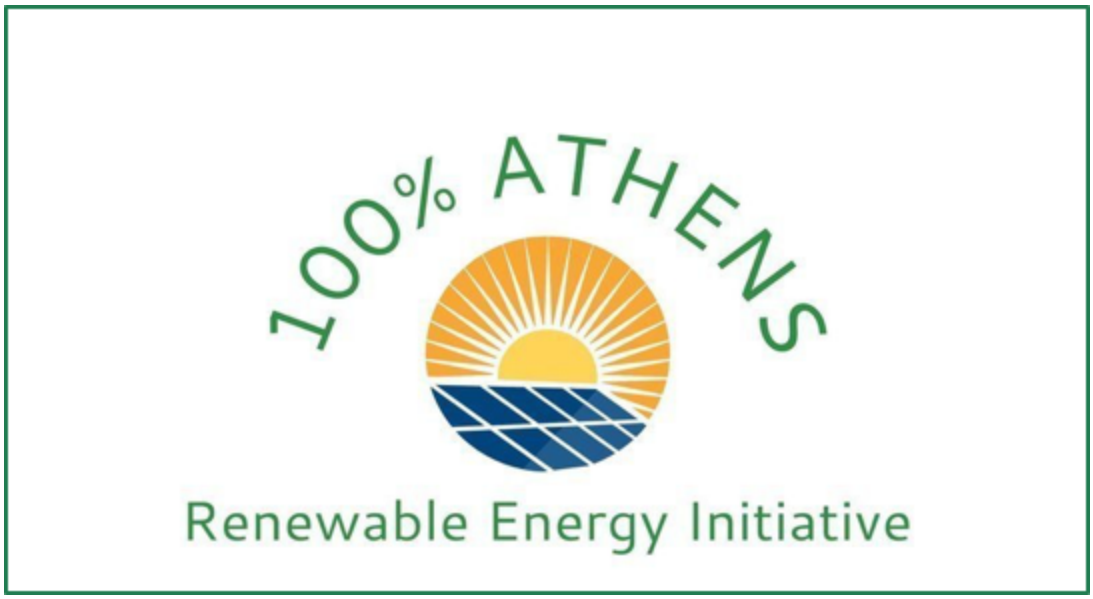
# 100% Athens Renewable Energy SPLOST

## Energy Sustainability Project

### Resources Booklet




February 18, 2019

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# Contents

# 100% Athens Introduction

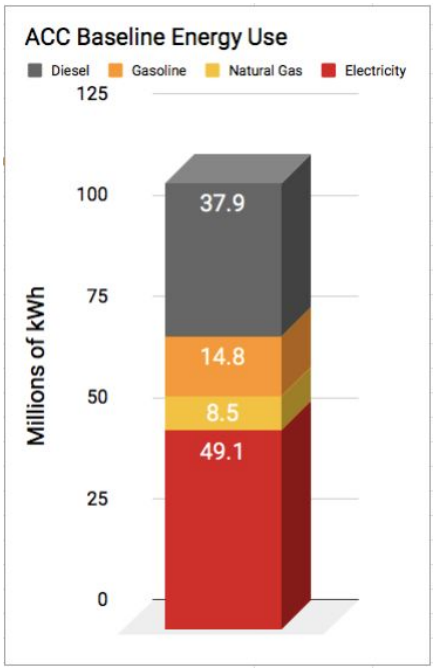

*100% Athens* is a grassroots campaign to transition Athens to 100% Renewable Energy (RE) by 2035, in a just and equitable way. This means, firstly, passing a resolution in support of this transition; secondly, creating a renewable energy transition plan that initiates transformation in the public domain, low-income communities and public transport; then, funding the plan's implementation through all monetary sources available, including SPLOST; while continually maintaining pressure and momentum on local energy policy until we reach full usage on clean and renewable energy in our county. SPLOST funding would be a solid start to this effort and would help attract further investment, which will be needed to grow and implement this green infrastructure project.

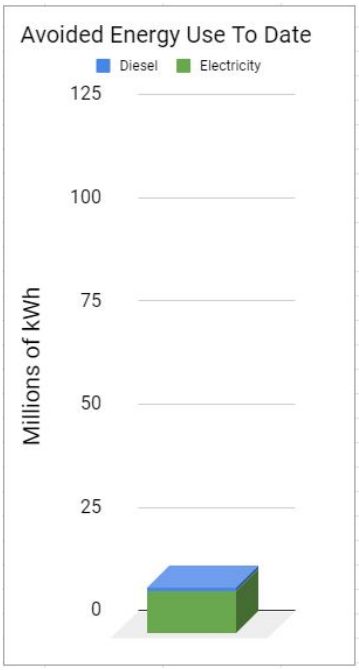
As a climate change advocacy group, we are continually campaigning in the community, educating Athens residents and working to inspire support for our mission. Between September 2018 and February 2019, *100% Athens* has made considerable progress on pushing for a resolution for a 100% RE transition to be passed by summer of 2019 by our locally elected officials. On February 4th, 2019, Mayor Kelly Girtz signed the Sierra Club's "Mayors for 100% Clean Energy" pledge. With over 200 other mayors and 100 cities, counties and states combined having already made the commitment to transition to RE, we are proud that Athens has now become a part of the nationwide movement to mitigate climate change.

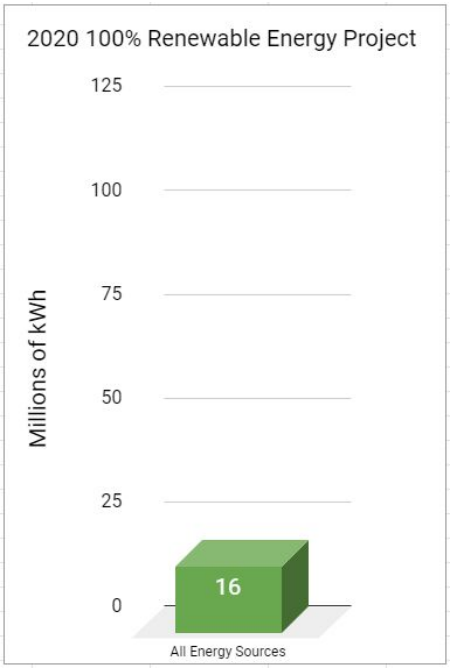
Following formal, ratified commitments to this mission by our locally elected officials, we will work with planners, developers, funders and our community to further develop and roll out a transition plan. We anticipate that considerable year-over-year operational and energy savings will then be made by ACC local government premises, by the city fleet, residents and businesses and between now and 2035. In turn, this would benefit our local economy and place Athens among the cities in the US Southeast leading the shift to a clean, green environment and economy.

Included in this accompanying handout to our presentation are projected cost saving by the ACC government; examples of model cities making the transition to 100% RE; and The EPA's *Local Government Climate and Energy Strategy Series*, which lays out a local policy and program blueprint for the transition to RE. We hope that this information will underscore our mission's necessity, feasibility and economic prudence.

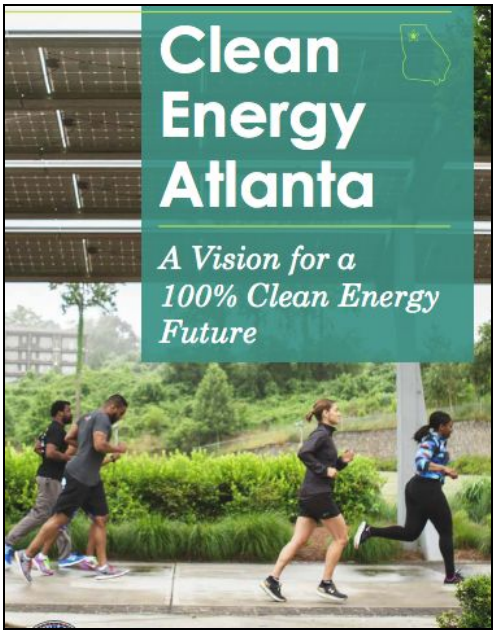
# Breakdown of ACC Energy Usage & Savings Numbers



# Model Cities Making the Transition to 100% Renewable




**Atlanta,** which passed its 100% Renewable Resolution in May 2017, has identified three pathways to 100 percent clean power, assuming no change in local regulations—an important caveat:

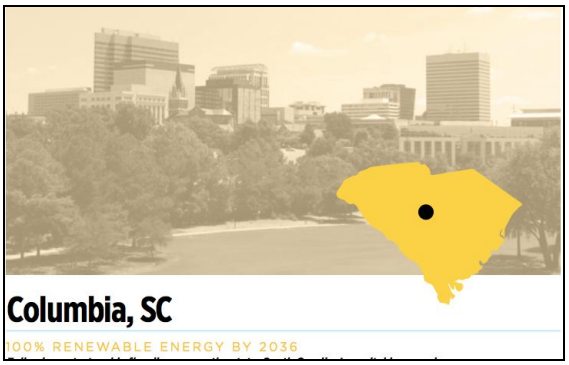
1) Purchase renewable energy credits, such as from out-of-state windfarms, to offset the city's power consumption. This costs least but also provides fewer local benefits. 2) Meet half the city's electricity through efficiency and rooftop solar in Atlanta and larger-scale solar elsewhere in Georgia. The rest would be through the purchase of renewable energy credits. 3) Maximize the city's local clean energy potential, adding all possible local clean energy, resulting in even more economic and health benefits. Officials estimate it could bring 8,000 new jobs through 2035. In September 2018, Atlanta was announced as one of the winning cities of Bloomberg's American Cities Climate Challenge, a $70 million program that will accelerate 20 ambitious cities' efforts to tackle climate change.

Atlanta was the first city in the Southeast to pass a building energy benchmarking and transparency ordinance, and as a winner of the Climate Challenge, it is ready to put even more ambitious plans into action to promote the values of One Atlanta, an affordable, resilient, and equitable Atlanta for all residents. Specifically, by 2020 the Climate Challenge will help Atlanta achieve the following: 1) A sustainable and resilient building stock supported by clean energy upgrades and existing building code enforcement, 2) Expand Atlanta's infrastructure for electric vehicles via the recently enacted EV Readiness Ordinance, which can serve as an example for cities around the country; and 3) Complete Streets Ordinance to allow for coordination of traffic signals throughout the city and prioritization of sidewalks and last-mile connectivity throughout Atlanta, especially in underserved neighborhoods. Clean Energy Atlanta


In May 2018, **Clarkston, GA,** unanimously adopted a resolution to transition to 100 percent clean and renewable energy, becoming the second Georgia municipality to do so, after Atlanta. The measure establishes a community-wide goal of transitioning to 100 percent renewable energy by 2050, with its city's fleet vehicles at zero-emission by 2035. The resolution states that the City Manager will work with the Environment and Transportation Committee to develop a plan for 100% Clarkston by March 2019 that will include interim milestones, budget estimates, equity metrics, financial impacts, and the percentage of clean energy that will be locally and distributively generated. The City is committed to including extensive public input and ensuring the transition to a 100% clean energy economy will be equitable and just so that low-income & historically marginalized

communities will have access to ownership and clean energy jobs.

Led by Mayor Benjamin, **Columbia, SC,** adopted its clean energy resolution in June 2017, becoming the first city in South Carolina to commit to transition to 100% clean energy. Columbia is taking important steps to meet this goal, including a thorough energy efficiency audit, planning a solar-powered wastewater facility, and transitioning municipal operations to 100% renewable energy.





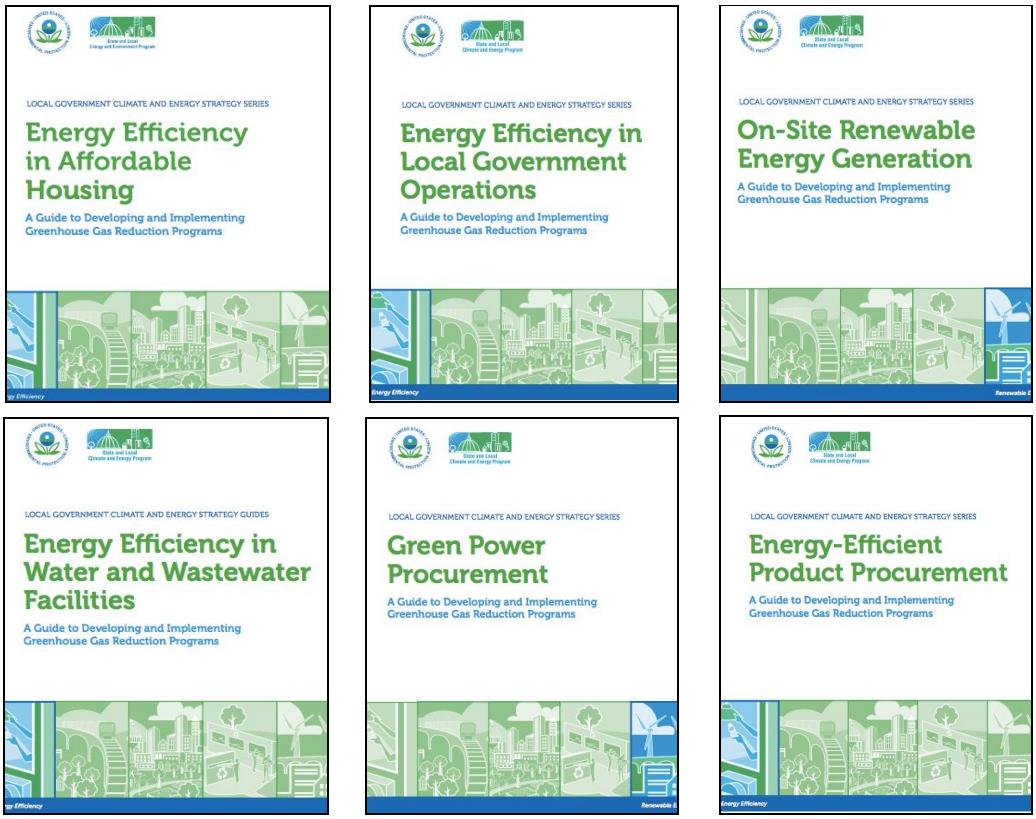
A full transition plan is still in process, but with two solar farms already in place and plans underway for building more, **Orlando, FL,** which famously receives an average of 300 days of sunshine a year, is already leveraging its best-known natural resource. The second solar farm, a 24-acre facility capable of generating 13 megawatts of clean energy, now powers Orlando's city hall, all 17 fire stations, and its police headquarters with 100% clean energy...the city is planning to ensure a sustainable, clean energy economy by requiring that all new buildings be certified LEED Silver at minimum. Every new building must also be solar-ready or have the capacity to add on solar.

**Annapolis, Maryland**, is leasing its closed landfill to BQ Energy LLC for a, 54,000-panel 16.8 megawatt solar array. The city and the county where it is located also signed a 20-year power purchase agreement to buy all the energy produced for public schools. The 16.8 megawatt solar energy facility, the Annapolis Renewable Energy Park, has been built on 80 acres of a closed landfill. It is the largest non-federal solar project on a closed landfill the U.S., according to the U.S. EPA.. The solar park is expected to create new jobs, support local businesses, offer learning opportunities for local students and generate more than $5 million for the city over the course of its 20-year lease, Annapolis Mayor Michael Pantelides said in his recent "State of the City" address. Thanks to the solar plant, the landfill, owned by the city, is now becoming a source of revenue for the first time since it was closed in 1989. The project will also bring financial and environmental benefits to the city, ensuring long-term, fixed and predictable energy cost and CO2 emissions savings.

## Local Government Strategy Series

The EPA's Local Government Climate and Energy Strategy Series gives a straightforward overview of greenhouse gas (GHG) emissions reduction strategies that local governments like Athens-Clarke County can use to achieve economic, environmental, social, and human health benefits. This series is designed for policy makers and program implementers interested in cost-effective climate and energy strategies, such as mayors, city or town council members, energy managers, city planners, metropolitan and regional planning organizations, and their private and nonprofit  partners.

Several of the EPA's reference materials (40-65 page PDF documents) are given below. **Click on the image below** to get to the report itself. A full list of the EPA's resources are available through the following link: https://www.epa.gov/statelocalenergy/local-government-strategy-series



# NOT A ZERO-SUM GAME

## QUANTIFYING THE PREMIUM FOR (AND RETURN ON) NET-ZERO BUILDINGS

As architects try to meet the 2030 Challenge of carbon-neutral facilities for projects built just 16 years from now, they often must rely on imprecise information on how to reach carbon-neutrality and the goal of the net-zero building. A new report commissioned by the District of Columbia's Department of the Environment provides some meaningful guidance.

The District of Columbia is home to more green buildings per capita than any other large U.S. city. The District's stated goal is to reduce building energy use to half of what it was in 2010 by 2032. The District Department of the Environment (DDOE) commissioned a study exploring how the city can best craft policy and create incentives to build net-zero energy and net-zero water buildings and facilities that qualify as Living Buildings. This report is intended as an aid to further advance the building industry toward more resilient, restorative facilities.

The DDOE had two goals: first, to investigate the costs associated with upgrading existing buildings from LEED Platinum to zero- energy, zero-water, and Living Building standards. And second, to collect data to advise policy makers on deep-green buildings and incentives. The findings are published in Net Zero and Living Building Challenge Financial Study: A Cost Comparison Report for Buildings in the District of Columbia.

The study was conducted by New Buildings Institute, International Living Future Institute, and Skanska, and conceptually transformed three LEED v3 Platinum-designed buildings to net-zero energy, net-zero water, and Living Buildings standards. Its scope focused on common building types in the District: office new construction, multi-family new construction, and office renovation. The study summarizes the cost premium range for each building type, uncovers challenges associated with the large size of commercial buildings in the District, and provides policy recommendations for addressing them.

### The Research Team Quantified Net-Zero Costs

The team applied a set of efficiency measures to each building's envelope, lighting, HVAC, operations, occupancy, and direct loads, along with rainwater harvesting techniques, in order to achieve reduced energy and water usage, before adding photovoltaics and water-reuse strategies. Costs for achieving net-zero standards are difficult to distinguish from overall project costs. However, through analysis the team identified costs connected to energy and water conservation, as well as the photovoltaic and water-reuse systems necessary for such a project.

The study found that the initial cost for energy efficiency is approximately 1-12% higher, varying by the building type. This rises to 5-19% in net-zero energy buildings when considering the added cost of a photovoltaic power supply. But the benefits make the added cost worthwhile: the energy efficiency measures alone offer a return on investment of 6-12%. After factoring current tax and renewable energy credits into these figures, the return on investment in net-zero buildings is approximately 30%.

### The Study Looked at Investments and Policy Options

Among the key financial and return on investment savings, the study found that:

- *For a 1-3% added initial cost of construction, new developments in the District could save up to 60% of their energy consumption.*
- *The return on investment for deep energy efficiency is 6-12% and rises to 33-36% when modeled for net-zero energy using solar power.*
- *Advanced water conservation measures to reduce water consumption and storm water runoff from the buildings cost 1-3%, conserve 45-60% of the water usage, and have a return on investment of 5-10%.*

The report quantifies the investment needed to move the District closer to a more resilient, net-zero future and recommends that District officials take a number of actions. First, they should define net-zero energy, and require disclosure of measured energy use and renewable energy projects annually to verify actual net-zero energy performance.

The report suggests promoting the evolution of energy codes, in part by continuing to update current codes to follow the most stringent standards. Officials should advance incentives for deep-green buildings to encourage the inclusion of building measurements with significant societal benefits. It is recommended that city officials identify and remove regulatory impediments to deep-green and Living Buildings.

### Communication Up-front Is Critical to Achieving Project Goals

The agreement between the architect and owner should establish the owner's anticipated sustainable objective for the project, which may include a project sustainability certification, benefit to the environment, enhancement to the health and well-being of building occupants, or improvement of energy efficiency. In addition, the agreement should identify any incentive programs the owner intends to pursue for the project, including those related to the sustainable objective and any deadlines for receiving the incentives, including those that are dependent on the architect's services.

*The agreement between the architect and owner should establish the owner's anticipated sustainable objective ... [the] benefit to the environment, enhancement to the health and well-being of building occupants, or improvement of energy efficiency.*

The report recognizes that having a net-zero goal is not appropriate or feasible in every case. The most important factor in preventing claims based on the underperformance of a sustainable design is that all parties involved understand, and acknowledge in writing, the inherent risks with such a project, the factors that make the outcome unpredictable, and the limits and responsibilities of each stakeholder to manage risks.

Establishing reasonable expectations at the beginning of the project is vital. One way to avoid unreasonable contractual provisions and unrealistic expectations is by informing the client that design services are recommendations that the client has to understand and, once satisfied, accept.

As the standard of care evolves, clients will expect a higher level of services. As the value of green projects increases because of financial benefits, clients will demand contractual assurances that they will realize a commensurate return on their investment in a high- performance design.

As the measurement of performance increases, clients will look more closely at the differences between design requirements and the actual use of energy, water, and other operational measurements.
The report also acknowledges that achieving net-zero is not only a matter of design; it also requires careful attention in such areas as operations and maintenance. But it gives facility owners something tangible to consider when looking at high-performance buildings.

A copy of the report is available through the New Buildings Institute website - **CLICK HERE.** ■

# References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Article: Not A Zero Sum Game:

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