Florida State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=FL.
[19]United States Department of Energy. "State and Community Energy Programs Project Map - Florida." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-florida.
[20]U.S. Energy Information Administration. "Florida State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=FL#tabs-3.

Current project allocations within the state:[14]

- USDA: 2 Contracts, 42 Grants, 6 Loans, and 3 Other
- DOE: 2 Contracts, 78 Grants, and 32 Other
- EPA: 3 Contracts and 2 Grants
- DOI: 1 Contract: Indefinite Delivery Vehicle (IDV), 1 Contract, and 8 Grants

---

D. Georgia

Georgia is the largest state east of the Mississippi River, including mountains, rolling hills, and coastal plains. Despite its location near fossil fuel resources, Georgia has no significant reserves. Instead, the state relies on nuclear power and renewable resources such as biomass, solar energy, and hydropower for its energy needs. Georgia's forests are among the most productive in the nation, and the state is a leader in wood processing and wood-fueled power generation. The state also has several hydroelectric dams providing clean and reliable energy. Georgia's transportation sector is the largest consumer of energy in the state, followed by the industrial and residential sectors. The state's warm and humid climate means that air conditioning is widely used, contributing to the residential sector's high energy consumption.

The state has enacted a total of 77 energy-related bills[10] and received $34.4 mil from WAP and $10.3 mil from SEP.[21] As of 2022, the state only has three types of energy production: nuclear electric power at 355.4 trillion BTU, wood/waste at 236.8 trillion BTU, and

[21]United States Department of Energy. "State and Community Energy Programs Project Map - Georgia." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-georgia.

noncombustible renewables at 36.5 trillion BTU.[22] Overall, the state has received a total of $5 billion from the federal government (BIL).[13]

Current project allocations within the state:[14]

- USDA: 2 Contracts, 161 Grants, and 7 Loans
- DOE: 2 Contract IDVs, 11 Contracts, and 78 Grants
- EPA: 7 Grants
- DOI: 5 Contracts

E. Kentucky

Kentucky's energy landscape is shaped by its ample coal reserves located in the state's eastern and western parts. These reserves, along with oil and natural gas deposits, contribute to the state's significant energy production capabilities. Additionally, Kentucky's rivers provide hydroelectric power, while its fertile soils and ample rainfall support the production of biofuels. Despite these resources, Kentucky's energy consumption outpaces its production. The industrial sector, a powerhouse encompassing manufacturing, agriculture, and forestry, leads the state in energy use. Transportation needs, driven by the movement of goods and people, also significantly demand energy resources. Residential energy consumption is equally important and is influenced by climate and housing characteristics. These sectors highlight the complex interplay between Kentucky's economy, environment, and energy demands.

---

[22]U.S. Energy Information Administration. "Georgia State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=GA#tabs-3.

Since 2008, the state has enacted 78 bills,[10] and a total of $46.6 million has been received from WAP and $7.2 million from SEP.[23] Coal production has been the leading resource in the state with around 686.9 trillion BTU as of 2022. The state also produces natural gas, noncombustible renewables, and crude oil but did not top over 100 trillion BTU.[24] The state has received $2.6 billion from the federal government (BIL).[13]

Current project allocations within the state:[14]

- USDA: 102 Grants and 11 Loans
- DOE: 2 Contracts and 30 Grants
- EPA: 19 Contracts
- DOI: 27 Grants

F. Louisiana

Louisiana, situated at the mouth of the Mississippi River, is a state defined by its large number of energy resources. The thick sediments of the Mississippi Delta hold vast reserves of crude oil and natural gas, both onshore and offshore, making Louisiana a key player in the nation's energy production. Beyond fossil fuels, the state also possesses substantial biomass from agricultural byproducts, wood, and wood waste.

Louisiana's subtropical climate, with its abundant rainfall and rich soils, fosters a diverse agricultural economy. Sugarcane, rice, and livestock are key components of this sector, while

---

[23]United States Department of Energy. "State and Community Energy Programs Project Map - Kentucky." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-kentucky.
[24]U.S. Energy Information Administration. "Kentucky State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=KY#tabs-3.

forested lands, covering nearly half the state, contribute valuable timber resources. This combination of natural resources fuels Louisiana's energy landscape.

However, Louisiana's energy consumption is also significant. It ranks fourth among states in total energy consumption, and its per capita energy consumption is the second highest in the nation.[25] This high demand is largely attributed to the energy-intensive industries that drive Louisiana's economy, including chemical processing, petroleum refining, and natural gas production. These industries dominate the state's industrial sector, accounting for 70% of Louisiana's total energy consumption.[25] While transportation and residential energy use are also factors, the industrial sector's demand overshadows them, highlighting energy's crucial role in Louisiana's economic engine.

The state of Louisiana has enacted 107 pieces of energy-related legislation[10] and has received $46.6 million from WAP and $7.2 million from SEP.[26] As stated above, Louisiana has a wide variety of resources at its disposal, with natural gas ranking as the top production resource at 2,073.7 trillion BTU. Crude oil and nuclear electric power follow with roughly 200 trillion BTU.[27] Louisiana has received roughly $2.5 billion in federal funding (BIL).[13]

Current project allocations within the state:[14]

- USDA: 34 Grants and 5 Loans
- DOE: 14 Grants

---

[25]U.S. Energy Information Administration. "Louisiana State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=LA.
[26]United States Department of Energy. "State and Community Energy Programs Project Map - Louisiana." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-louisiana.
[27]U.S. Energy Information Administration. "Louisiana State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=LA#tabs-3.

- EPA: 3 Grants
- DOI: 2 Contracts and 5 Grants

G. Mississippi

Mississippi boasts a robust energy infrastructure. Pipelines crisscross the state, transporting natural gas, crude oil, and refined products. Major ports along the Gulf of Mexico and the Mississippi River handle the movement of coal, crude oil, petroleum coke, and refined petroleum products. While not as richly endowed with crude oil and natural gas as some of its neighbors, Mississippi holds the distinction of having the nation's largest nuclear power reactor and the 10th-largest petroleum refinery.[28] Along its Gulf Coast, a massive natural gas processing plant and a liquefied natural gas terminal further contribute to the state's energy landscape.

Mississippi's climate is characterized by long, hot summers, mild winters, and tremendous rainfall, creating ideal conditions for agriculture. Fertile soils, particularly in the Mississippi and Yazoo Rivers region, nurture valuable crops like soybeans, corn, and cotton. Although agriculture once played a central role in the state's economy, manufacturing has now taken the lead in gross domestic product (GDP). Key contributors to the state's economy include the manufacture of motor vehicles and other transportation equipment, food, beverage, and tobacco products, machinery, wood products, and petroleum and coal products.

Despite its energy resources, Mississippi consumes about three times more energy than it produces.[30] The state's energy-intensive economy ranks sixth in the nation regarding energy used per dollar of GDP. The industrial sector is the largest energy consumer, accounting for nearly two-fifths of the state's total energy use. Transportation follows closely at about one-third, while

---

[28]U.S. Energy Information Administration. "Mississippi State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=MS.

the residential and commercial sectors account for slightly less than one-fifth and one-seventh, respectively.[30] The high demand for electricity for cooling in the summer and heating in the winter, coupled with the state's energy-intensive industries, ranks Mississippi among the top one-third of states in per capita energy consumption. This places an extreme need for continued efforts to improve energy efficiency and explore renewable energy sources.

Mississippi has enacted 79 energy-related bills[10] and has received $16.9 million from WAP and $5.3 million from SEP.[29] The state produces a variety of different kinds of energy infrastructures, including nuclear electric power, crude oil, wood/waste, coal, and natural gas.[30] Mississippi has received $1.7 billion in federal funding (BIL).[13]

Current project allocations within the state:[14]

- USDA: 49 Grants, 5 Loans, and 1 Other
- DOE: 10 Grants
- EPA: 5 Grants
- DOI: 1 Grant

H. North Carolina

While lacking in fossil fuels, North Carolina is a leader in solar power and has significant potential for offshore wind energy development. Its vast woodlands, covering nearly three-fifths of the state, offer a rich biomass energy source, supporting both renewable power generation and

[29]United States Department of Energy. "State and Community Energy Programs Project Map - Mississippi." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-mississippi.
[30]U.S. Energy Information Administration. "Mississippi State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=MS#tabs-3.

a thriving forestry industry. Furthermore, the state's rivers provide hydroelectric power to many communities. Complementing these natural resources, North Carolina also ranks among the nation's leading nuclear power-producing states.[31]

Despite its diverse energy portfolio, North Carolina consumes almost four times more energy than it produces. However, the state's per capita energy consumption remains relatively low, ranking among the lowest one-third of states.[33] This can be attributed partly to North Carolina's diverse economy, which includes a strong agricultural sector, a growing manufacturing base, and a thriving service sector. The transportation sector emerges as the largest energy consumer in North Carolina, driven by the state's extensive highway system and busy airports. Residential energy use follows closely behind, influenced by climate and housing characteristics. The commercial and industrial sectors also play significant roles in the state's energy consumption, with energy-intensive industries like chemical manufacturing and food processing contributing substantially to the overall demand.

North Carolina has enacted 161 bills since 2008[10] and has received $45.7 million from WAP and $10.7 million from SEP towards energy-related initiatives.[32] According to the U.S. Energy Information Administration, the state only produced three types of energy in 2022: nuclear electric power, wood/waste, and noncombustible renewables.[33] North Carolina has received a total of $4.2 billion in federal funding (BIL).[13]

---

[31]U.S. Energy Information Administration. "North Carolina State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=NC.
[32]United States Department of Energy. "State and Community Energy Programs Project Map - North Carolina." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-north-carolina.
[33]U.S. Energy Information Administration. "North Carolina State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=NC#tabs-3.

Current project allocations within the state:[14]

- USDA: 41 Grants, 88 Loans, and 2 Other
- DOE: 6 Contracts, 68 Grants, and 6 Other
- EPA: 1 Contracts IDV, 7 Contracts, and 12 Grants
- DOI: 1 Contract and 3 Grants

I. South Carolina

South Carolina is a state characterized by its growing energy demands. The state's topography transitions from the Atlantic Ocean's sandy shores and barrier islands to the Blue Ridge Mountains' rugged peaks, encompassing various landscapes, including coastal plains, swamps, and forested hills. This varied terrain, ample sunshine, and flowing rivers provide South Carolina with various renewable energy resources.

While lacking in economically recoverable fossil fuels, South Carolina is a significant producer of nuclear power, which plays a key role in meeting the state's energy needs. The state also harnesses the power of its rivers and lakes for hydroelectric generation. Furthermore, South Carolina benefits from abundant biomass from its extensive forests and wood processing industries, as well as methane captured from landfills in more populated areas.

Despite these resources, South Carolina consumes more than twice the amount of energy it produces.[34] This highlights the state's growing energy demands, driven by population growth, economic development, and the increasing prevalence of energy-intensive industries. The industrial sector emerges as the largest energy consumer in South Carolina, fueled by manufacturing activities that contribute significantly to the state's GDP.[36] These include the

---

[34]U.S. Energy Information Administration. "South Carolina State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=SC.

production of chemicals, motor vehicles, electrical equipment, paper and wood products, plastics, machinery, and food and beverages. The transportation sector also plays a major role in energy consumption, primarily due to gasoline and diesel fuel used for road transportation. As South Carolina continues to attract new residents and tourists with its coastal beauty and mild climate, the residential and commercial sectors also contribute to the state's overall energy consumption.

South Carolina has enacted 81 energy-related bills since 2008[10] and has received $19.7 million from WAP and $6.6 million from SEP towards energy-related initiatives.[35] According to the U.S. Energy Information Administration, the state only produced three types of energy in 2022: nuclear electric power at 568.1 trillion BTU, wood/waste at 110 trillion BTU, and noncombustible renewables at 18.2 trillion BTU.[36] South Carolina has received a total of $2.2 billion in federal funding (BIL).[13]

Current project allocations within the state:[14]

- USDA: 1 Contract IDV, 24 Grants, and 8 Loans
- DOE: 2 Contracts, 23 Grants, and 4 Other
- EPA: 1 Grant
- DOI: 1 Contract IDV

J. Tennessee

[35]United States Department of Energy. "State and Community Energy Programs Project Map - South Carolina." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-south-carolina.
[36]U.S. Energy Information Administration. "South Carolina State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=SC#tabs-3.

Tennessee, a state that stretches across 400 miles from the Appalachian Mountains in the east to the Mississippi River in the west, is characterized by its role as a major transportation hub.[37] The state's landscape is divided into three distinct regions: the mountainous east, a central basin, and the rolling plains of the west. Tennessee's westernmost city, Memphis, is a critical junction for barge, air, truck, and rail cargo traffic, highlighting the state's importance in national logistics.

While Tennessee possesses modest coal, natural gas, and crude oil reserves in its eastern region, its energy landscape is dominated by the Tennessee Valley Authority (TVA). This government-owned entity operates a vast network of power generation facilities, including hydroelectric dams, nuclear plants, fossil fuel-fired plants, and renewable energy sources. The TVA's presence in Tennessee significantly impacts the state's energy mix and accessibility to residents and businesses.

Tennessee is a major energy consumer, ranking among the top one-third of states in total energy consumption.[39] This high demand is driven by a combination of factors, including the state's expansive size, transportation hub role, and thriving manufacturing sector. The transportation sector, in particular, accounts for more than three-tenths of Tennessee's total energy consumption, reflecting the significant movement of goods and people across the state.

Manufacturing also plays a crucial role in Tennessee's economy and energy use. The industrial sector accounts for about one-fourth of the state's energy consumption, with key contributors including the production of food, beverages, tobacco products, motor vehicles, chemicals, fabricated metal products, and paper. While Tennessee's energy consumption per

---

[37]U.S. Energy Information Administration. "Tennessee State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=TN.

dollar of GDP is above the national average, it ranks near the middle of the states, indicating a balance between energy use and economic output.

Tennessee has enacted 132 energy-related bills since 2008[10] and has received $45.2 million from WAP and $9.9 million from SEP.[38] Much like North and South Carolina, the state of Tennessee produces three types of energy, nuclear electric power, wood/waste, and noncombustible renewables, with the addition of a small amount of natural gas production at 3.1 trillion BTU.[39] The state has received a total of $3 billion in federal funding (BIL).[13]

Current project allocations within the state:[14]

- USDA: 50 Grants and 3 Loans
- DOE: 8 Contract IDVs, 34 Contracts, and 34 Grants
- EPA: 3 Grants
- DOI: 1 Grant

K. Texas

Texas dominates the nation in energy production, contributing roughly a quarter of all domestically produced primary energy.[40] Its vast landscape, second in size only to Alaska, spans approximately 800 miles at its widest points and encompasses diverse energy resources. Crude oil and natural gas fields are widespread, while coal deposits are concentrated in bands across the

---

[38]United States Department of Energy. "State and Community Energy Programs Project Map - Tennessee." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-tennessee.
[39]U.S. Energy Information Administration. "Tennessee State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=TN#tabs-3.
[40]U.S. Energy Information Administration. "Texas State Profile and Energy Estimates." EIA.gov. https://www.eia.gov/state/analysis.php?sid=TX.

eastern coastal plain and other areas in the north-central and southwestern parts of the state. Beyond fossil fuels, Texas is a leader in renewable energy. It ranks first in the nation for wind-generated electricity, harnessing the power of its vast plains and abundant wind resources.[42] The state also boasts significant solar energy potential, with ample sunshine covering its expansive territory. Geothermal resources suitable for power generation are found in eastern and southern Texas, adding another dimension to its renewable energy portfolio. Texas also possesses significant uranium reserves, the fuel for nuclear reactors, and is home to a developing project for mining rare earth elements and other critical minerals essential for various energy technologies.

As the second most populous state with the second-largest economy in the nation, Texas has a correspondingly high energy demand. It leads all states in energy consumption, accounting for about one-seventh of the nation's total energy use. However, because its energy production far surpasses its consumption, Texas holds the crucial position of being the nation’s largest net energy supplier. The industrial sector is the biggest energy consumer in Texas, driven by energy-intensive industries such as chemical manufacturing, oil and gas extraction, and petroleum refining. This sector accounts for over half of the state’s total energy consumption and a significant portion of the nation's total industrial energy use.[42] Transportation represents Texas's second-largest end-use energy consumer, fueled by the movement of goods and people across its vast distances.

Texas experiences a varied climate, ranging from humid and subtropical along the Gulf Coast to arid in the mountainous west. This influences energy consumption patterns, particularly in the residential sector, where demand for cooling is high in the densely populated coastal regions. Despite this, the residential sector accounts for only a small portion of the state's total

energy consumption. However, due to its large population, Texas still leads the nation in total residential energy use.

Since 2008, Texas has passed 183 energy-related pieces of legislation[8] and has received $63.0 million from WAP and $28.6 million from SEP.[41] Texas energy production ranges from natural gas (13,334.7 trillion BTU), crude oil (10,497.2 trillion BTU), nuclear electric power, and noncombustible renewables.[42] As reported in March 2024, the Biden Administration has sent roughly $30.6 billion (BIL) in total.[43]

Current project allocations within the state:[14]

- USDA: 1 Contract, 58 Grants, and 12 Loans
- DOE: 2 Contract IDVs, 23 Contracts, 124 Grants, 1 Loan, and 1 Other
- EPA: 2 Contracts and 9 Grants
- DOI: 11 Contracts and 7 Grants

V. Final Thoughts

The Southeastern United States has witnessed a significant influx of federal funding to bolster its energy sector. This financial support has been instrumental in transitioning towards cleaner energy sources, enhancing energy efficiency, and fortifying the region's energy infrastructure.

---

[41]United States Department of Energy. "State and Community Energy Programs Project Map - Texas." Energy.gov. https://www.energy.gov/scep/articles/state-and-community-energy-programs-project-map-texas.
[42]U.S. Energy Information Administration. "Texas State Energy Profile." EIA.gov. https://www.eia.gov/state/?sid=TX#tabs-3.
[43]The White House. "FACT SHEET: Bidenomics Is Fueling the Texas Economy." October 2023. https://www.whitehouse.gov/wp-content/uploads/2023/10/Texas-Fact-Sheet.pdf.

From the research, it was found that all states but Texas consume more energy than it produces. States reliant on external sources for their energy needs expose themselves to price fluctuations and supply disruptions in the national energy market. This reliance can also increase the trade deficit and drain the state's economic resources. The DOE states that to help resolve this issue, expanding energy storage capacity is crucial to ensure grid stability and reliability, especially as renewable energy sources fluctuate with weather patterns.[44] As mentioned in each of the state's profiles, the climate in the Southeast can vary greatly depending on the state. The Southeast's hot and humid climate creates a complex energy landscape. The region's heavy reliance on air conditioning drives high electricity demands, so it is pulling from fossil fuels. This exacerbates the climate change that intensifies these conditions, creating a cyclical challenge where energy use contributes to the problem it seeks to solve. Programs like the Bipartisan Infrastructure Law and the Inflation Reduction Act have been pivotal in injecting capital into projects ranging from grid modernization and electric vehicle infrastructure to renewable energy development and workforce training.

However, the distribution and implementation of these funds have presented certain challenges. Disparities among states in securing and utilizing these resources have emerged. According to SEEA, "Energy burden disparities are stark in the Southeast, where energy costs for low-income households can exceed 20% of household income (HUD considers 6% the maximum for an energy bill to be affordable)."[45] They also stated that nearly a third of all households in the southern region, the most of any region in the country, reported experiencing challenges in meeting their energy needs.[47] This alarming statistic highlights the prevalence of

---

[44]United States Department of Energy. "Energy Independence and Security." Energy.gov. https://www.energy.gov/eere/energy-independence-and-security.

[45](SEEA), Southeast Energy Efficiency Alliance. "Energy Insecurity in the Southeast." ArcGIS StoryMaps, June 11, 2024. https://storymaps.arcgis.com/stories/4c4d46e0ae654156a83e77f5367beac2.

energy insecurity in the south compared to other regions in the country. Various factors, such as policy frameworks, project readiness, and administrative capacity can influence this issue. Ensuring equitable access to these funds for underserved communities and fostering a just transition for traditional energy sector workers remain crucial.

This report successfully assesses and presents the current environment of the eleven Southeastern states. As stated, its intended purpose is to aid others in understanding the landscape and potentially create more informed energy-related decisions in the country's Southeastern region. Continued federal investment and commitment are essential for the region to fully realize its clean energy potential. Addressing the existing disparities, streamlining administrative processes, and prioritizing equity and inclusivity will ensure these funding initiatives' effectiveness and long-term impact. The Southeast can establish a resilient, sustainable, and equitable energy landscape for future generations by capitalizing on these opportunities.

Appendix

Table 1: USDA Tableau

DOE Tableau

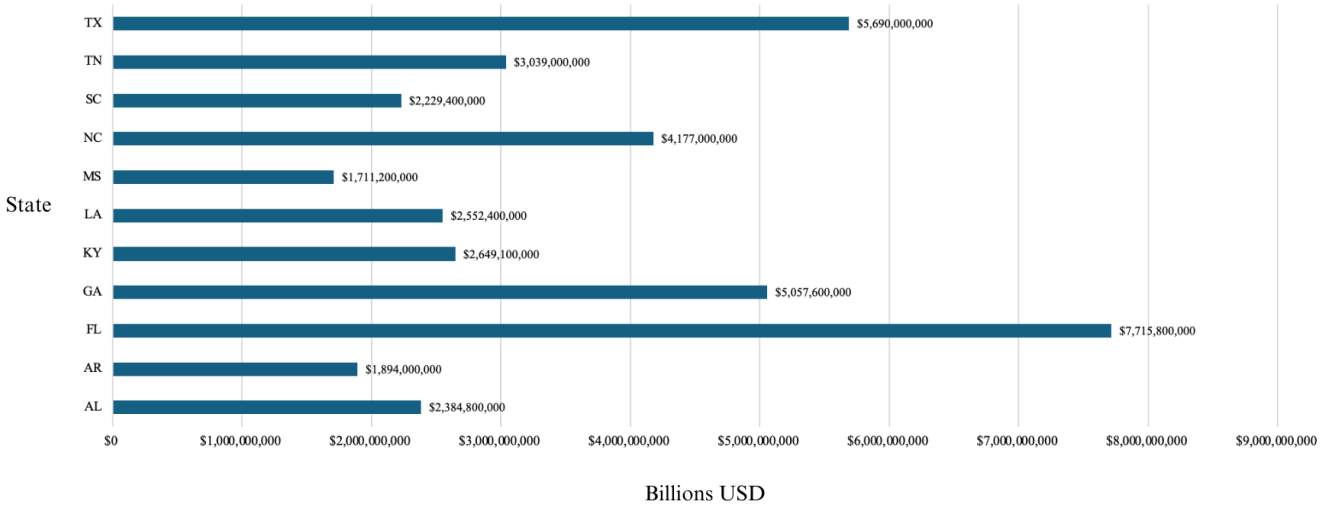
DOI Tableau

EPA Tableau

Table 2: Tableau

Table 3: Tableau

Table 4: Awarded Money from the Bipartisan Infrastructure Law



Southeast Energy Efficiency Alliance. (2023, December). Federal Funding Tracker - Southeast. Retrieved from https://www.seealliance.org/federal-funding-tracker-southeast/
Parker, Grace. Investing in the Southeast: Tracking Bipartisan Infrastructure Law Spending. Accessed December 8, 2024. https://www.seealliance.org/wp-content/uploads/BILReport_territories_FINAL.pdf.

Table 5: Number of US Programs Broken Down by Category

	State										
	Alabama	Arkansas	Florida	Georgia	Kentucky	Louisiana	Mississippi	North Carol..	South Caro..	Tennessee	Texas
Bond Program	0	1	0	0	0	0	0	0	0	0	0
Corporate Depreciation	1	1	1	1	1	1	1	1	1	1	1
Corporate Tax Credit	5	5	5	5	5	5	5	5	6	5	5
Corporate Tax Deduction	1	1	1	1	1	1	1	1	1	1	1
Corporate Tax Exemption	1	1	1	1	1	1	1	1	1	1	1
Grant Program	9	9	8	8	8	7	7	8	7	7	12
Green Building Incentive	0	0	4	1	0	0	0	0	0	0	0
Industry Recruitment/Support	1	2	1	1	1	1	2	1	2	2	2
Loan Program	9	7	13	11	7	5	6	14	12	9	8
PACE Financing	1	1	2	1	1	0	0	1	0	1	1
Performance-Based Incentive	0	0	1	0	0	0	0	0	0	0	1
Personal Tax Credit	5	5	5	6	5	5	5	5	7	5	5
Personal Tax Deduction	1	0	0	0	0	0	0	0	0	0	0
Property Tax Incentive	1	0	1	0	0	1	0	2	1	2	4
Rebate Program	6	11	37	16	20	13	17	29	17	3	63
Sales Tax Incentive	0	0	1	1	3	0	0	0	2	1	1
Total Number of Programs Offering a Financial Incentive	42	45	82	54	54	41	46	70	59	39	106

*DSIRE. "Database of State Incentives for Renewables & Efficiency." DSIREUSA.org. Accessed November 21, 2024. https://www.dsireusa.org/.

Table 6: Tableau