



ATLANTA ZONING ORDINANCE REWRITE

IDEA LAB
July 2021

DCP



ATLZONING

The Atlanta Zoning Ordinance Rewrite



SUSTAINABILITY IDEA LAB

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Department of
CITY PLANNING

SOUTHFACE ENERGY INSTITUTE



Education

Research

Advocacy

Technical Assistance

“Warming of more than
1⁰C above today’s level
will make the Earth
warmer than it has been
in a million years”.



“Business-as-usual, with fossil fuel CO₂ emissions continuing to increase will mean an additional warming of 2⁰C to 3⁰C this century and will make the Earth a different planet.”



Dr. James Hansen, NASA GISS

“At 2°C to 3°C the new equilibrium sea level is approximately 25 meters (80 feet) higher than today. Real world data suggest sea level changes in centuries rather than millennia.”



“Action must be prompt,
otherwise CO₂- producing
infrastructure will be built
within a decade that will
make it impractical to keep
further warming under 1°C”.





Wilmington

Myrtle Beach

Charleston

Mt. Pleasant

Hilton Head

Savannah



Wilmington

Myrtle Beach

Charleston

Mt. Pleasant

Hilton Head

Savannah

Sea Level +1M

Weiss and Overpeck, University of Arizona



Wilmington

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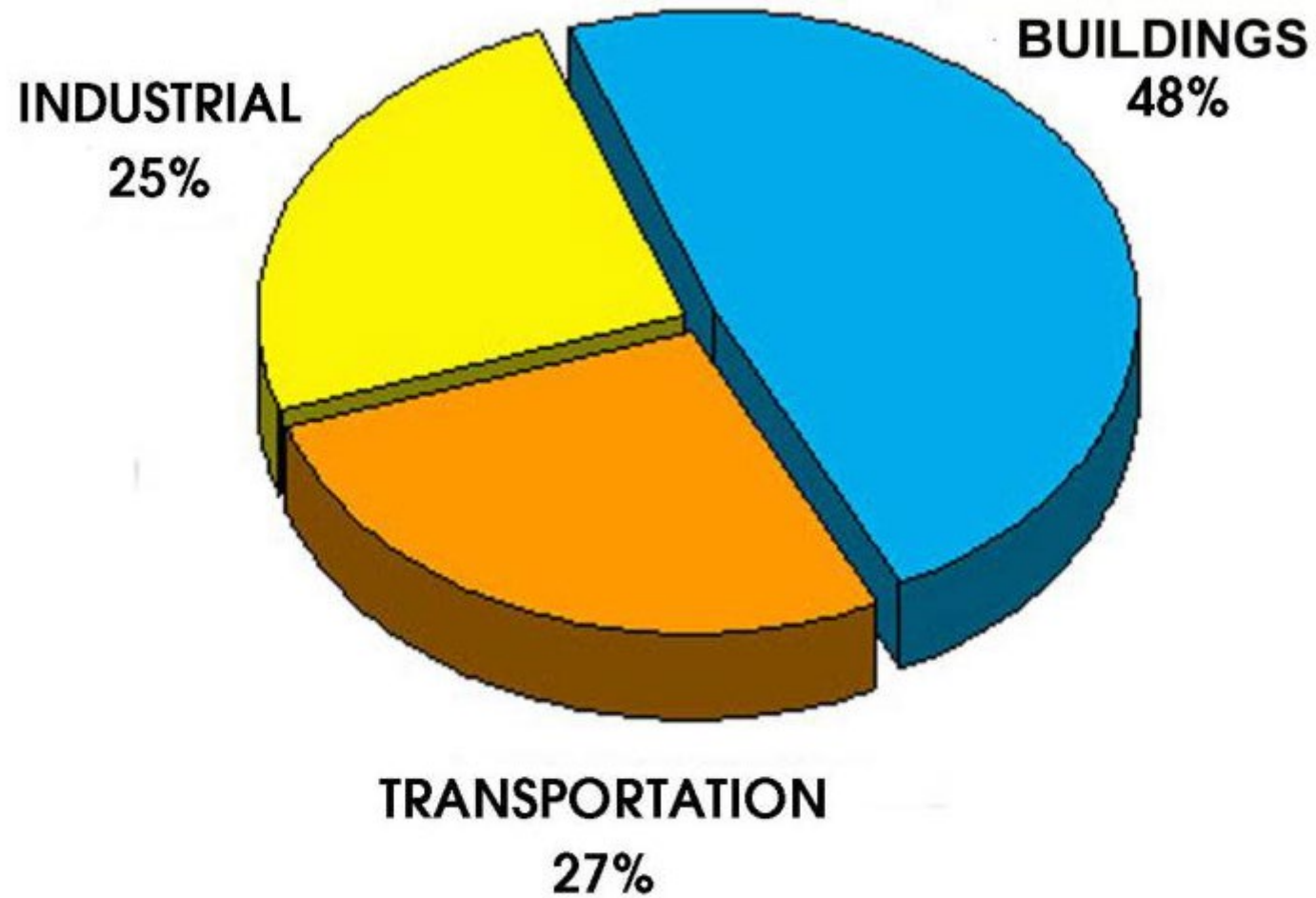
Sea Level +6M

Weiss and Overpeck, University of Arizona

Buildings are the single
largest contributor to
global warming,
accounting for almost half
of total annual US energy
consumption and CO₂



US Energy Information Administration



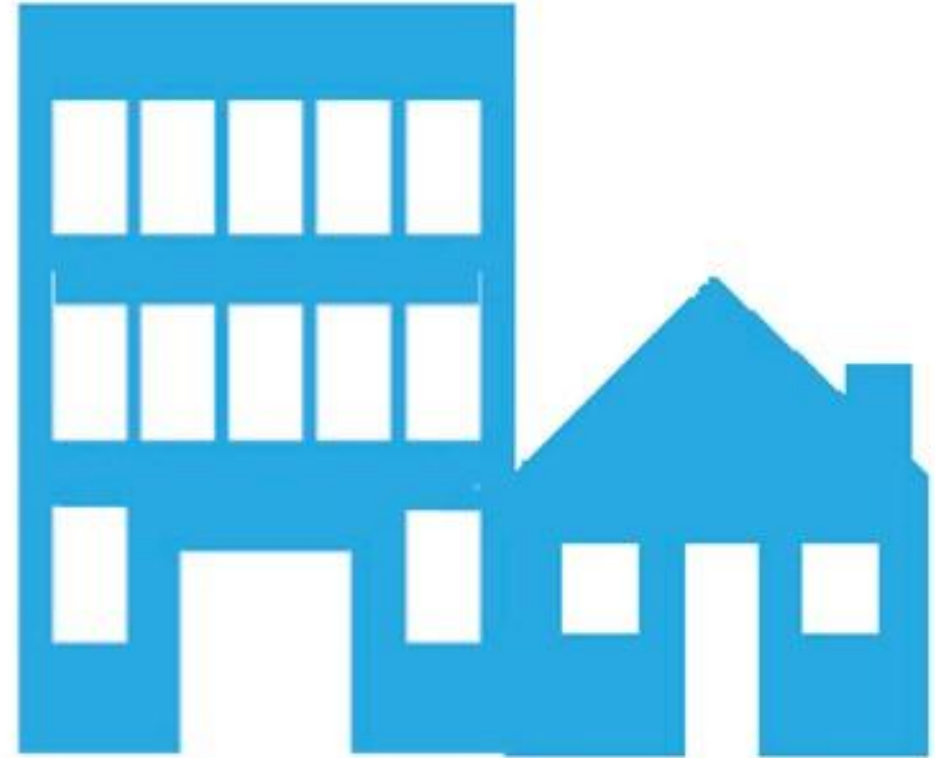
U.S. ENERGY CONSUMPTION



INDUSTRY
25%

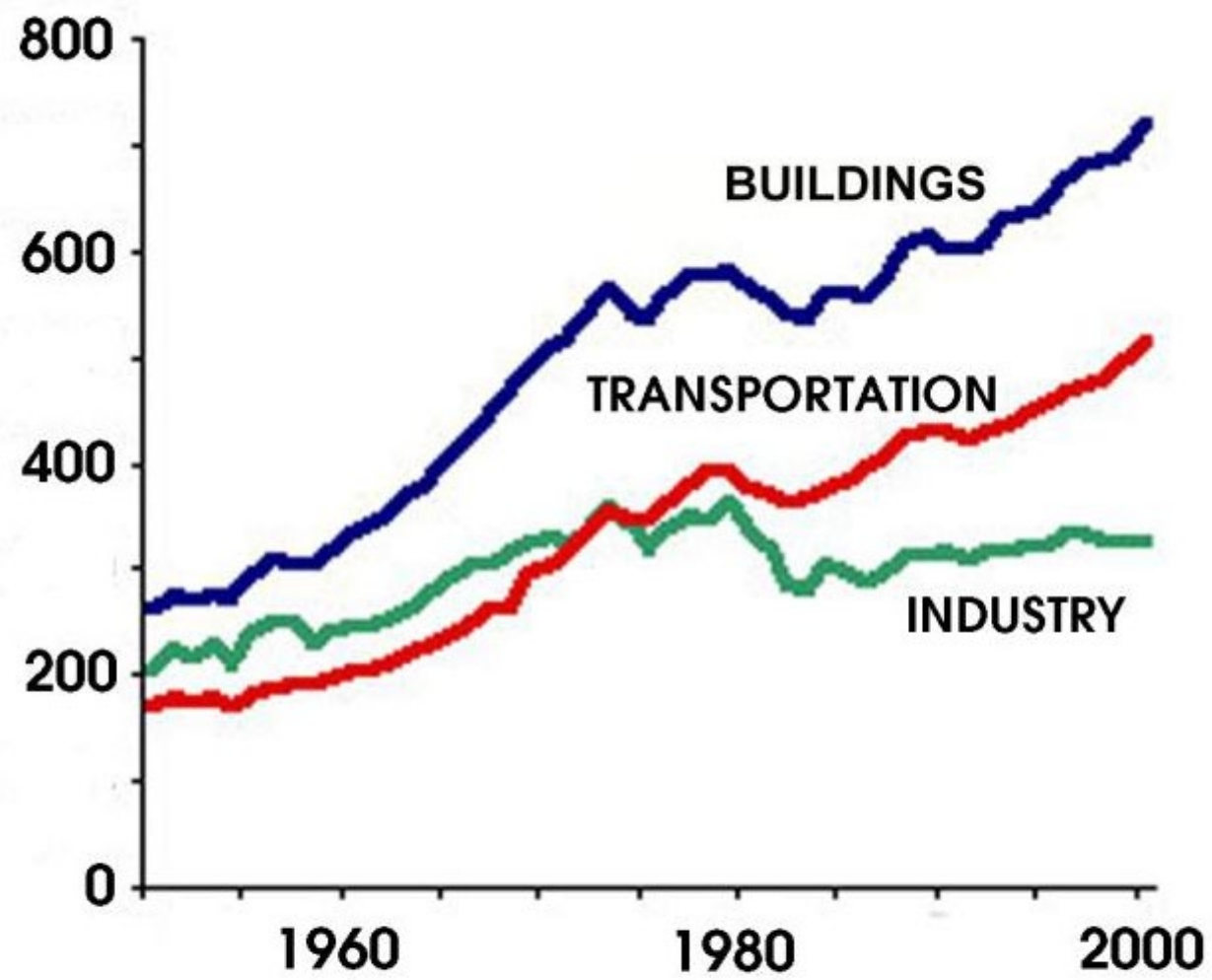


TRANSPORTATION
27%

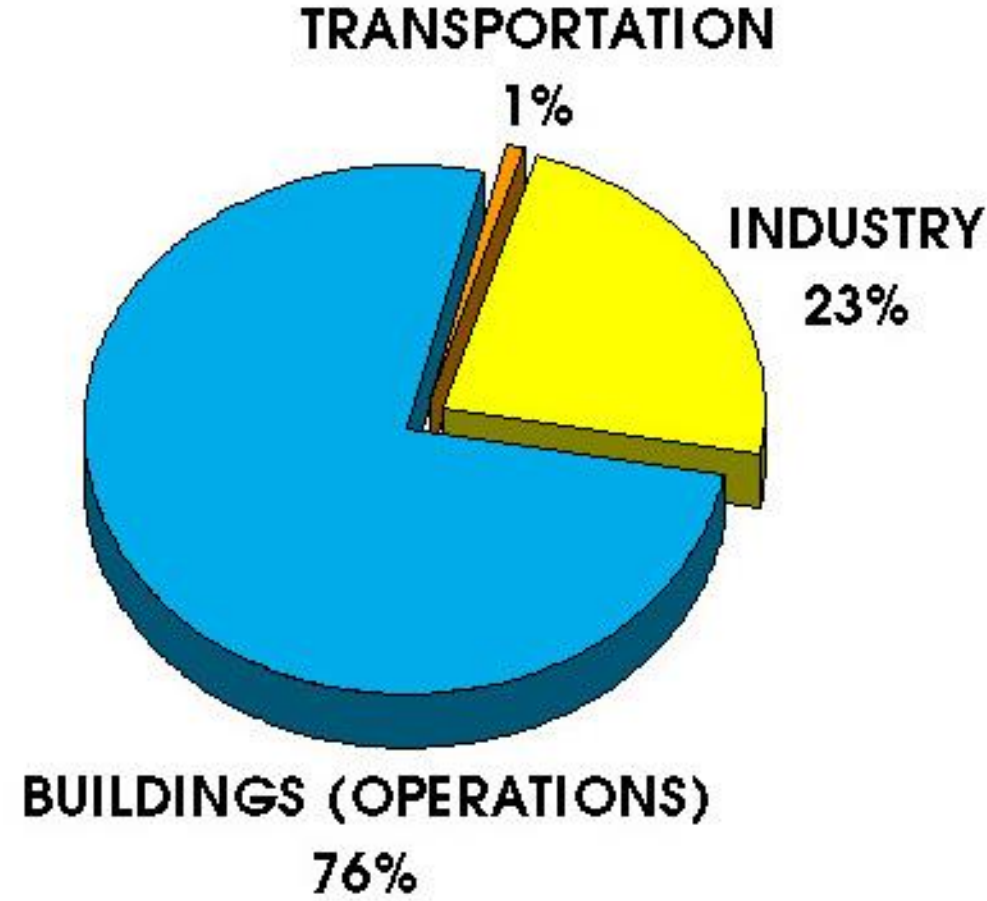


BUILDINGS
48%

U.S. ENERGY CONSUMPTION



CO2 EMISSIONS by SECTOR
(Million Metric Tons of Carbon)



U.S. ELECTRICITY CONSUMPTION

Solar and
wind
generation at
utility scale
are less
costly than
fossil fuel
generation.

First solar farm in Georgia opens in Upson

4 months ago | 21514 views | 0 | 5 | | |



Ashley Biles/Thomaston Times

History was made last Thursday for not only Upson County, but also the State of Georgia with the opening of the Rocky Creek Solar Farm, a 1 megawatt solar energy power plant. The plant, which became operational on June 14 – uses more than 3,400 solar panels to generate enough power to supply the electrical needs of about 300 homes. The Rocky Creek plant was developed by Solar Design & Development and Origis Energy and was built by Radiance Solar and Cantsink Manufacturing. It is the first of its kind in the state and was described by officials who worked on the creation as setting the bar future solar plants. Each of the companies involved praised Upson County Chairman Maurice Raines, County Manager Kyle Hood and the entire Board of Commissioners for making the county so business friendly and going out of their way to ensure this project was a success. During the ceremony, Raines stated that this was a great day for the community and he and the board are looking forward to more opportunities such as this in future. Officials who oversaw

Today, architecture,
planning and building
design must rapidly
transform.



2030 ⁰C Challenge



3. New Buildings – 50%

2010 – 60%

2015 – 70%

2020 – 80%

2025 – 90%

2030 – Carbon Neutral
(no fossil fuel energy to operate)



How can we meet the
2030 °C Challenge?



1. design & innovation

passive solar heating

passive cooling

daylighting

siting

building shape, color and orientation

fenestration location, size and shape

shading

natural ventilation

materials / properties

building type / density / smart growth

pedestrian and transit-oriented development

landscaping / microclimate



1. design & innovation

passive solar heating

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2. add technology

solar hot water

solar photovoltaics

wind microturbines

geothermal

biomass

moveable insulation

mechanized shading

high efficiency systems & appliances

energy management systems




US Conference of Mayors Adopts the "2030 Challenge"

By **CHRISTINA ALMEIDA**
Associated Press

LOS ANGELES - A call by the nation's architects to dramatically reduce the amount of fossil fuels used by buildings has won the endorsement of the U.S. Conference of Mayors.

The mayors' group, meeting in Las Vegas earlier this week, approved the "2030 Challenge" for city buildings, citing a similar sustainable design resolution passed by The American Institute of Architects in December.

AIA ADOPTS THE “2030 CHALLENGE”






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Press release

New 2030 Commitment report findings emphasize need for climate action

Profession must double down on efforts to meet 2030 targets.



WASHINGTON – Sept. 10, 2019 – Following the American Institute of Architects (AIA) announcement of the approval of a landmark [resolution](#) to engage the architectural profession in fighting climate change, a new report reveals why architects and engineers will need to redouble their efforts to reach 2030 Commitment goals.

Press contacts

Jessie Cornelius
[Email >](#)

Matt Tinder
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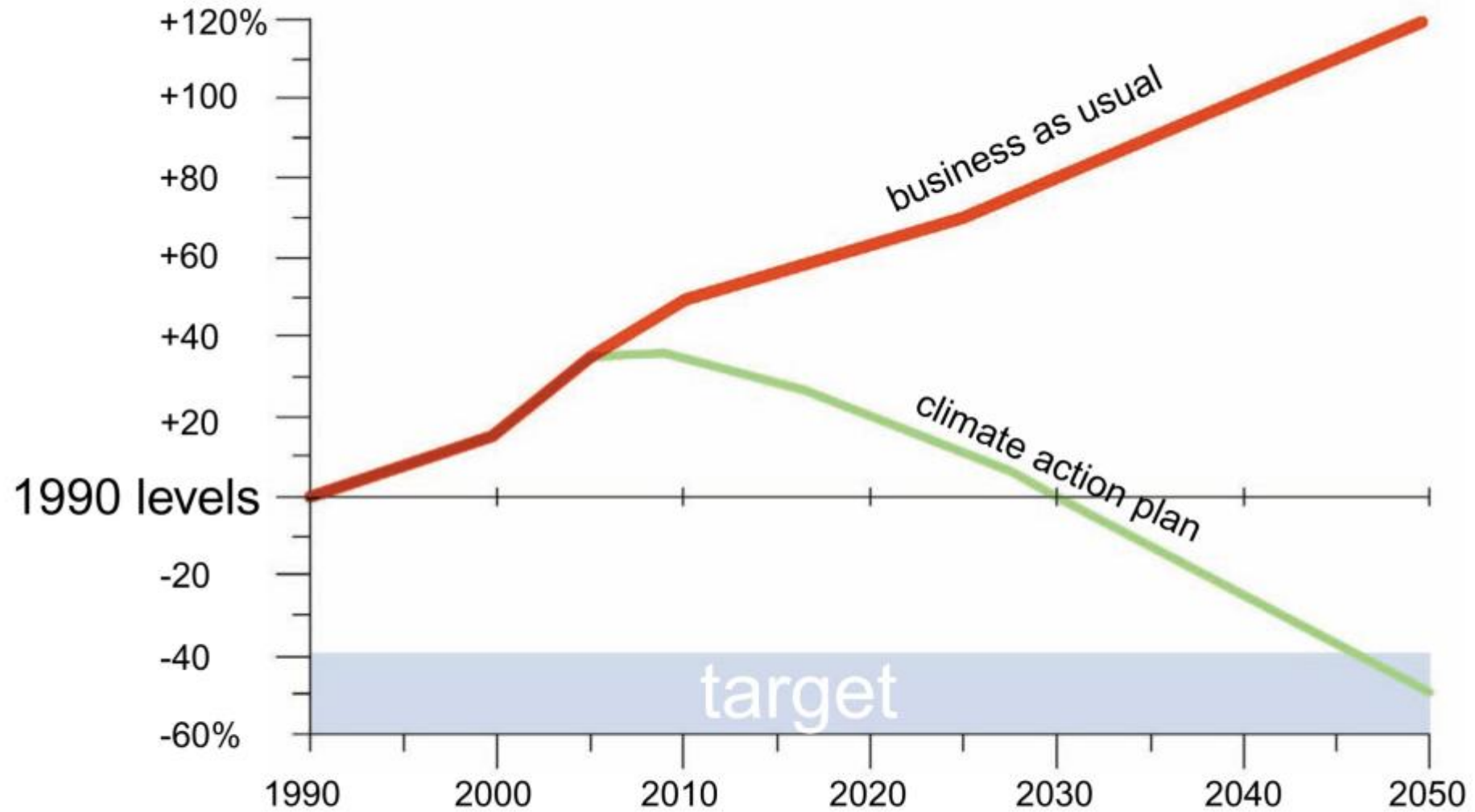
Ben Wills
[Email >](#)

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County adopts '2030 Challenge' to reduce fossil-fuel emissions

SARASOTA COUNTY (THURSDAY, JULY 20, 2006) - The Sarasota County Commission has approved a resolution to drastically reduce its fossil-fuel emissions over the next two decades. By adopting the "2030 Challenge," the county has committed to design all new construction and building renovations to use one-half the fossil fuel energy currently permitted



U.S. Building Sector CO2 Emissions

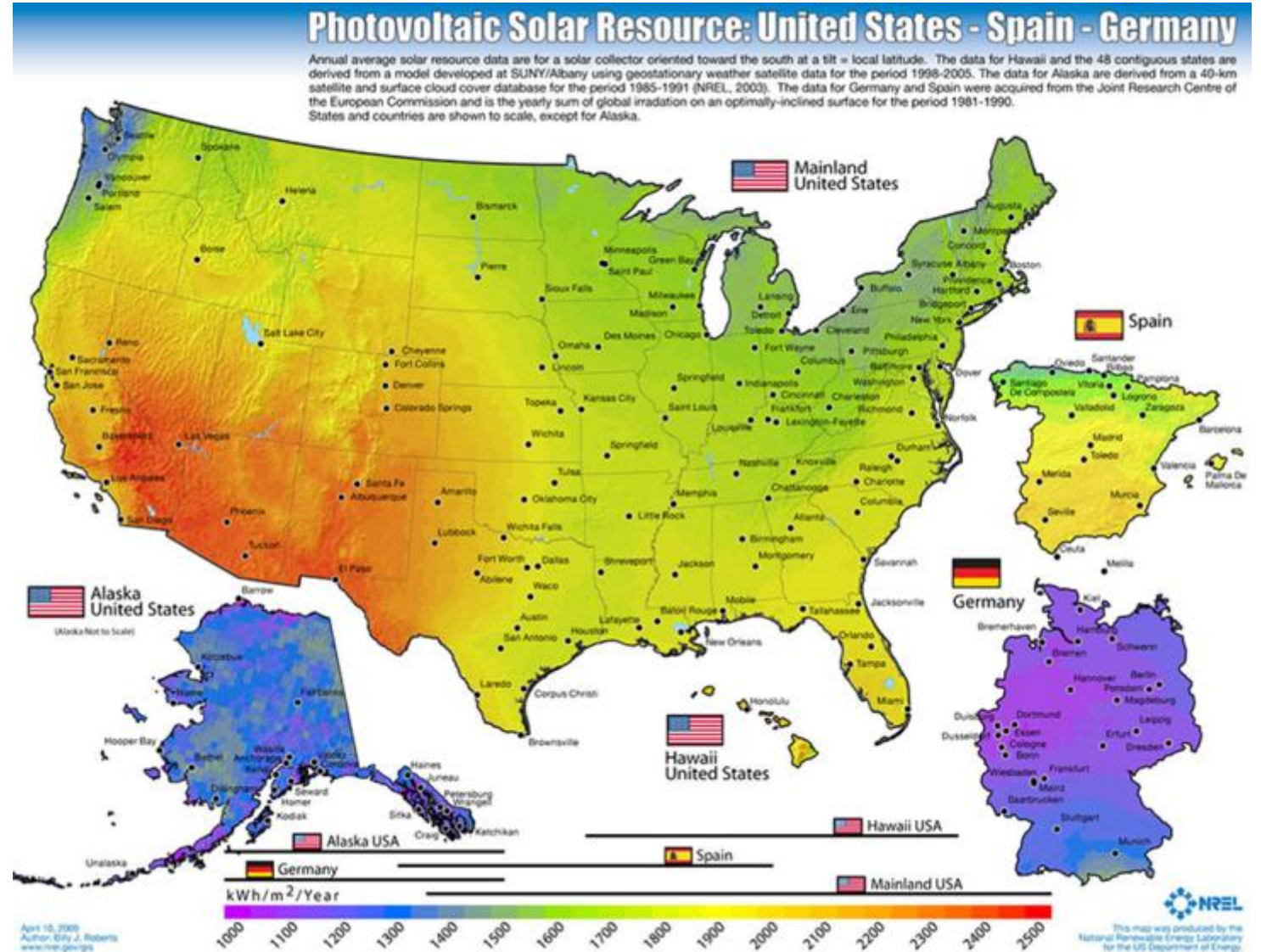
Source: Mazria Inc. 2005 (Assumes a 15% embodied energy reduction in the construction of new buildings)



Good News
Coming out of
Georgia

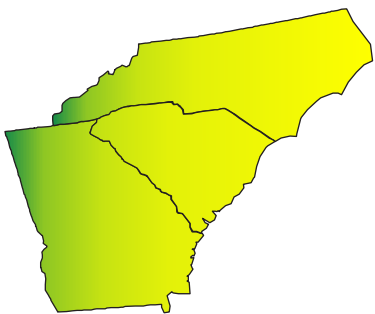
Georgia Solar Resource

10th best in
country but 3rd
among states
for unrealized
solar potential



Solar Fueling Germany's 4th Largest Economy

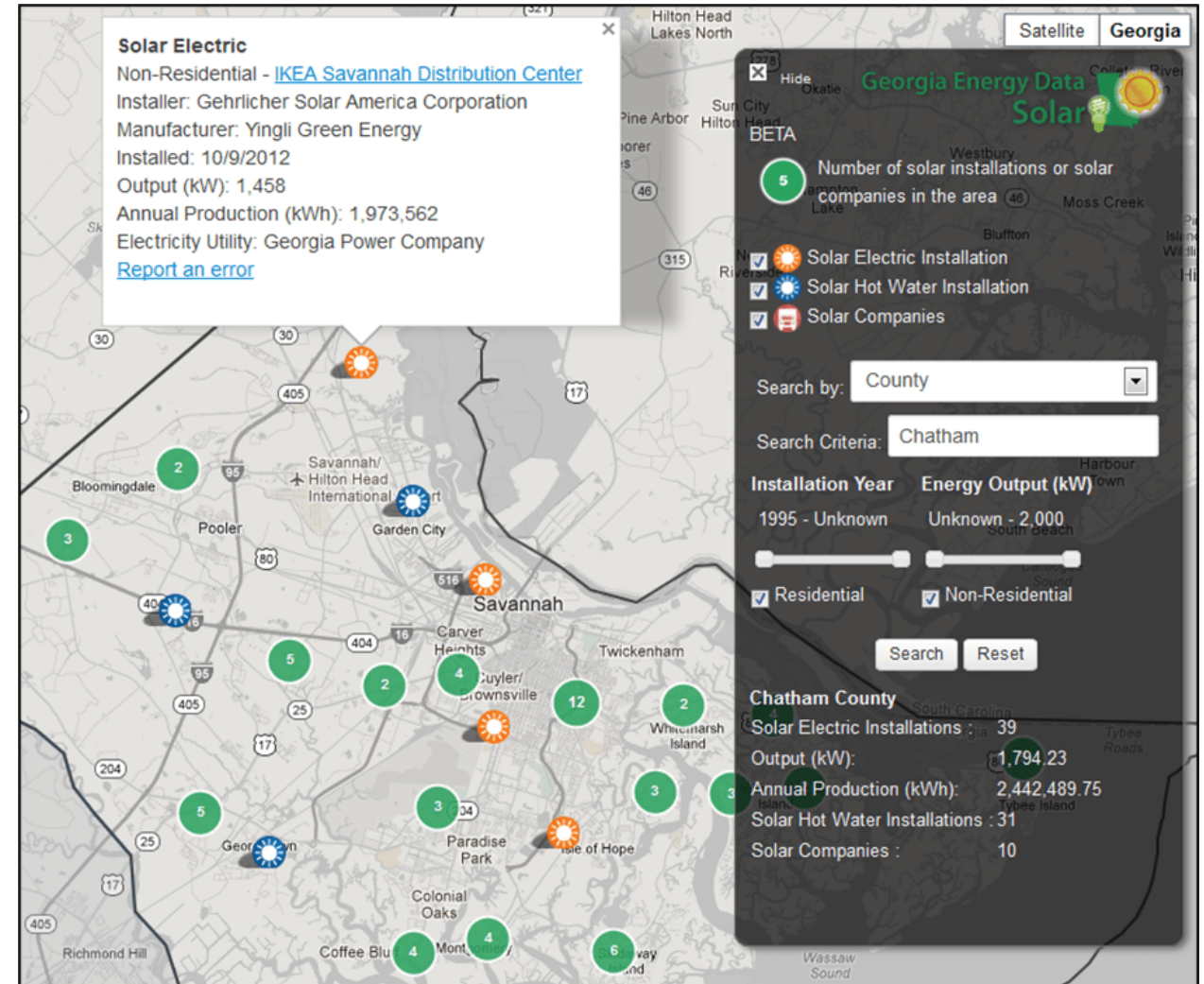
- Same area of GA, SC, NC; but 3x the population and economy
- Germany has same solar energy as Alaska
- 6% electricity from solar compared to 0.02% for GA
- At one point this year, solar power hit 50% in Germany



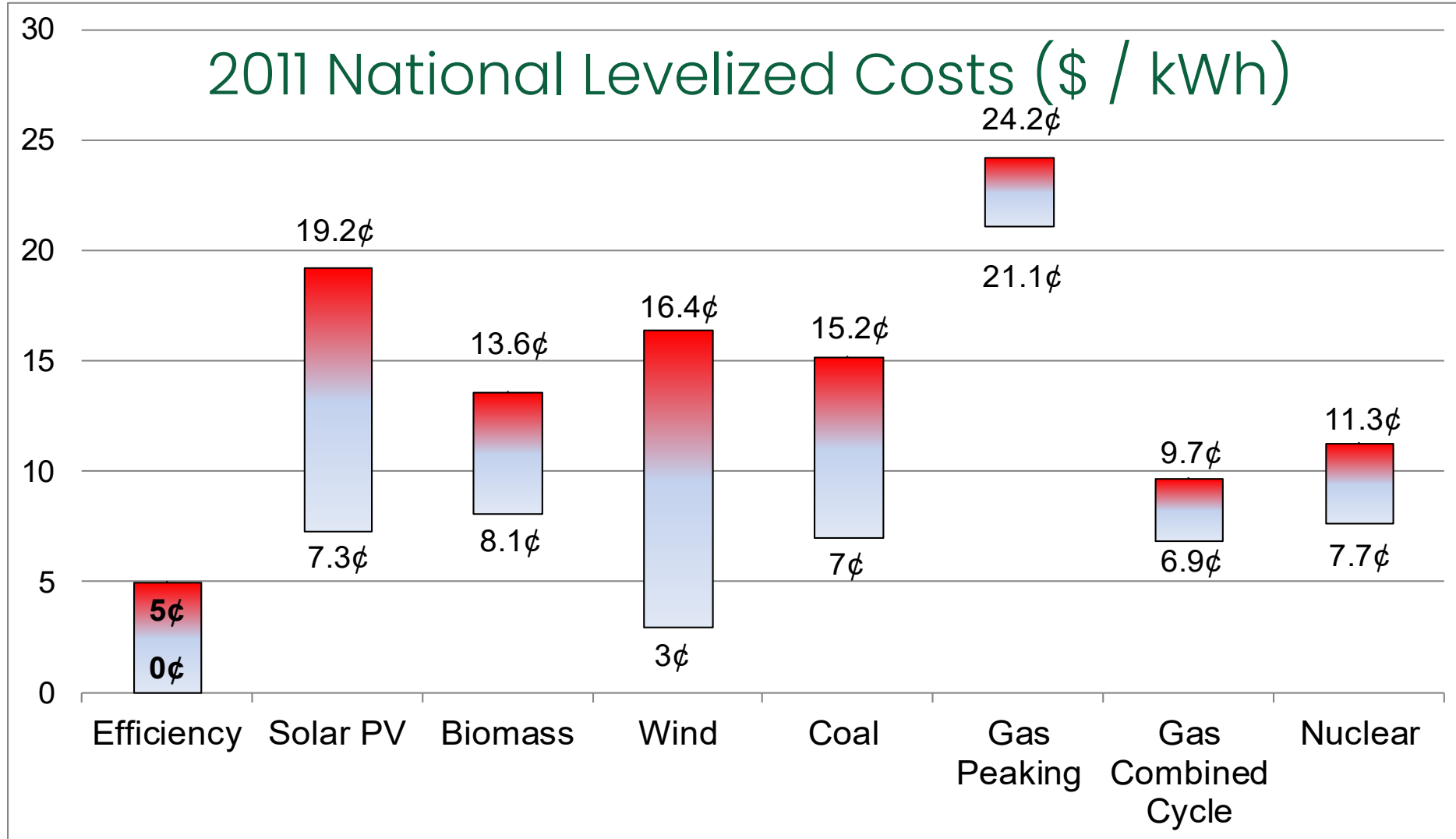
Area	138,000 sq. mi.	136,000 sq. mi		
Population	81M	24M		
GDP	\$3.1T	\$1T		
		GA	SC	NC
% Electricity From Solar	6.0%	0.02%	0.01%	0.09%

2016 Breakthrough in Georgia

- Home to Georgia's largest installation
- IKEA Distribution Center 1.5MW rooftop array

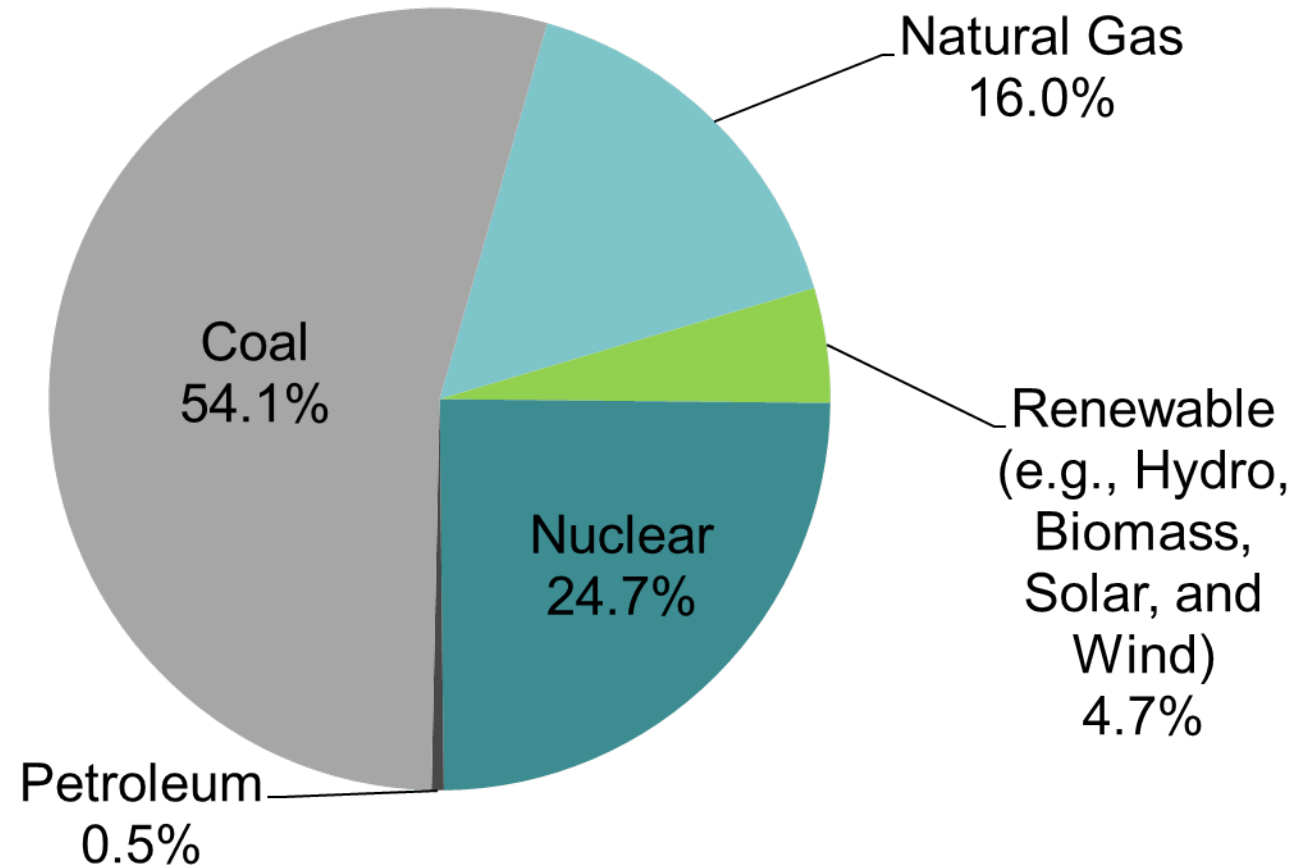


2011 National Levelized Costs (\$ / kWh)



2009 Energy Production

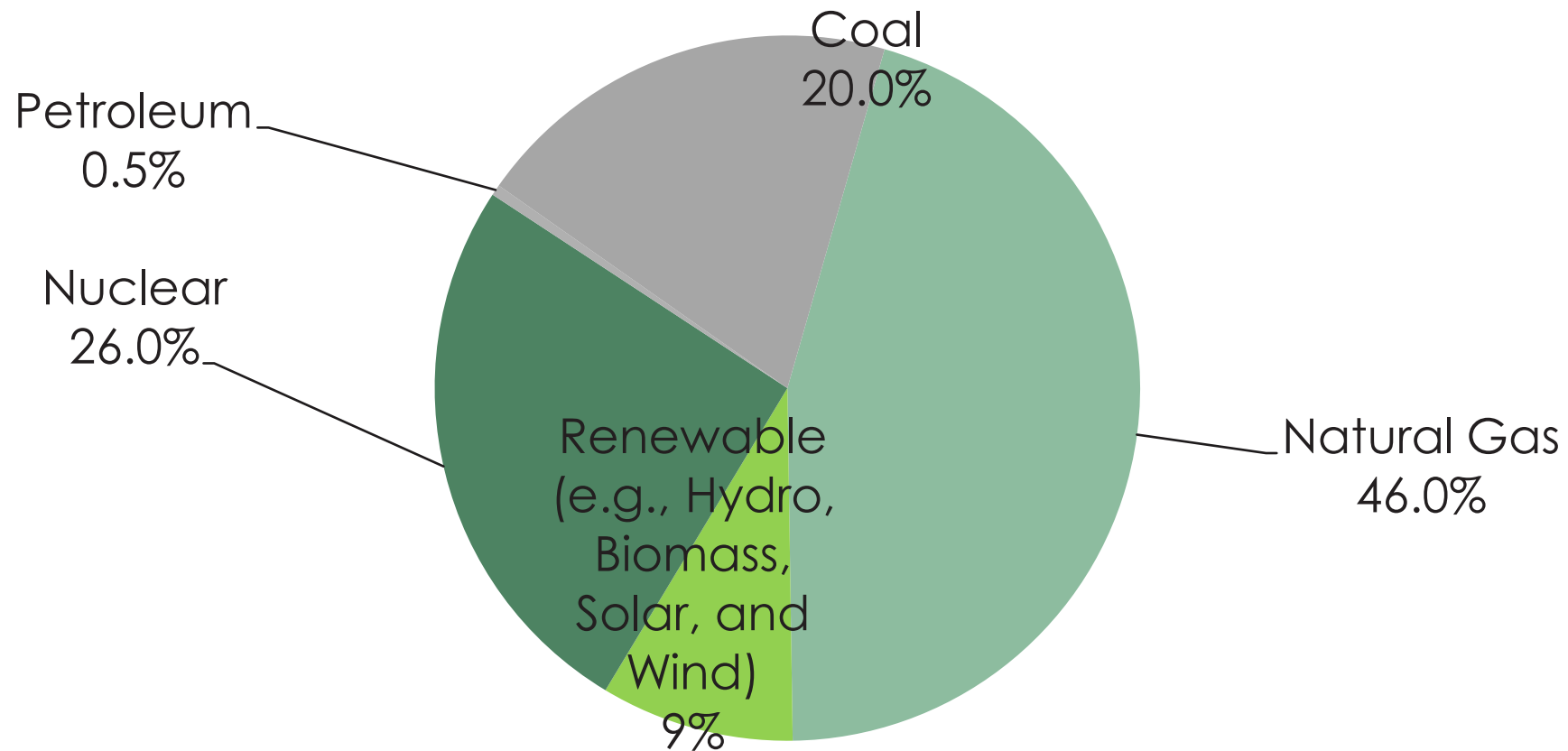
Georgia net electricity generation by source (2009)





2019 Energy Production

Georgia net electricity generation by source (2019)



Low Rates ≠ Lower Bills

2011 Residential Electricity <i>(most recent average monthly bill data)</i>			
	Avg. Retail Price (per kWh)	Avg. Monthly Bill	Avg. Monthly Consumption
Georgia	11.05¢	\$131.15	1,186 kWh
U.S.	11.72¢	\$110.14	940 kWh

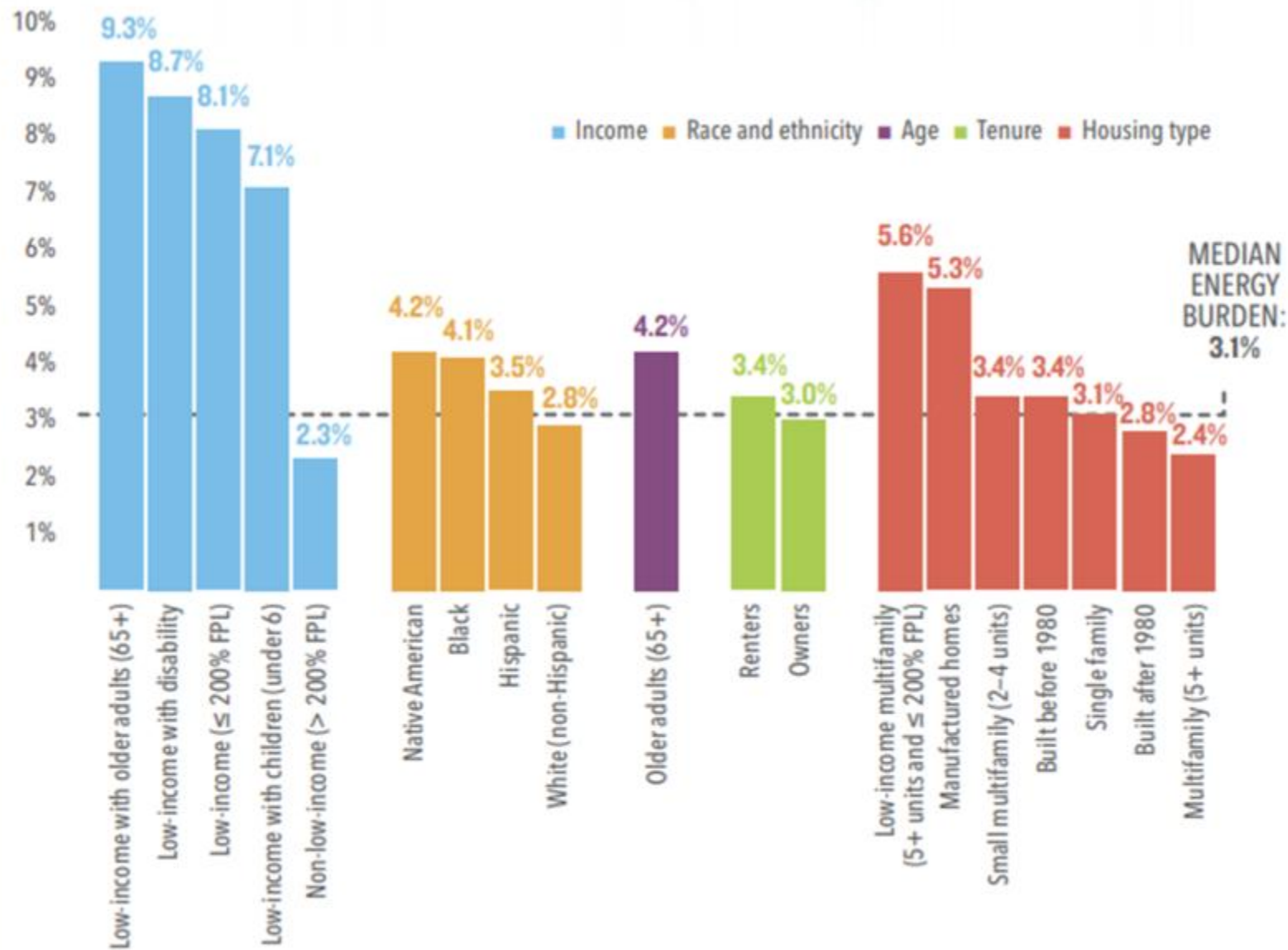
GA residential rates 5.7% lower than U.S. average

BUT

GA residential bills 16% higher than U.S. average

BECAUSE

GA homes use 20.7% more electricity than U.S. average

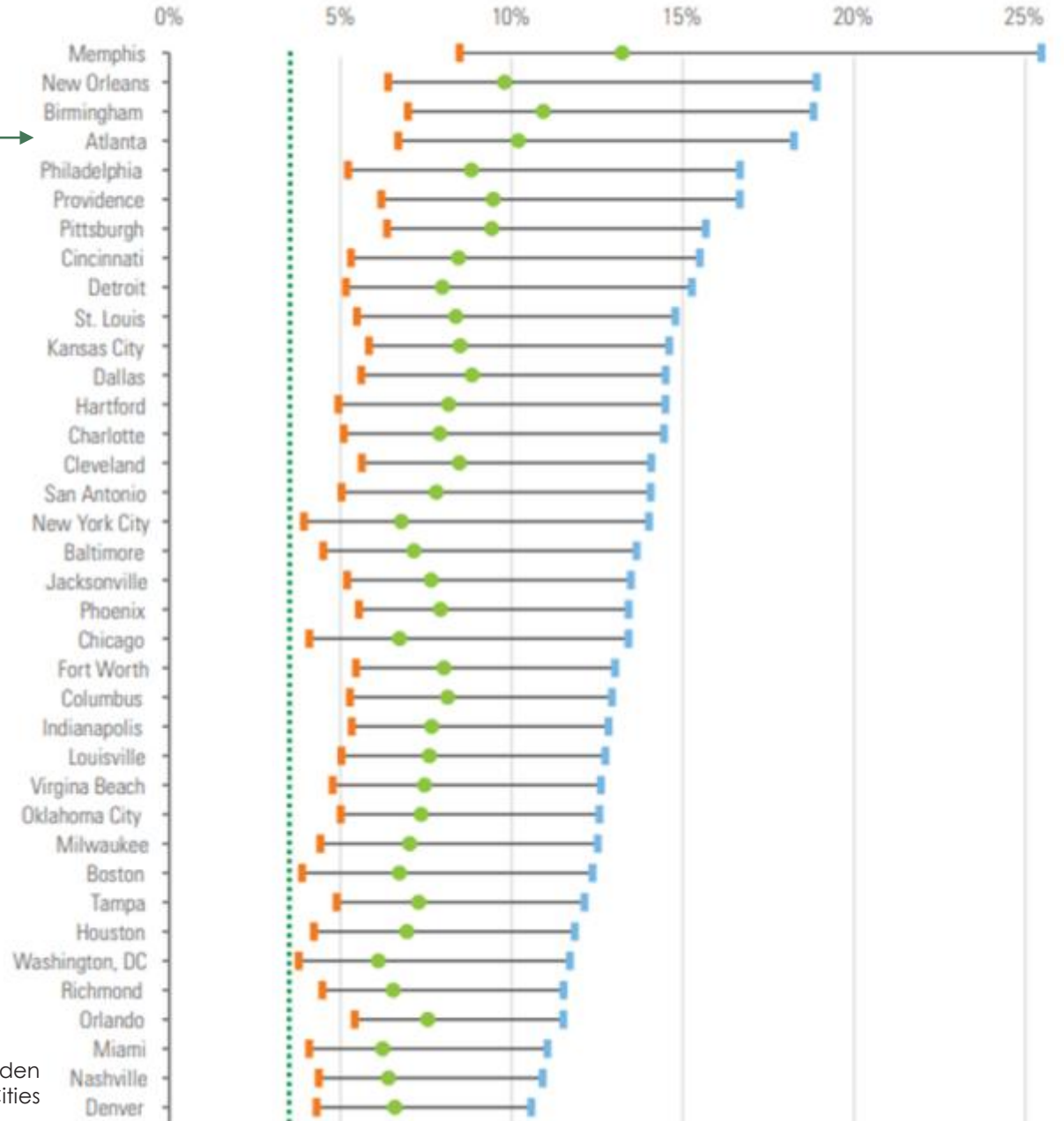


- The South Atlantic region (i.e., Delaware, DC, Florida, **Georgia**, Maryland, North Carolina, South Carolina, Virginia, West Virginia) had the greatest number of households (6.3 million) with high burdens, followed by the East North Central (5.4 million) and Middle Atlantic (4.6 million) regions.

- Six metro areas have a greater percentage of households with a high energy burden than the national average (25%), including Birmingham (34%), Detroit (30%), Riverside (29%), Rochester (29%), **Atlanta** (28%), and Philadelphia (26%).

- For low-income households and for multifamily low-income households, bringing housing stock up to the efficiency of the median household would eliminate 35% of excess energy burden, reducing energy burden from 7.2% to 5.9%.
- For African-American, Latino, and renting households, 42%, 68%, and 97% of their excess energy burdens, respectively, could be eliminated by raising household efficiency to the median.

Low-income energy burden



2016 ACEEE: Lifting the High Energy Burden
in America's Largest Cities

Integration of clean energy, EE and healthy homes



In Georgia, 30% of children live in households with a high housing cost burden, and 20% of children live in poverty.



In 2019, 1,746 Georgia children tested had an elevated blood lead level (5 µg/dL or more); 535 of them measured 10 µg/dL or higher. Average blood lead testing activity fell by 46% in the spring of 2020 due to the COVID-19 pandemic.



33% of Georgia housing was built before 1978 and is likely to contain lead-based paint.



Almost 9% of adults and 8% of children have current asthma in Georgia (2018).



Unintentional falls were responsible for 607 deaths among Georgians above the age of 65 in 2018.



In Georgia, falls are the leading cause of emergency department visits among people over the age of 65 and the fourth highest cause overall (2015-2019).



On average, 19 individuals die annually from carbon monoxide exposure in Georgia (2014-2018).



Radon-related lung cancer kills over 800 Georgians annually. In 20 northern Georgia counties, more than 29% of homes have tested with high levels of radon.

Enhancing Health & Well-Being in Homes

Health, equity and opportunity begin at home



National Center for Healthy Housing

Strategies to improve and expand low-income energy efficiency and weatherization programs





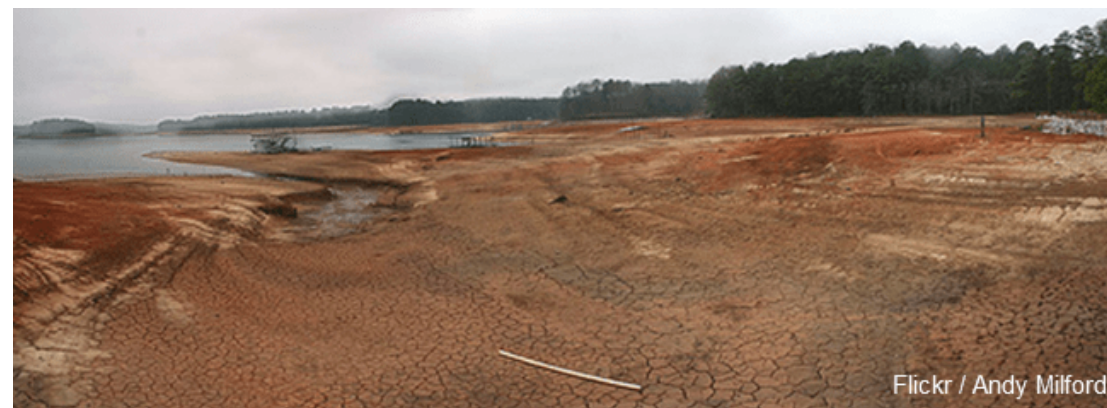
OUTDOOR AIR QUALITY

EE Reduces Water Consumption

In Georgia, 0.57 gal *consumed* for every thermoelectric kWh of electricity produced

- power plants consumed 230M gallons per day (July 2011)
- Augusta, Savannah, Columbus, and Macon are permitted to withdraw 253M gallons a day for municipal water (Mar 2011)

Georgia's coal, nuclear, and natural gas power plants account for 50% of total water withdrawals



Flickr / Andy Milford

Southface Campus Features

Passive Solar
Design

Solar Water
Heating

Organic
Garden

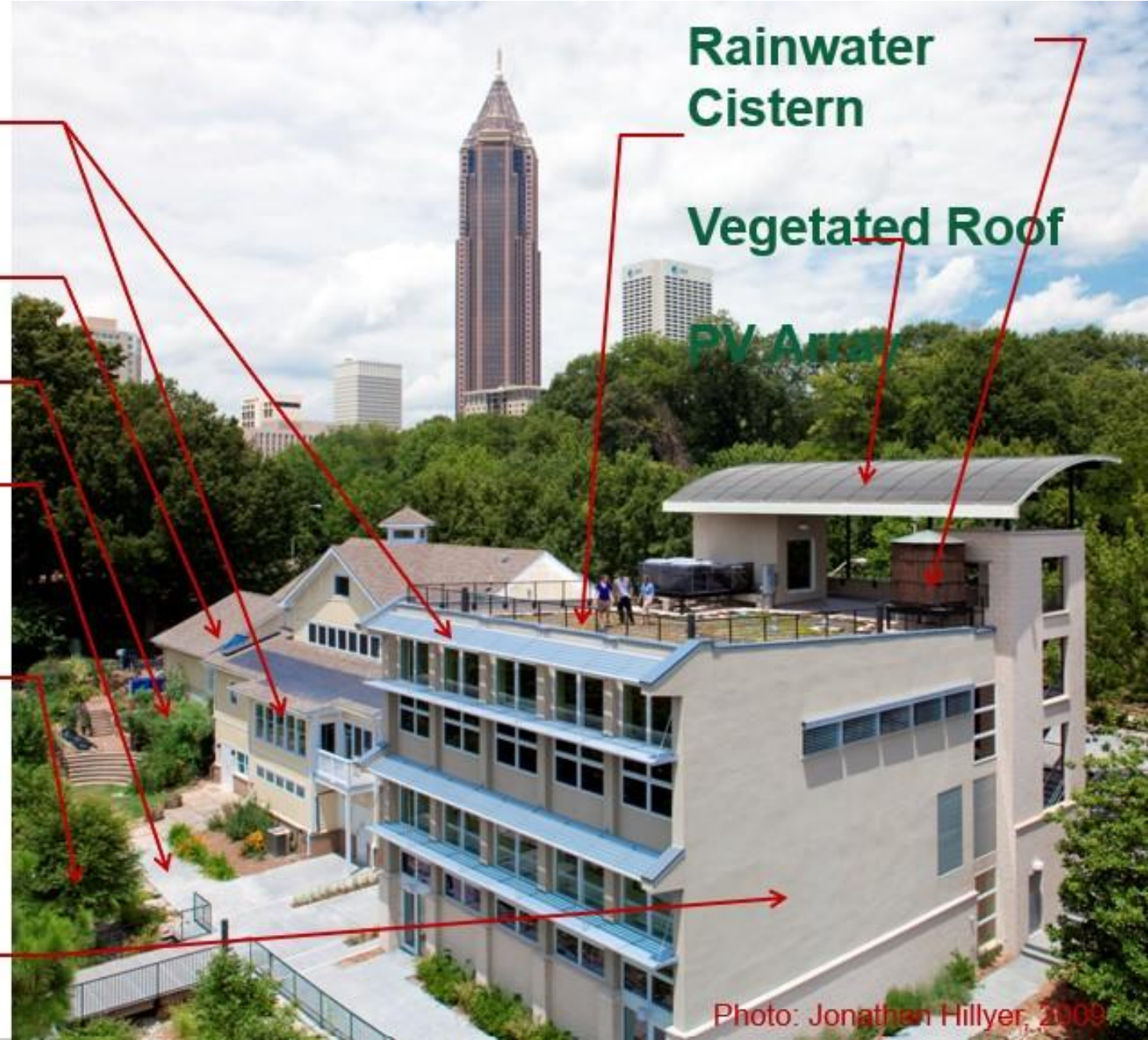
Pervious
Concrete

Stormwater
Management
Channel

Rainwater
Cistern

Vegetated Roof

PV Array



Idea Labs

Lab 2: Sustainability – Robert Reed, Catherine Gunter, Houston Harris

Lab 2: Urban Ecology – Robert Reed, Catherine Gunter, Houston Harris

Lab 3: Coding for Mobility and Access – John Funny, Grice Consulting Group

Lab 3: Coding after COVID-19 – Susan Henderson, PlaceMakers

Lab 4: Coding for Place – Lee Einsweiler, Code Studio

Lab 4: Unlocking Residual Space – Pavan Iyer, Eightvillage

Please visit the website for updates: <https://atlzoning.com/>

Thank you!
Questions?

Thank you!

Questions?

