

Electrification insights

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Southern Company

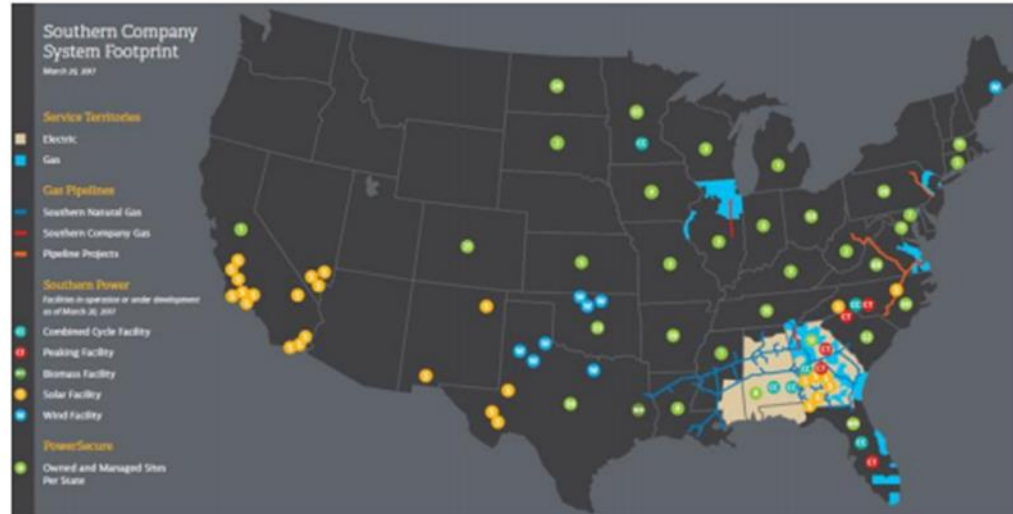
EPRI-IEA Expert Workshop, 10 October 2017, Paris

Three insights

- **Cross-disciplinary.** Understanding electrification implications means unusual collaboration between marketing and planning
- **Vantage point.** Electrification is a vantage point from which decarbonization can be seen as good for business
- **Cost-effectiveness.** For Southern Company customers, electrification is driven by cost-effectiveness and customer needs, not electrification mandates or policy

Quick facts about Southern Company

- One of the largest providers of electricity in the U.S.
 - 4.5 million electric customers
 - 44,000 MW generating capacity
 - 26,000 employees
 - 120,000 square miles of territory
- Four electric utilities:
 - Alabama Power
 - Georgia Power
 - Gulf Power
 - Mississippi Power
- Recently acquired AGL Resources
 - Created 2nd-largest combination utility company by customer base
 - 9 million customers in nine states
 - Only overlap in Georgia
 - AGL is the “pipes” company in a deregulated gas market
- Also sells competitive generation through subsidiary Southern Power



Long history of electrification

- Robust electrification programs
- Long tradition of promoting electric solutions
 - Residential, commercial, transportation, industrial
- Electrification goals in personnel performance plans
- Significant research, testing and demonstration

Customer Resource Center, Atlanta, Georgia

Home applications



Cooking



Electric transportation



Comfort systems



Manufacturing applications



Residential and commercial examples

- Rebates, incentives, promotions and educational materials
 - PSC rules direct what each operating company can do

Electric Irrigation Farmer Testimonials



Electric Water Heating

Did you know that your home's **second largest energy user** is the hot water heater? Take control of your energy use by choosing an electric water heater and see how **economical and efficient** it can be. With an electric water heater, there is no pilot light to worry about, no fumes from gas or carbon monoxide, and no ventilation problems. A family of four can have all the hot water they need for about \$30* per month. An electric water heater is low maintenance and has a long life expectancy. It's also economical.

Benefits of Electric Water Heating

- Avoids using a combustion process to heat water
- Good indoor air quality
- Simple and convenient operation and maintenance
- Easy adherence to building codes and standards
- More efficient and functional
- Low standing loss
- Easy to incorporate into home design
- Easy installation

For more information visit our [Learn More About](#) page, call 1-800-524-2421.

MEASURE	SYSTEM APPLICATION	AMOUNT
+ Marathon® Water Heater	Water Heating	\$525

*Estimated energy costs based on the average size home in Georgia (\$2,148 as of 1/1/17) utilizing Georgia Power Company's EZ\$MARTS energy simulation program. Estimated costs include water heating cost only. Electric costs based on Georgia Power residential R-17 rate and FCR - Schedule 23. These figures are estimates only - actual energy costs will vary based on individual equipment and usage.

Marathon Water Heaters
Find out about the toughest water heaters available today.

[Find Out More](#)

POWER TO SAVE

Switch to an electric heat pump and save.

Make your home a better place by increasing your comfort and saving on energy costs when you switch from an old air conditioner and gas furnace to a new energy-efficient heat pump. And you might qualify for 100% financing - you can put the purchase on your power bill. Call 1-800-445-APCO (6246) to make the switch and visit [AlabamaPower.com](#) to find more solutions that give you the power to save.

ALABAMA POWER Always on.

AlabamaPower.com

POWERING THE ELECTRIC KITCHEN.

With reduced cleanup time, lower maintenance cost and longer equipment life, electric cooking gives you a cooler and more efficient kitchen. When you start in faster pre-heating, faster recovery and less pre-heat time, you'll see how electricity gives you the power to save while giving your meals the preparation it deserves. Call 1-888-430-0767 to learn more about the benefits of electric cooking.

Alabama Power

Choose the Best Heat Pump for Your Home

Air Source Heat Pump uses an outdoor unit and outside air to transfer heat. It is the most common electric heat pump.

Geothermal Heat Pump uses the near-constant temperature of the earth for its heat source. It uses special water piping and the earth to transfer heat.

VRF systems, also known as ductless systems, allow one outdoor condensing unit to be connected to multiple indoor units. VRF's give each zone the power to control its own temperature. Heating and cooling can occur simultaneously with a VRF system.

For more information about heat pump options, visit our [Learn More About](#) page. For questions or to notify us of your installation, please call 1-800-524-2421.

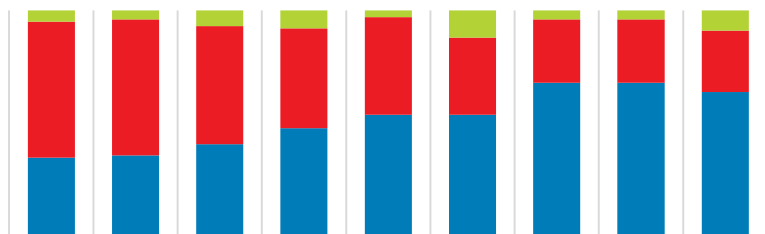
MEASURE	SYSTEM APPLICATION	AMOUNT
+ Heat Pump: Converting From a Natural Gas Furnace	Heating and Cooling	Up to \$250

Increasing Electrification of Space Heating in Southeast US

Percent of survey responses

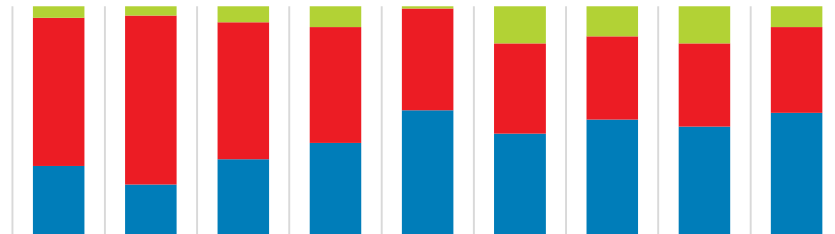
Other/Don't Know Gas (Natural or Bottled) Electric

ALABAMA POWER



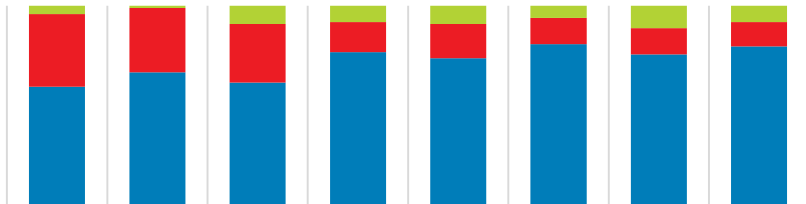
1990 1993 1997 2000 2004 2007 2010 2013 2016

GEORGIA POWER



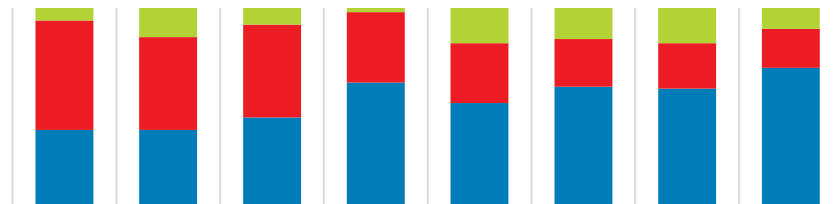
1991 1994 1997 2000 2004 2007 2010 2013 2016

GULF POWER



1990 1994 2000 2004 2007 2010 2013 2016

MISSISSIPPI POWER



1995 1998 2000 2004 2007 2010 2013 2016

Source: Residential Saturation Survey

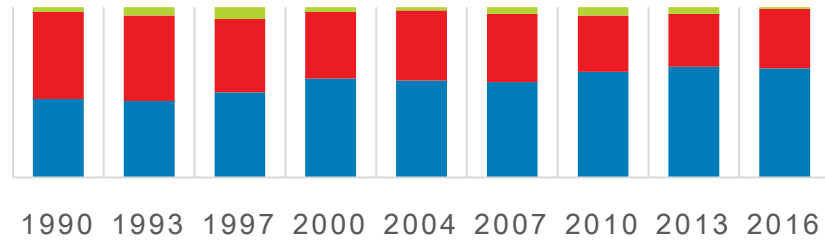
Sample Size for 2016: Alabama Power (1,209) Georgia Power (2,634) Gulf Power (1,028) Mississippi Power (753)

Increasing Electrification of Water Heating in Southeast US

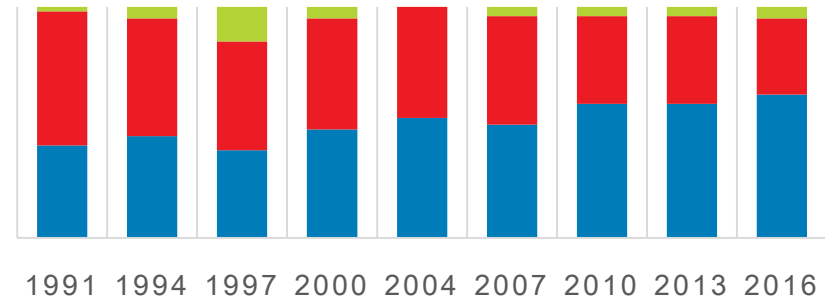
Percent of survey responses

Other/Don't Know Gas (Natural or Bottled) Electric

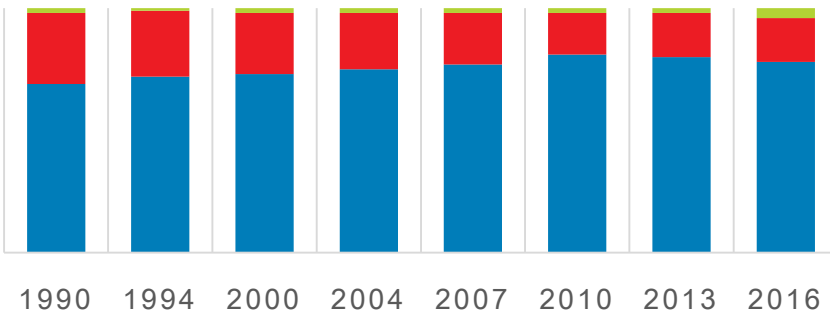
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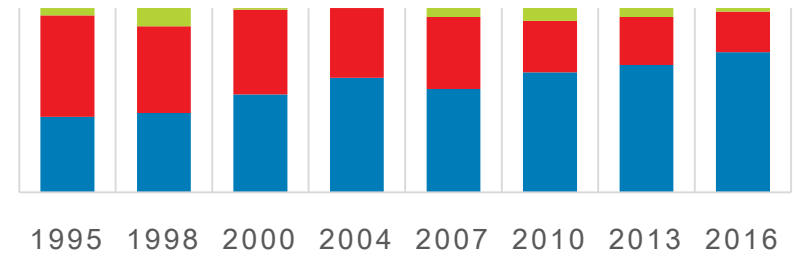
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Source: Residential Saturation Survey
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Electric transportation examples

- Off-road:
 - Ship-to-shore cranes and refrigerated cargo racks
 - Electric lift trucks
 - Port dredging project in Alabama
 - Airport and airline equipment
 - Coal mining equipment
- On road: electric vehicles and charging technologies
 - In our own operations (bucket trucks, etc.)
 - Residential applications
 - Commercial applications: Workplace charging for employees, fleets, buses



Montgomery Alabama





Electric. Efficient. Environmental.

Alabama Power is committed to educating the public about the potential of electric transportation.

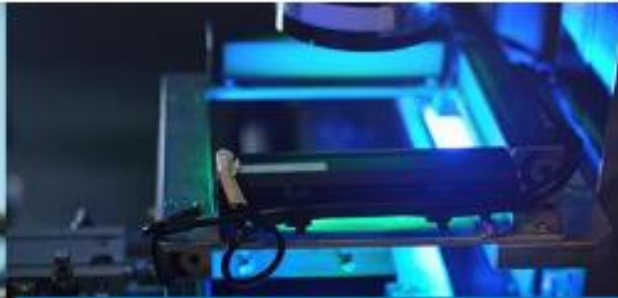


Always on.™

Industrial examples



Induction Heating



Ultraviolet Technology



Infrared Heating



Powder Painting



Additive Manufacturing



Comfort Heating

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