2. Energy Security and Efficiency

Purpose

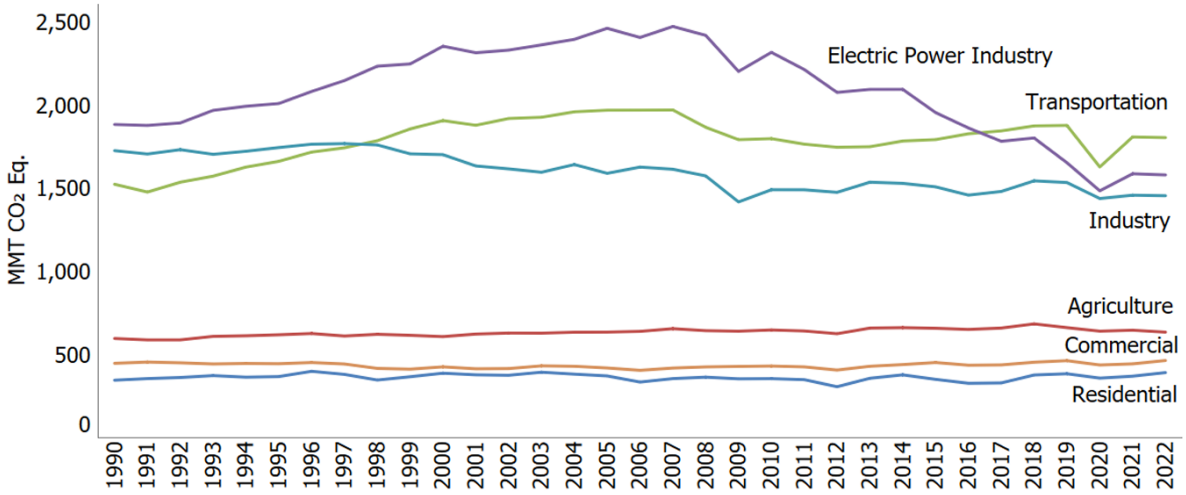
Accelerate progress towards net zero greenhouse gas emissions by transitioning from non-renewable energy fuels, purchasing from renewable energy sources, and increasing energy efficiency in buildings and infrastructure.

Introduction

Energy and Climate Change

The energy sector, through its reliance on fossil fuels, makes up the largest source of anthropogenic GHGs globally, primarily through transportation, electricity generation, and industry (Figure 2.1). In the United States, the electric power industry made up 25% of the country's GHG emissions in 2022, behind transportation (28%).[1] The commercial and residential sectors made up 7% and 6%, respectively (not including indirect electricity end-use emissions).[2] Between 2021 and 2022, only the commercial and residential sectors increased in GHG emissions, driven by higher demand for heating and cooling in buildings.[3] Because energy is a supply and demand side issue, there are many opportunities to decrease GHG emissions and decrease overall contribution to climate change.

[1] United States Environmental Protection Agency, *Data Highlights- Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2022,* 2024, 6.
[2] *Ibid* footnote 1, 6.
[3] *Ibid* footnote 1, 6.



Note: Emissions and removals from Land Use, Land-Use Change, and Forestry are excluded from figure above. Excludes U.S. Territories.

Figure 2.1: GHG emissions by sector, United States between 1990 to 2022[4]

According to the IPCC AR6, the two primary mechanisms for lowering energy demand and its associated emissions come from 1) reduced use of energy, or energy efficiency, and 2) generating new energy from non-fossil sources such as renewables.[5] Energy efficiency is typically much more financially and technically feasible for most communities, but alone it cannot completely reduce GHG emissions from energy. The transition towards renewable energy is also necessary for net zero, though it is a difficult and costly process.

Alachua County and Energy

Context and Limitations

It is important to first establish Alachua County's capabilities and limitations regarding the energy sector. The Alachua County government does not directly own or operate a utility company and is not considered a utility provider, choosing to work instead with local energy providers for residents' electricity needs (see Figure 2.2). In addition, the County faces certain challenges around local energy regulations due to State preemptions. The County thus has a limited ability to make significant changes to the energy sector without collaboration with utility companies, whose priority is to provide reliable, safe energy for their customers. Transitioning towards renewable

[4] EPA (2024). "Chapter 2: Trends in Greenhouse Gas Emissions and Removals." *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022*. U.S. Environmental Protection Agency, EPA 430R-24004. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022.
[5] Clarke et al., "Energy Systems," *IPCC Sixth Assessment Report,* 2022.

energy is often technically and logistically difficult, making it hard for utility companies to quickly phase out non-renewables without jeopardizing energy supply.

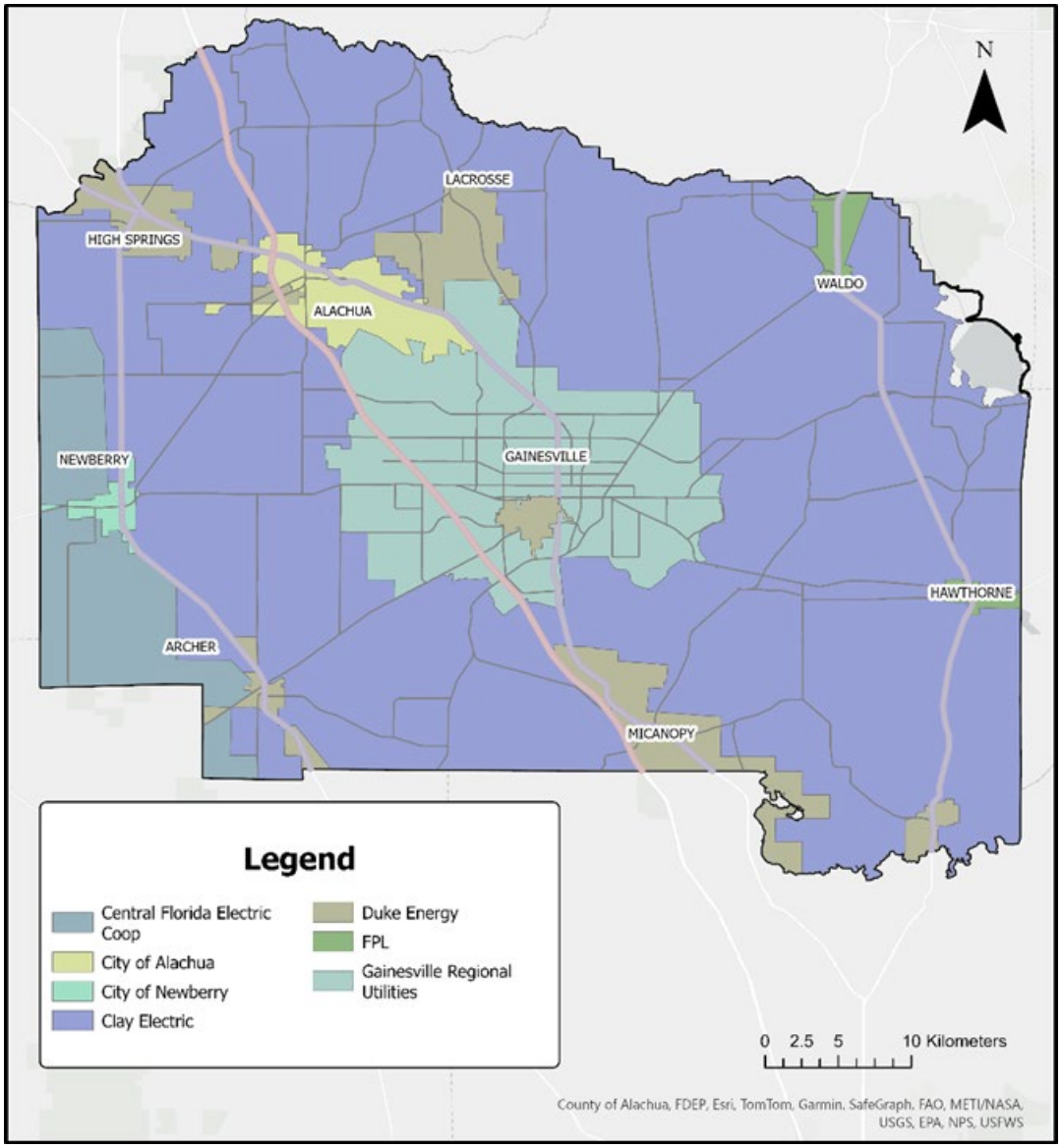


Figure 2.2: Utility Providers in Alachua County

Staying within the County's realm of influence, this CAP focuses on renewable energy, electrification, and energy efficiency, with energy use relating to transportation addressed in a different chapter on Land Use and Transportation (although electric vehicle infrastructure is included as part of the County's electrification strategies).

GHG Emissions from Energy

The 2022 Alachua County Greenhouse Gas Inventory, which used 2019 data, updated the County's emissions data from the first 2001 report, issued using 1998 data. The County's 2009 report did not include countywide data. Figure 2.3 below shows a countywide comparison between those sectors which were measured during both reports.

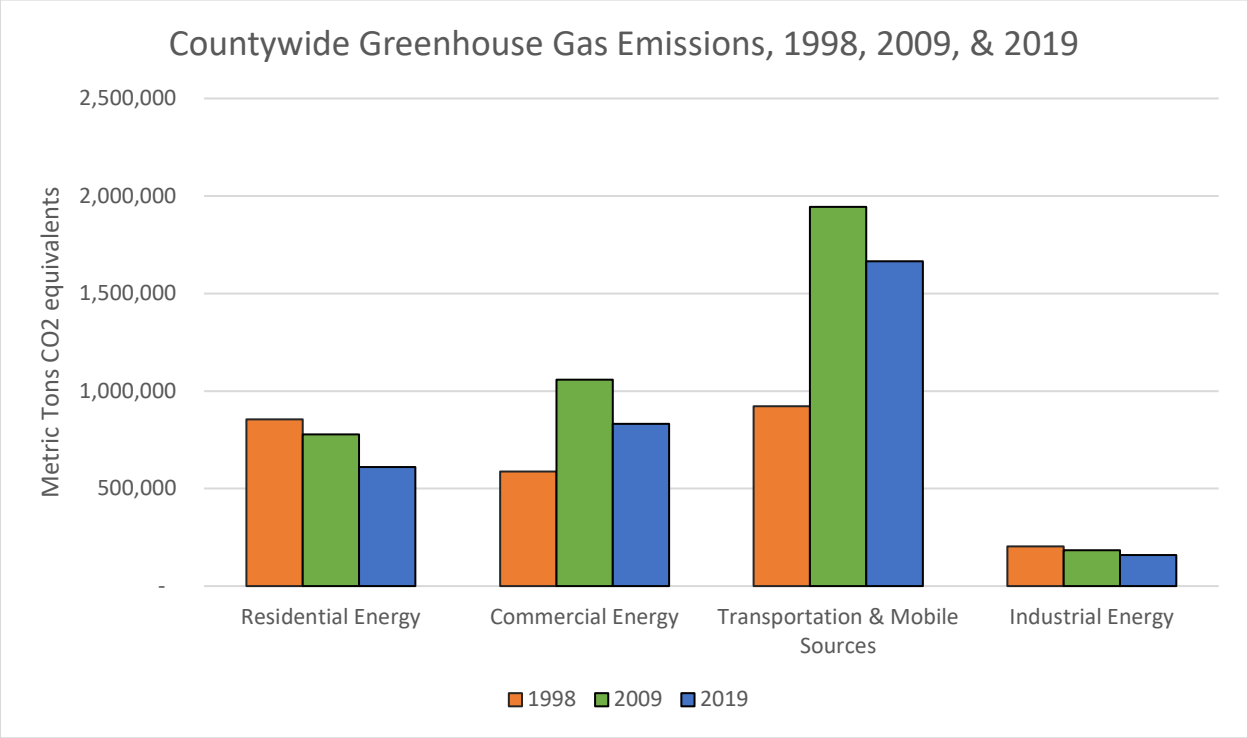


Figure 2.3: Countywide Greenhouse Gas Emissions in 1998, 2009, and 2019 as reported in three ICLEI reports commissioned by Alachua County

The last 20 years have shown a decrease in energy-related emissions production within the residential and industrial sectors and an increase in commercial and transportation-related emissions. While the International Council for Local Environmental Initiatives (ICLEI) (the orgnaization which completed all three reports) did not provide margins of error, the data can provide general guidance for understanding changing emission vectors over time.

Figure 2.3 shows only the sectors which are the same between the three reports; however, the 2019 report contains data on two additional sectors, "Water & Wastewater" and "Process & Fugitive Emissions" which provide additional context for countywide energy-related emissions production. Figure 2.4 shows where these and the above sectors rank proportionately in terms of greenhouse gas production.

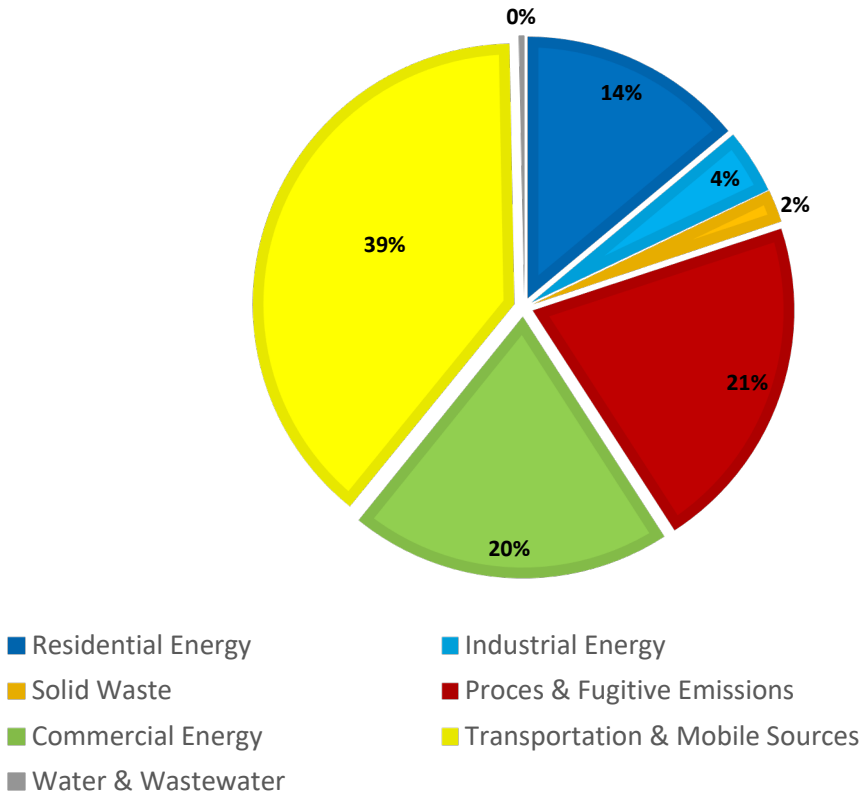


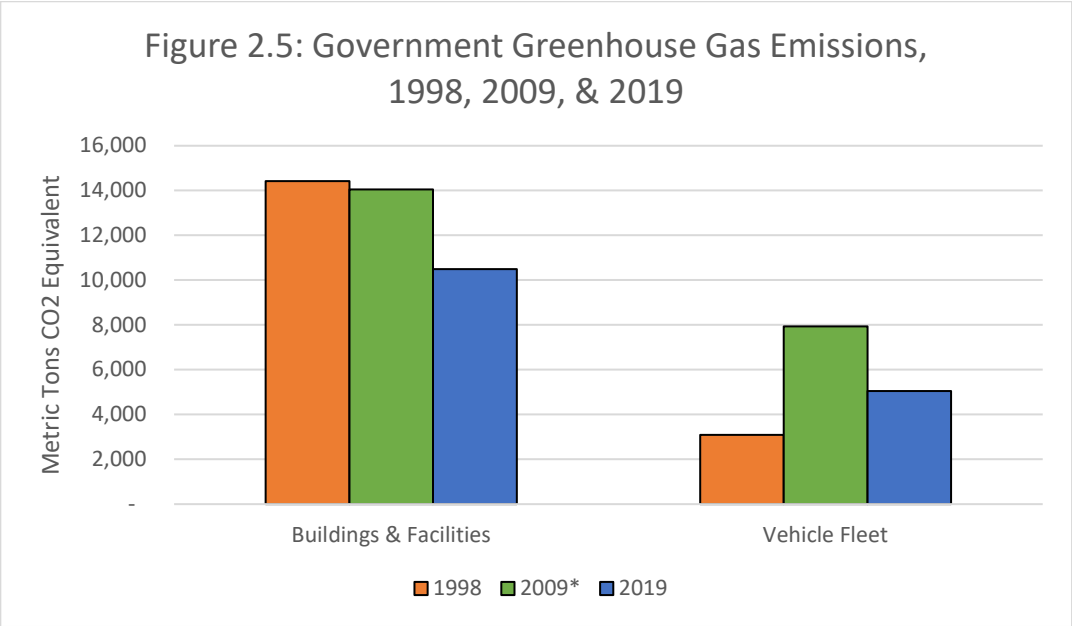
Figure 2.4: Countywide Emissions by Sector from the 2019 Greenhouse Gas Inventory

Alachua County's energy strategy is strongly based on where the municipal government has direct influence. For example, Alachua County does not own the local bus service, making the highest emitting sector, "Transportation & Mobile Services" (39%), difficult to impact directly (strategies around transportation infrastructure more broadly can be found in the Land Use and Transportation Chapter of this document).[6] The next highest emitter, "Process & Fugitive Emissions" was not included in the 1998 or 2009 reports, and the 2019 report links these emissions primarily to energy production related to local utilities.[7] While the County has sent representatives when requested to Integrated Resource Planning (IRP) exercises with local utilities, the County government has little influence on energy production at local utilities. As you will see in this chapter, Alachua County has developed strategies prioritizing overall greenhouse gas impact in areas where the County exercises the strongest jurisdiction.

Alachua County's influence is greatest over its own internal operations. Alachua County is dedicated to being a leader in climate mitigation and adaptation, and as such has tracked its own

[6] International Council for Local Environmental Initiatives, *2019 Inventory of Community and Government Operations Greenhouse Gas Emissions,* 2022, 6.
[7] *Ibid* footnote 6, 6.

energy-related greenhouse gas production over the last twenty years (Figure 2.5). Emissions tracking across these three reports varies widely, with items such as streetlights appearing in early reports but not later ones. In the 2019 analysis, ICLEI indicates that only two sectors have strong across-time comparability, and these are outlined in Figure 2.5.



*2009 data was adjusted by ICLEI between the 2009 and 2019 report to standardize the computation practices to AR5 Global Warming Potentials. 2009 data in chart is drawn from the 2019 report.

Figure 2.5: County Government Greenhouse Gas Emissions in 1998, 2009, and 2019 as reported in three ICLEI reports commissioned by Alachua County

A full breakdown of County government emissions (Figure 2.6) identifies County buildings and facilities as producing over half (53%) of total government operations emissions, attributed directly to electricity use. Second to that was the energy used to power the County fleet (25%), followed by the carbon price of employee commutes (20%).[8]

[8] *Ibid* footnote 6, 6.

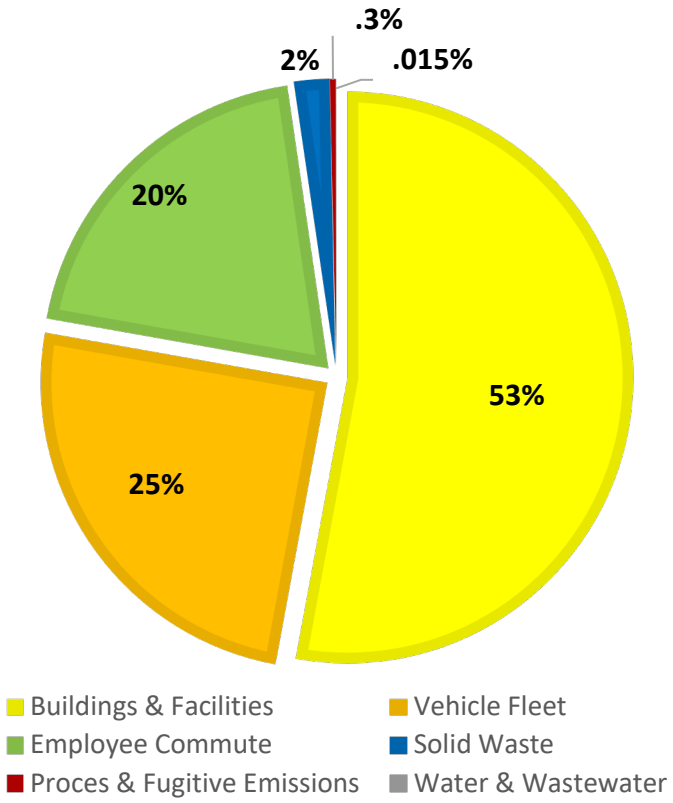


Figure 2.6: Alachua County Government Operations by Sector, 2019 Greenhouse Gas Inventory

Energy Infrastructure, Efficiency, and Affordability

Due to aging infrastructure and the cost premium of many energy-efficient products, Alachua County's lowest-income residents regularly experience the highest energy usage and utility bills. This phenomenon, known as "energy burden" occurs when a household is spending over 6% of their income on energy bills, and a severe energy burden is when a household spends over 10%.[9] Twenty-two (22) Census Tracts in Alachua County are considered to have a "high" or "severe" energy burden, with residents in these communities paying a higher percentage of their income towards utilities than 85% of other Americans. Seven (7) of these Census Tracts pay more than 95% of their fellow Americans (Figure 2.7).

[9] American Council for Energy Efficient Economies, *Energy Burden Report,* 2020.

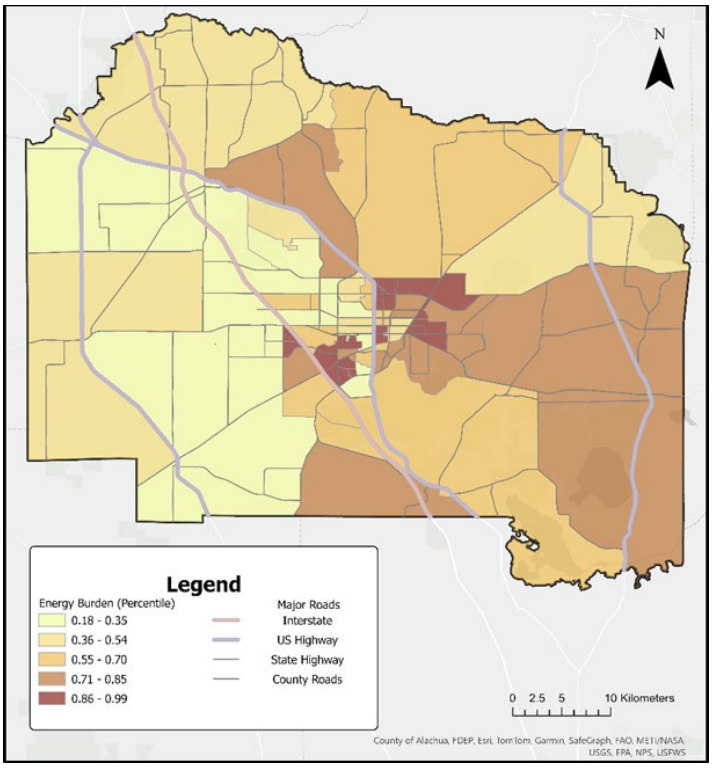


Figure 2.7: Energy burden by Census Tract, Alachua County, FL. Energy burdened percentile is relative to other Census Tracts nationally.

Energy burden can be addressed most effectively by increasing energy efficiency in households, a mechanism which can decrease utility bills substantially (reducing some financial strain) while also lowering GHG emissions (see the "Past and Current Efforts" section of this document, for more information on how Alachua County is addressing this). In addition, bringing down the cost of electricity, such as through increasing the amount of solar energy on the electrical grid (which has a consistent, low-cost of inputs compared to fossil fuel sources, and has become increasingly affordable to construct), can be a secondary, long-term goal of addressing these high energy burden communities.

Alachua County Comprehensive Plan

Alachua County's Comprehensive Plan has a chapter devoted to energy, which establishes the following goal:

"Reduce greenhouse gas emissions and fossil fuel consumption; mitigate the effects of rising energy costs; and promote the long-term economic security of Alachua County through energy conservation, energy efficiency and renewable energy production."

The Plan lays out three priorities as part of its reduction strategy:

1. Practice energy conservation
2. Maximize energy efficiency
3. Promote and invest in renewable energy production

Energy conservation refers to reducing energy use by changing behaviors and habits. This work involves education and information campaigns directed at the public, as well as Alachua County employees to reduce energy usage internally. Energy efficiency involves using technology to use less energy. This can involve things like building upgrades, as well as integrating passive design principles into new construction and major renovations. Finally, renewable energy refers to energy generation through renewable sources such as solar and biomass.

The County's Comprehensive Plan also identifies a specific energy reduction target to "reduce countywide greenhouse gas (GHG) emissions by 80% from 2009 baseline emissions by 2050."[10] To meet this goal, the Comprehensive Plan identifies target areas, the following of which will be addressed in this chapter:

- the built environment (including both the public and the impact of County government buildings);
- renewable energy generation;
- education and public information;
- intergovernmental and community collaborations.

For a full accounting of the County's energy-related policies and objectives, see Appendix B.

Past and Current Efforts

The Built Environment: Energy Efficiency

Alachua County Energy Efficiency Program (ACEEP)

Alachua County leads the country in energy efficiency programs for low-income residents. Through American Rescue Plan Act funding (also known as COVID-relief dollars), the County developed an innovative program aimed at improving the home energy efficiency of the County's lowest-income residents. Lowest-income residents are energy-burdened renters making 50% Area Median Income (AMI) or less. This program provides up to $15,000 per housing unit for energy

[10] Alachua County Comprehensive Plan, Energy Element, Objective 1.1.

efficiency improvements including insulation, new HVAC systems, new water heaters, and certain new Energy Star appliances. In return, landlords sign an agreement with the County to not raise rent beyond inflation for up to 7 years, and to keep their rental unit on the market for the entirety of that time. The program was awarded a technical assistance grant from the American Council for an Energy-Efficiency Economy, which helped to develop the program with the help of national experts, using the best practices from similar programs across America.

After a two-year pilot, ACEEP was approved to move into a full program in November 2024. In addition to working with existing residents, the program allows small business owner landlords to bring new units onto the market through the program, helping to create new, energy-efficient affordable housing options locally.

Cenergistics: Alachua County Customized Energy Conservation Program

To help the County with internal energy use, the Alachua County government contracted with Cenergistics LLC to provide energy specialists to develop a customized energy conservation program for County facilities. This contract uses machine learning to analyze County energy use patterns and develop resources and use that data to educate employees and the community about energy-saving practices and to encourage behavioral changes that can lead to significant reductions in energy consumption. Alachua County set a goal of a 10% energy reduction by 2025. By 2023, Alachua County government buildings reached a 27% reduction in non-renewable energy use per square foot, also known as Energy Use Intensity (EUI), down from 2019 levels, the earliest data from Cenergistics tracking (Figure 2.8). While some percentage of this increase can be attributed to the general shut down of County buildings during the COVID-19 pandemic, the lower rates of energy use remained stable in 2023 when County personnel had largely returned to the office.

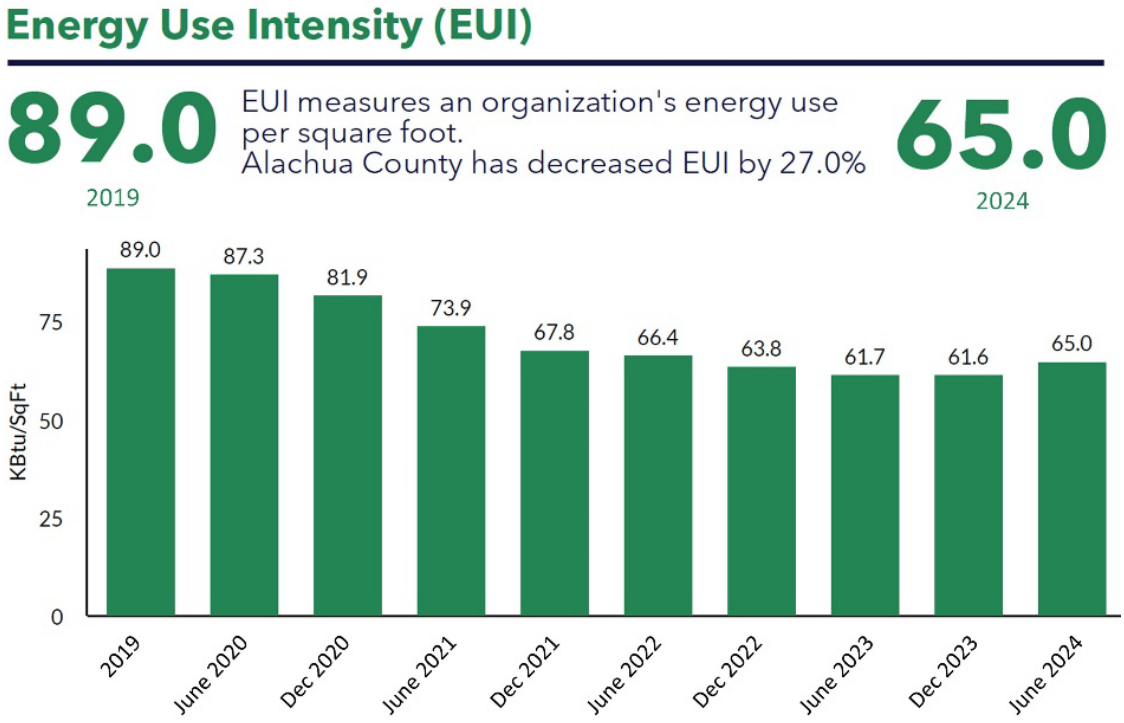


Figure 2.8: Alachua County Bi-Annual Energy Use Intensity (EUI) from Government Buildings, 2019 – 2024. EUI is calculated based on energy use per square foot for all County Government Buildings. EnergyCAP Database, via Cenergistics LLC

Cenergistics calculated the carbon dioxide emissions reduction of this effort to be 11,287 metric tons of CO_2 avoided, equivalent to the avoided burning of over 12 million pounds of coal.

Renewable Energy

The County's Comprehensive Plan outlines the following goal for renewable energy:

The County's goal by 2030 is that 100% of energy purchased or produced for County facilities be from solar photovoltaic sources, with an interim target of 50% by 2025.

Alachua County is currently pursuing two strategies for meeting this goal: constructing County-owned solar installations, via the Energy Conservation Investment Program (ECIP) and other funding sources and working with energy providers to produce solar energy for purchase as part of the larger energy grid.

Current Solar Installations

Alachua County has eight (8) solar installations on or at facilities, totaling 654.64 kW of installed solar (Figure 2.9).

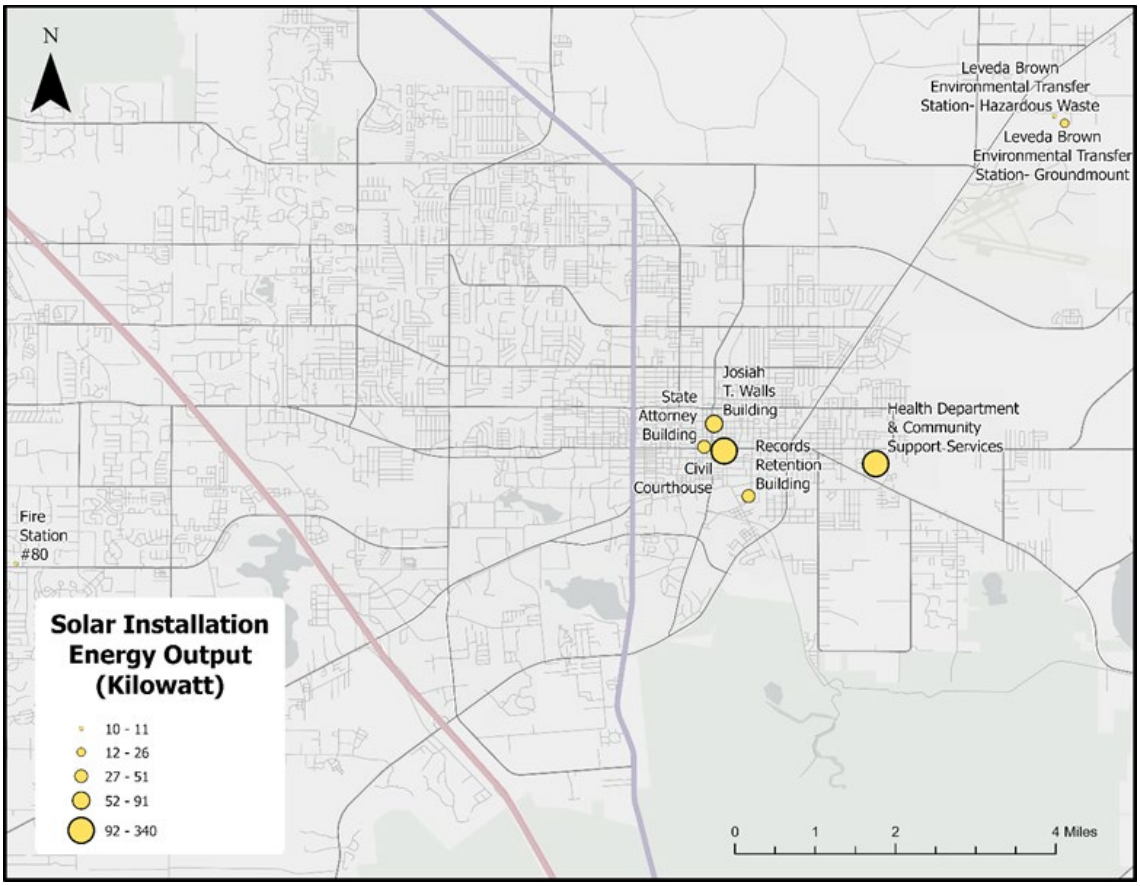


Figure 2.9: Current solar installations on County-owned buildings, including size of system (kW)

Energy Conservation Investment Program

The Energy Conservation Investment Program (ECIP) funds capital projects that meet the County's energy and utility objectives as found in the Comprehensive Plan and Financial Policies. This program aggregates the utility savings from existing solar installations and uses them to fund new solar installations. Currently, five (5) of the existing eight (8) installations were funded all or in part from ECIP funds.

The Inflation Reduction Act provides the option for local governments to receive rebates for solar installations. Currently, two of Alachua County's largest solar installations, the Health Department and Civil Courthouse, are eligible for this rebate in fiscal year 2024. The rebate, which would likely total 30% of project costs, would open the option to begin a new installation in the next few years.

Purchased Energy

Clay Electric

Clay Electric is a cooperatively owned not-for-profit energy company that covers the majority of the unincorporated areas of Alachua County (see Figure 2.2). The company is one of nine co-ops which collectively own the Seminole Electric Cooperative, which generates the energy distributed by the company.[11] Per their website, Seminole Electric Cooperative retired one of their coal-fired power generation facilities in 2023,[12] but continue to generate 736 MW of coal-fired energy today as of this writing. They operate two (2) gas-powered combined-cycle facilities which produce approximately 1,970 MW of power, and one (1) 2.2 MW solar facility. In addition, Seminole has a Power Purchase Agreement with four (4) solar power installations named Columbia County Solar, Gadsden County Solar, Gilchrist County, and Tupelo Solar in Putnam County totaling 298 MW of renewable solar energy.[13] Based on these numbers, Clay Electric customers on average receive approximately 10% of their electricity from solar energy.

Duke Energy

Duke Energy is the primary energy provider for several Alachua County small municipalities including High Springs, LaCrosse, parts of Alachua, Archer, and Micanopy, as well as providing electricity to much of the University of Florida (see Figure 2.2). Duke Energy produced around 750 MW of solar for Florida counties from 2022 to 2024 through the creation of ten (10) solar energy sites in the State, with one of those sites, the High Springs Renewable Energy Center, completed in Alachua County in April 2023. The 74.9 MW facility brings Duke Energy's total carbon-free energy production to 1.2GW nationwide.[14]

Gainesville Regional Utilities (GRU)

Because Gainesville Regional Utilities (GRU) is the primary energy provider for County facilities, their percentage of renewable energy impacts the County's sustainable use of energy. Renewables currently make up 31.4% of GRU's generated energy. The Deerhaven Renewable Generating Station produces the majority of this energy (30%) by using wood waste (biomass). GRU also captures landfill gas and converts it into enough energy for 2,100 homes for a year. While this power is considered renewable, it is not "from solar photovoltaic sources" per the County's goal in the Comprehensive Plan.

As of June 2025, the leadership at GRU is being determined by the courts after a ballot initiative passed in November 2024 which would turn GRU leadership over to the City of Gainesville.

[11] Clay Electric, "Quick Facts"
[12] Seminole Electric Cooperative, "2023 Year in Review," 2023.
[13] Seminole Electric Cooperative, "Generation."
[14] Reitz, "Duke Energy cuts ribbon on High Springs solar site," *Main Street Daily News,* 2023.

Because this is an ongoing legal question, it is not possible to predict the organization's future in renewable energy.

SolSmart Silver Awardee

In 2019, the County was recognized as a SolSmart Silver Awardee, signifying a commitment to reducing barriers to solar adoption. This designation reflects the County's efforts to streamline permitting processes, modernize zoning codes, and foster a supportive environment for residential and commercial solar energy.

Community Collaborations and Programming

Project EMPOWER

In order to minimize the energy sector's impact on climate change, Alachua County has engaged actively with the community to promote sustainable energy resiliency. Through the Department of Energy's (DOE) Communities Local Energy Action Program (LEAP), Alachua County departments and residents developed the EMPOWER Coalition, a community-led project that "evaluates the benefits and challenges of developing solar project in low-income neighborhoods." EMPOWER ensures that the voices of communities who are often unheard are amplified in conservations and policies surrounding sustainable energy. The EMPOWER Coalition recently received a second round of technical assistance through the DOE Communities LEAP Second Cohort.

Energy Services for Renters, ACEEE Technical Assistance Grant

The County's work with the Alachua County Energy Efficiency Program caught national attention when it was awarded the American Council for an Energy-Efficient Economy (ACEEE) technical assistance grant. This grant has allowed the County and its contractors, Rebuilding Together North Central Florida and the Community Weatherization Coalition, to conduct survey work for both landlords and renters to get their feedback on the program and energy use more broadly. Additional focus groups with landlords were conducted to get more detail on the survey results in order to build a program build on best practices nationally.

Weatherization Coordination Task Force

Alachua County has been leading monthly conversations between organizations doing weatherization and energy efficiency improvements for County residents. This group includes representatives from the Community Weatherization Coalition, Gainesville Regional Utilities LEEP^{Plus} program, and the City of Gainesville Community Reinvestment Area. This regular meeting has allowed the organizations to share ideas, develop outreach materials, and workshop strategies for addressing weatherization and energy efficiency needs in the County.

Program Highlight

ACEEP and Community Partners

ACEEP would not have been possible without the help of community partners. During the pilot program phase of ACEEP, Alachua County contracted with Rebuilding Together North Central Florida and the Community Weatherization Coalition (CWC) to identify property owners and complete individual projects. This collaboration assisted in the process of developing the final version of ACEEP by collecting feedback from program participants. Under the current ACEEP contract, Rebuilding Together assists in coordinating between property owners, tenants, and local contractors to determine the quotes for the energy efficiency upgrades. Rebuilding Together and the CWC also record output measures by periodically following up with program participants and each upgrade that was made.

14.7 tCO_2e is equivalent to:

1,650 gallons of gasoline consumed

5.1 tons of waste recycled instead of landfilled

16,201 pounds of coal burned

Reductions from 17.2 acres of US forests in one year

The combination of local organizations, County staff, and funding have greatly assisted in collecting the information necessary for the success of the program. Since July 25, 2025, 86 ACEEP tune-ups were completed and 19 units completed upgrades. The average cost of energy efficiency upgrades is around $13,760 (under the $15,000 maximum). After 7 years, each unit on average saves over 28,000 kWh of energy, $2,800 on utility bills, and 14.7 tons of CO_2 equivalent (tCO_2e). For the 19 units that participated in ACEEP, over 250 tCO_2e will be avoided (this number includes several units which will participate for only 5 years).

Programs such as ACEEP sit at the intersection of climate mitigation, climate adaptation, and affordable housing. The energy efficiency upgrades provided by the program reduce the amount of greenhouse gases being emitted by residential homes that would otherwise be the least likely to receive weatherization investment, while also improving the ability of the home to retain livable conditions through extreme heat and storms. By focusing the program on rental units and tying in an affordability commitment by the landlords to minimize rent increases, affordable homes are kept on the market, contributing to affordable housing in a way that new development cannot. As discussed in the Introduction Chapter, this program reinforces critical climate success factors by maintaining and supporting current organizations who are already doing on-the-ground work for their communities.

Strategies and Action Items

Goal 2.1 – Energy Efficiency and Conservation

STRATEGY 2.1.1 – Emphasize energy efficiency and conservation to maximize cost efficiency and social responsibility

In their 2021 paper, "Optimal strategies for a cost-effective and reliable 100% renewable electric grid," NREL researchers point to demand-side strategies as a critical bridge to move communities towards renewable energy-dominated electrical grids.[15] In other words, how much energy residents use and when they use it makes a big difference in what a renewable energy grid could look like. Energy efficiency (for example, energy-efficient lightbulbs) and conservation behaviors (such as turning off lights when not in use) can play a major role in reducing energy demand without sacrificing comfort and affordability.

For Alachua County, this goal represents a win-win-win for people, the environment, and the economy. According to the US Department of Energy (DOE), between $200 and $400 of the $2,000 Americans spend on energy each year comes from "waste from drafts, air leaks around openings, and outdated heating and cooling systems."[16] This is not only money that can be saved by residents, but energy that can be saved by utilities. While County programs such as ACEEP are addressing this, achieving Countywide maximum energy efficiency will require more intensive energy efficiency programs for municipal, commercial, and residential buildings.

It is important to ensure that energy reductions are made without sacrificing the comfort and convenience of homes or buildings. The hotter days and stronger storms anticipated in the coming decades have made it clear that cool, sealed homes are essential, not a luxury. The following action items are recommendations to strengthen the Comprehensive Plan's goals of lowering emissions and promoting energy efficiency.

Table 2.1: Action Items for Emphasize Energy Efficiency and Conservation to Maximize Cost Efficiency and Social Responsibility (Strategy 2.1.1)

Action Items	Jurisdiction	Benefits	Barriers	Status
Reduce energy use in County-owned buildings without sacrificing government services or	Local government	Most cost-effective mechanism for meeting energy	Efficiency gains (in energy and taxpayer	**Current**

[15] Houssainy and Livingood, "Optimal strategies for a cost-effective and reliable 100% renewable electric grid," Journal of Renewable and Sustainable Energy, 2021.
[16] United States Department of Energy, "Why Energy Efficiency Matters."

the healthiness of the workplace		goals. Capitalizes on vertical integration of solar energy production goal by reducing the energy load that panels need to cover. Improves efficiency of taxpayer dollars.	dollars) are not obvious to residents. Retrofitting existing locations can be expensive.	
Improve private sector energy efficiency: Commercial & Residential	Private owners, government incentives in some jurisdictions, State-level preemptions	Quick returns on investment for owners who secure upgrades.	State-level preemptions prevent building code upgrades for larger-scale adoption.	**New/Not started**
Promote energy efficiency locally as a mechanism to promote affordable housing (with a focus on rentals and low-income homeowners)	Private owners, government incentives in some jurisdictions, State-level preemptions	Quick returns on investment. Prioritizing low-income units keeps affordable housing on the market and helps homes that are otherwise unlikely to upgrade.	For rented spaces, there is a disconnect between property owner with authority to install & tenant who pays utility bills.	**Current**

Goal 2.2 – Electrification

STRATEGY 2.2.1 *– Promote energy independence through electrification.*

Electrification is the process of transitioning from fossil fuels to electricity as an energy source. Alachua County considers this a key pathway towards energy independence, energy affordability, and climate action for the following reasons:

- Renewable energy is domestically produced (even locally produced) energy and very price stable. This makes it the most dependable, economical option for Alachua County residents in times of international or national trade uncertainty.

- Locally generated renewable energy is available even in times of local fuel uncertainty. Having electric infrastructure powered by distributed renewable energy in key locations such as emergency shelters builds resilience in times of extreme weather.
- In keeping with the County's renewable energy goals, it is anticipated that more of the electrical grid will be powered by renewable energy sources in the coming decades. As the grid becomes more renewable, all the electricity on that grid becomes more renewable.
- Utility-scale electricity generation, even that generated using fossil fuels, follow strict regulations on emissions. In many cases, this makes the burning of fossil fuels for electricity less harmful for the environment than burning these same fuels in homes or commercially.
- Making the choice to invest today in natural gas and oil-based County infrastructure sets the County on a timeline spanning years or even decades before that infrastructure is replaced with electric and can benefit from the County's investment in municipal solar.

The County has the potential to fully electrify all County-owned buildings. However, commercial and residential electrification requires opt in from businesses, homeowners, renters, and other residents. The County is committed to internal electrification and helping to facilitate larger infrastructure, such as electric vehicle charging and renewable energy permitting that can make electrification effective.

Table 2.2: Action Items for Promote Energy Independence through Electrification. (Strategy 2.2.1)

Action Items	Jurisdiction	Pros	Cons	Status
Improve local electric vehicle (EV) infrastructure for public use at County facilities	Local government, within utility policies	County facilities are placed throughout the County, and locations like parks are ideal places for charging installations	Retrofitting existing locations can be expensive. Full implementation of this strategy will likely follow scheduled infrastructure improvements over time.	**Emergent**
Build a 100% hybrid and electric County fleet	Local government	Decreased fuel and maintenance costs for County fleet. Capitalizes on vertical integration between solar installation	Some supply limitations for larger vehicles. Current lack of EV infrastructure requires trade-off evaluations for vehicles with	**Emergent**

		goals. Improves efficiency of taxpayer dollars.	higher (all day) use demands.	
Improve private sector electrification: Commercial & Residential	Private industry, government incentives in some jurisdictions	General electrification locally allows renewable energy grid improvements to extend greenhouse gas reduction impacts.	Limited government capacity for influence	**New/Not started**

Goal 2.3 – Renewable Energy

STRATEGY 2.3.1 – *Become an institutional leader in renewable energy adoption.*

While energy efficiency is the most short-term, cost-effective solution for reducing carbon emissions, long-term energy planning requires a move to an energy-generation infrastructure that operates on fewer fossil fuels. Like electrification, the County has the most control over its own buildings and activities, making County-owned buildings a primary target for implementing solar panels. Increasing access to solar for residential and commercial buildings is complex due to upfront costs, the structure and age of buildings, and opt-in from utilities (when community solar).

There is also potential to scale solar to the utility level via solar farms. Alachua County has played a strong role in permitting current and planned utility-scale solar installations and has learned a lot about the need for community input in these decisions when they impact local communities. The County is committed to continuing to work closely and utilities and communities to help site utility-scale solar in Alachua County's unincorporated areas through careful planning and location selection, community conversations, and considering the tradeoffs of the land.

Table 2.3: Action Items for Become an Institutional Leader in Renewable Energy Adoption (Strategy 2.3.1)

Action Items	Jurisdiction	Pros	Cons	Status
Include solar panel installation(s) on all new County buildings and on roof replacements	Local government	County buildings have large roof decks for large installations;	Residents individually see minimal benefit	**Emergent**

		utility savings improve the efficiency of taxpayer dollars		
Promote access pathways to renewable energy for residential properties	Private residents, with government regulations, utility restrictions, and/or incentive programs	Strong local business community of solar providers, creates high-paying local jobs in installation and maintenance	Utility restrictions; grid infrastructure capacity prevents entire neighborhoods from participating; longer ROIs reduce implementation interest from short-term residents	**Emergent**
Facilitate grid-level renewable energy installations in Alachua County in collaboration with local municipalities and communities	Local zoning requirements, utility policies, state-level regulations	A solar-focused grid reduces greenhouse gas emissions for everyone; renewables are increasing the cheapest energy production option, reducing utility bills for all residents	Difficulty in identifying land for utility-scale installations; large start-up costs; unreliability of renewable energy generation without more advanced battery technology	**Current**

Goal 2.4 – Energy Infrastructure Resiliency

STRATEGY 2.4.1 *– Build an energy infrastructure that is resilient to extreme heat and storms.*

Power outages during extreme storm events are more than an inconvenience—for residents with specific medical needs, refrigeration needs, and heat sensitivity, it can be life and death. Alachua County is committed to working with interlocal institutions to be continually striving to reduce the number of power outages experienced during extreme weather events, and to ensure that residents in all parts of the County have access to regular, reliable energy even in emergencies.

Table 2.4: Action Items for Build an Energy Infrastructure that is Resilient to Extreme Heat and Storms (Strategy 2.4.1)				
Action Items	**Jurisdiction**	**Pros**	**Cons**	**Status**
Leverage locally distributed renewable energy and battery back-ups to promote energy resiliency before, during, and after extreme weather events, including exploring mobile energy possibilities	Local governments, utility policies	Renewable energy with battery back-ups can provide energy resilience in cases of grid-level power outages. This can be critical for vulnerable populations with critical resilience needs such as refrigeration, medical equipment, cell phones for communication, and transportation via electric vehicles in a gas shortage.	Alachua County manages, but does not own shelter locations. Interlocal collaboration will be necessary to establish resilience locations with secure energy systems.	**New/Not Started**
Improve resilience of energy infrastructure for extreme weather events including extreme heat and storms	Local governments, utilities, state-level policies	Considering extreme heat and storm implications in development plans, choosing tree-planting locations, and building design can reduce the likelihood of power-loss during extreme storm events and reduce energy demands during	These considerations constitute another level of development planning. State-level preemptions limit what local government can require. Refurbishing existing infrastructure may be cost-	**New/Not Started**

		extreme heat events.	prohibitive in many cases.	
Ally with local organizations and municipalities to promote strategic energy planning for all of Alachua County	Local governments, local non-governmental organizations	Clear energy strategies developed by local municipalities helps interlocal partnerships better serve the needs of residents. More participating municipalities can generate benefits of scale.	Developing energy strategies requires expertise not always found at the local level, and can cost money as well as time applying for grant dollars.	**Current**

Triple Bottom Line

People

Energy powers homes, businesses, and transportation. Alachua County residents rely on it not only to make their lives more convenient, but as part of their jobs, recreation, and civic involvement. Alachua County remains committed to ensuring energy continues to be widely available, highly reliable, and as affordable as possible.

Energy efficiency, electrification, and renewable energy generation are three parts of a larger whole that move the County and its residents towards climate resiliency and healthier lifestyles. Energy efficiency, as already demonstrated through ACEEP, can dramatically reduce costs of energy while improving the comfortability of a person's home. Electrification improves indoor air quality, as gas appliances have been shown to emit indoor pollutants that can be harmful to respiratory health and have been found to increase respiratory illnesses like asthma.[17] Renewable energy not only has climate mitigation impacts, but provides locally produced, reliable energy even during extreme weather events or other types of disruptions to natural gas and oil access.

[17] Lewis, "The Health Risks of Gas Stoves Explained," *Scientific American,* 2023.

Profit

Through its installation of over 300kWh of renewable energy on municipal buildings, Alachua County has already started to see the very real economic benefits of solar energy. Utility savings due to these installations in 2025 are estimated at over $60,000. These savings go even farther when combined with energy efficiency and conservation programs such as the County's Cenergistics contract, which has reduced internal energy consumption by 27%. As the County moves to invest in more electric vehicles, powered by the County's solar panels, the cost savings of these systems will continue to grow.

These same savings are seen when applied by local residents and businesses. Homes which have enrolled in ACEEP have already seen reduced energy costs for these low-income households. A report by the American Council for an Energy-Efficient Economy (ACEEE) found that electrification in residential areas could save households $96 billion in energy costs if both low- and high-income areas are electrified.[18]

Electrification and renewable energies can reduce public health costs by reducing indoor and outdoor air pollution. An Energy Efficiency Impact Report found that $430 million in healthcare costs were saved due to air pollution reduction from energy efficiency.[19] These energy strategies also create jobs and boost businesses by increasing worker productivity and satisfaction, business revenue, and asset values.[20][21] Energy efficiency jobs make up 40% of all traditional energy jobs, totaling 2.2 million in 2021. 70% of energy efficiency workers are employed by small businesses, showing an opportunity to boost local businesses in Alachua County. Critically, these jobs cannot be outsourced—it is not possible to remotely blow insulation into someone's attic, or to remotely clean pollen off solar panels. These jobs can grow in Alachua County and stay in Alachua County.

Planet

Switching to renewable energy sources is one of the pivotal steps towards net zero, as it catalyzes the phasing out of fossil fuels. Energy efficiency also lowers GHGs by reducing the amount of energy required to power the County. Efficiency, electrification, and renewables are a critical combination to move the County's energy use towards a more sustainable environmental footprint.

Community Engagement

[18] American Council for an Energy Efficient Economy, *The Value of Prioritizing Equitable, Efficient Building Electrification,* 2024.
[19] Alliance to Save Energy, American Council for an Energy Efficiency Economy, and the Business Council for Sustainable Energy, *Energy Efficiency Impact Report,* 2022.
[20] EPA State and Local Energy Program, *Clean Energy and the Economy: Assessing the Many Benefits of State and Local Clean Energy Initiatives.*
[21] *Ibid* footnote 20.

Community Weatherization Coalition

All Alachua County residents, both homeowners and renters, can take advantage of energy tune-ups from the Community Weatherization Coalition (CWC). In addition to being the County's contractor for the Alachua County Energy Efficiency Program, the CWC provides free energy tune-ups which can reduce energy-related utility bills by more than 10% on average.[2] Tune-up energy coaches focus on both behavioral and technological changes that can benefit residents, including walking through their utility bills to help residents understand their energy habits, and conducting an inspection to determine points of energy inefficiency. Coaches replace inefficient faucets and lightbulbs, insulate pipes, clean appliance cooling coils, and conduct other energy efficiency improvements free of charge. For those residents who are handier, there is an option to do a DIY tune-up where participants pick up the supplies and follow videos online.

More information on receiving a tune-up or doing a DIY tune-up can be found on the CWC website: https://communityweatherization.org/

Alachua County Energy Efficiency Program

Low-income renters (or landlords with low-income renters) of a home or apartment in Alachua County may be eligible for ACEEP, which can provide weatherization and energy efficiency upgrades up to $15,000.

More information about the program can be found here:

https://alachuacounty.us/Depts/Sustainability/Pages/ACEEP.aspx

Financial Incentives for Energy-Efficiency and Renewables

The Inflation Reduction Act provides a variety of ways to receive tax credits for purchasing renewable and energy efficient technologies. This is a new program with rules and regulations that can change over time. For the most up-to-date information, see the IRS website at https://www.irs.gov/credits-deductions/home-energy-tax-credits. Alachua County cannot provide tax advice regarding these incentives.

The State of Florida has a Property Tax Abatement for Renewable Energy program, which prevents increases in property taxes for several renewable energy sources (ex. solar, wind, geothermal heat pumps). The State of Florida also has a sales tax exemption for solar energy systems which can reduce the upfront costs of a solar installation. The application for the tax exemption can be found here: https://floridarevenue.com/taxes/tips/documents/TIP_19A01-09.pdf

The Solar and Energy Loan Fund (SELF), in partnership with Solar United Neighbors (SUN) and The Nature Conservancy in Florida, won $156 million in Solar for All funds from the

Environmental Protection Agency aimed at bringing solar and energy efficiency to low-income, energy burdened neighborhoods. The Solar for All funds will be distributed as grants versus loans based on the applicant's income level, allowing many residents who might not otherwise qualify for solar lending to access solar energy at a residential level. For more information, please visit the SELF website: https://solarenergyloanfund.org/

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