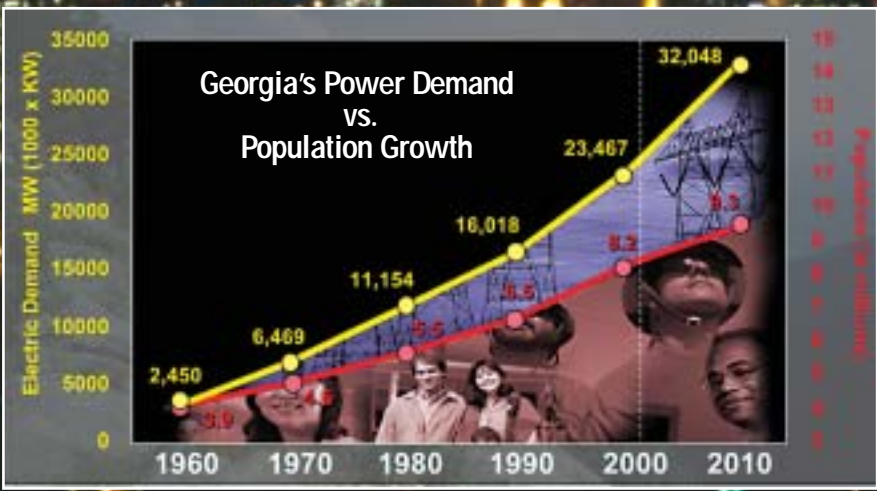
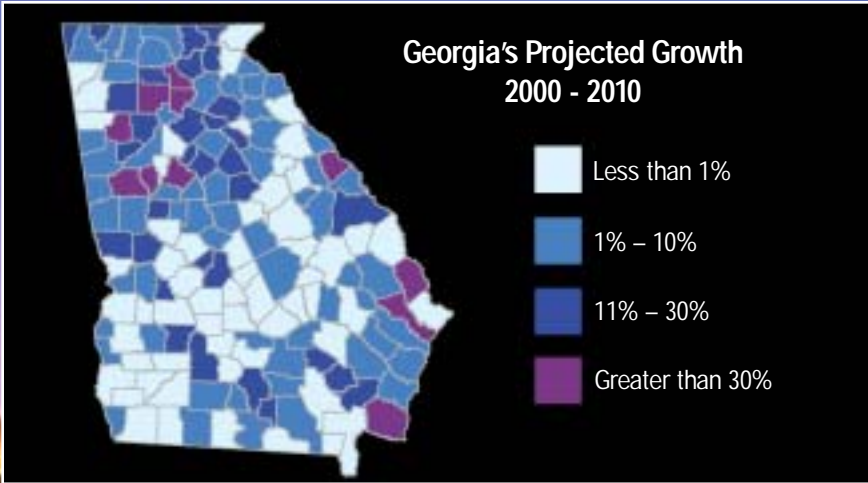


**Transmission lines** are the lifelines of today's high-tech world. They carry electricity over long distances to help satisfy our seemingly insatiable appetite for energy. These vital highways of power come in several sizes on structures made of wood, concrete or steel.



*Without transmission lines,* electric appliances, computers and lights wouldn't have the power to function, because these are the wires that move electricity from power plants to local communities.

Georgia Power currently maintains more than 12,300 miles of transmission lines across the state. By 2006, to keep up with growth, another 200 miles will be added to the system. The new lines are crucial and necessary to carry the additional electricity needed to meet the state's increasing demand for power.



## Rapid Growth

The 2000 U.S. census revealed that Georgia continues to be one of the fastest-growing states in the country. It took Georgia Power 90 years to acquire one million customers, but just 27 years to reach its second million. The latest projections show another million people moving to Georgia by 2010.

The need for new or larger transmission lines is based on the laws of physics. If an existing line cannot handle the electrical demands that customers put on it, the line must be replaced with a larger-capacity one, or a new one should be built. Otherwise, the existing line will overheat and fail, interrupting the delivery of electricity to all served by that system.

## Types of Power Lines

Because new transmission lines generally have an impact on the community and are expensive to construct and maintain, utilities carefully evaluate their need and will not build them until there is a proven demand for their capacity.

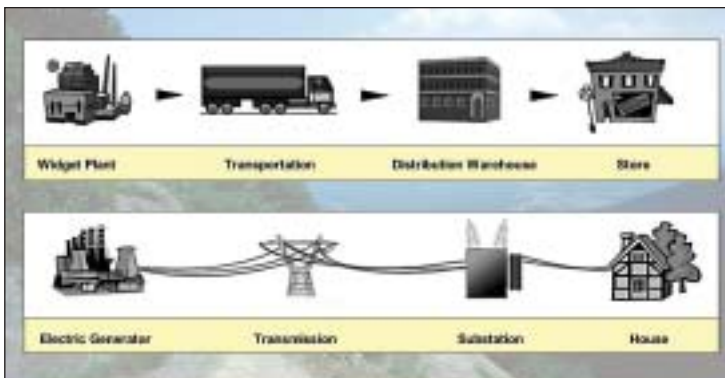
To better understand the functions of the various types of power lines, think of them as highways of power.

**Transmission Lines:** *Transmission lines are like freeways and are designed to transport large quantities of electricity from power plants over long distances. Substations serve as the exit ramps for these power transfers and drop the power to a lower voltage.*

**Distribution Lines:** *After substations drop the voltage, distribution lines which serve as the local roads, feed the power to businesses and homes.*

Georgia Power uses three transmission voltages: 500 kv, 230 kv, and 115 kv to move power around the state.

In constructing new transmission lines, the company makes every effort to minimize the amount of rights-of-way needed. For instance, by utilizing a 500 kv line instead of 115 kv, Georgia Power is able to transmit 16 times the amount of power using only 50 percent more land. But the higher the voltage, the larger and more costly the equipment associated with its operation and maintenance.



## Reliability

The importance of having a strong and secure transmission system was clearly demonstrated by the events of Aug. 14, 2003. On that date, some 50 million people in the Northeast were plunged into darkness because of a cascading power outage that impacted eight states and parts of Canada. It became the most widespread power outage in U.S. and Canadian history.

Could such a blackout occur here in the Southeast? Possibly, but highly unlikely because of several factors:

- ▲ Georgia Power is the largest of five electric utilities that make up Southern Company, a holding company that is one of the top producers of electricity in the United States. Southern Company also builds and maintains an extensive transmission system that stretches across its four-state service territory.
- ▲ Power plant construction in Southern Company's service area has stayed ahead of population growth. Consequently, Georgia Power has adequate generation located



close to the large population areas in its service territory. This has created a more reliable system, unlike the situation in the Northeast, which depended heavily on imported power from outside the region.

- ▲ Southern Company continually evaluates its transmission system's ability to perform reliably in the future. From 1999 through 2002, Southern Company invested heavily, spending \$3.7 billion to upgrade and expand its transmission and distribution system. Between 2003 and 2006,

Southern Company anticipates spending another \$4.4 billion on transmission and distribution lines. Georgia Power's portion of those new expenditures will exceed \$2 billion.

- ▲ Southern Company continually evaluates the latest technological advancements to enhance the operations and maintenance of its transmission assets. The current system meets or exceeds the North American Electric Reliability Council's standards for planning a reliable bulk transmission system and has been acclaimed as one of the better engineered and operated systems in the country.
- ▲ Southern Company's transmission system is monitored continuously, is highly automated and is built with numerous redundancies to protect it in the event of catastrophic fluctuations in power flows. Automated features allow for problems to be isolated quickly so that outages can be minimized and service preserved to as many customers as possible.

## Line Siting

Before new transmission rights-of-way are proposed, multiple options are explored. Georgia Power looks at increasing the size of existing transmission lines, adding new lines next to existing ones, installing larger transformers, or rerouting the power in other directions. After all these factors are weighed or implemented, only then is a new line and right-of-way authorized. In addition, since a major portion of Georgia's transmission system is jointly owned by four parties (Georgia Power, Georgia Transmission Corporation, MEAG Power and Dalton Utilities), all owners, through a joint transmission planning process, review and concur that there is a need for the new line. These owners study transmission system proposals for the state to ensure they are sound, economical, protect overall reliability, and avoid having duplicate lines constructed that are serving the same load.

Once it is determined that a new transmission line is needed, the big question that always comes up is, "Why are you putting it in my backyard?"

When selecting a new transmission line route, Georgia Power weighs several factors:

- ▲ Community and environmental impact
- ▲ Engineering
- ▲ Reliability
- ▲ Safety
- ▲ Cost

After the route has been selected, research is done to determine who owns the property. Next, the Georgia Power representative meets face-to-face with each property owner to review the project and discuss any issues they may have concerning the transmission line's route. After that, surveys are made, and the land is valued by independent appraisers. Property owners then are offered compensation for use of the easement.



## Why Not Put Transmission Lines Underground?

Some customers ask why transmission lines can't be placed underground, like utilities sometimes do with neighborhood distribution lines, thus avoiding the visual impact of structures and lines.

The answer is pretty simple: It takes huge sums of money and specialized infrastructure to place transmission lines underground. It costs a lot more to dig and bury the thick cables needed for underground transmission than building towers to support the overhead lines. Also, underground lines have special construction requirements needed to cool and protect the cables. These requirements can include installing underground tunnels, vaults or oil-cooled pipes that are encased in concrete to house the cable. Another daunting factor is that underground cables are harder to service and maintain since problems aren't as easy to spot and repair. Consequently, power outages involving underground transmission lines could take considerably longer to fix than problems on overhead lines.

Today, Georgia Power has less than 20 miles of underground transmission lines, just a small fraction of its 12,300 mile transmission line system.

Because distribution lines are designed to carry a lower voltage, serve a shorter distance and typically handle less power, Georgia Power has been able to place more than 15,000 miles of these lines underground. But again, underground lines are more expensive to install and usually have to be replaced in about 30 years -- while overhead wires last twice as long. Also, developers of subdivisions or commercial office parks pay utilities for the extra cost of burying local distribution lines so that the cost is not charged to all ratepayers.





This 230 kv transmission line (above), is designed to transport large amounts of power across long distances. A substation steps the power down to a lower voltage that then flows into a residential neighborhood through distribution lines (right).







## Eminent Domain

Sometimes it is necessary for a utility to use eminent domain to acquire the rights-of-way to construct a new transmission line or substation. In its broadest definition, eminent domain is “the right to acquire property for the good of the majority, with just compensation being given the owner.” For more than 100 years, Georgia Power has prided itself on using every other means of obtaining rights-of-way before considering eminent domain. As a result, the company has an excellent track record and has only had to exercise the eminent domain procedure in about 3 percent of all the easements it has obtained.

Georgia Power attributes its acquisition success rate, among the best in the industry, to its willingness to meet individually with property owners, listen to their issues and work cooperatively with them to find acceptable solutions.

## Vegetation Management

Georgia Power provides tree pruning, undergrowth mowing and application of herbicides as part of its regular rights-of-way maintenance program. All vegetation management activities are performed by contractors. Their work is supervised by a Georgia Power forestry services representative who has either received a college degree in forestry, passed the International Society of Arboriculture’s Certified Arborist exam, or both.

Maintenance is performed on routine cycles based on right-of-way width and easement rights.





To date, some 1,500 Georgians have received cash grants exceeding \$1 million to turn more than 9,000 acres of their rights-of-way into wildlife habitats through the Project WINGS program. For more information, visit: [www.tworiverscd.org/links/wings.html](http://www.tworiverscd.org/links/wings.html)

## WINGS

Since 1996, Georgia Power has partnered with the Two Rivers Resource Conservation and Development Council to maximize beneficial use of right-of-way land under a program called Project WINGS (Wildlife Incentives for Non-game and Game Species).

This project provides cash grants of up to \$100 per acre, along with wildlife planning assistance from the USDA Natural Resources Conservation Services, to groups and individuals interested in managing these transmission rights-of-way for a three-year period. The goal of the program is to replace tall-growing plants, which routinely must be mowed to prevent interference with power lines, with more desirable plant species that will benefit wildlife and not interfere with the transmission line. The program cuts maintenance costs associated with mowing under transmission lines and benefits wildlife by providing additional friendly habitats.

To learn more about the WINGS grant program, call (706) 885-0101.

## Electric and Magnetic Fields

Several years ago, some customers raised questions about electric and magnetic fields (EMF).

After 25 years and more than \$400 million in research support at universities and research institutions throughout the nation, the scientific community has not found that exposure to power-frequency EMF causes harm in humans. This conclusion is consistent with the findings of more than 100 EMF research reviews sponsored by various state, federal and international public health and governmental agencies.

Through our continued commitment to scientific research and our participation in the public dialogue about this issue, Georgia Power and Southern Company will continue to carefully monitor and address the EMF issue.



## Future Growth

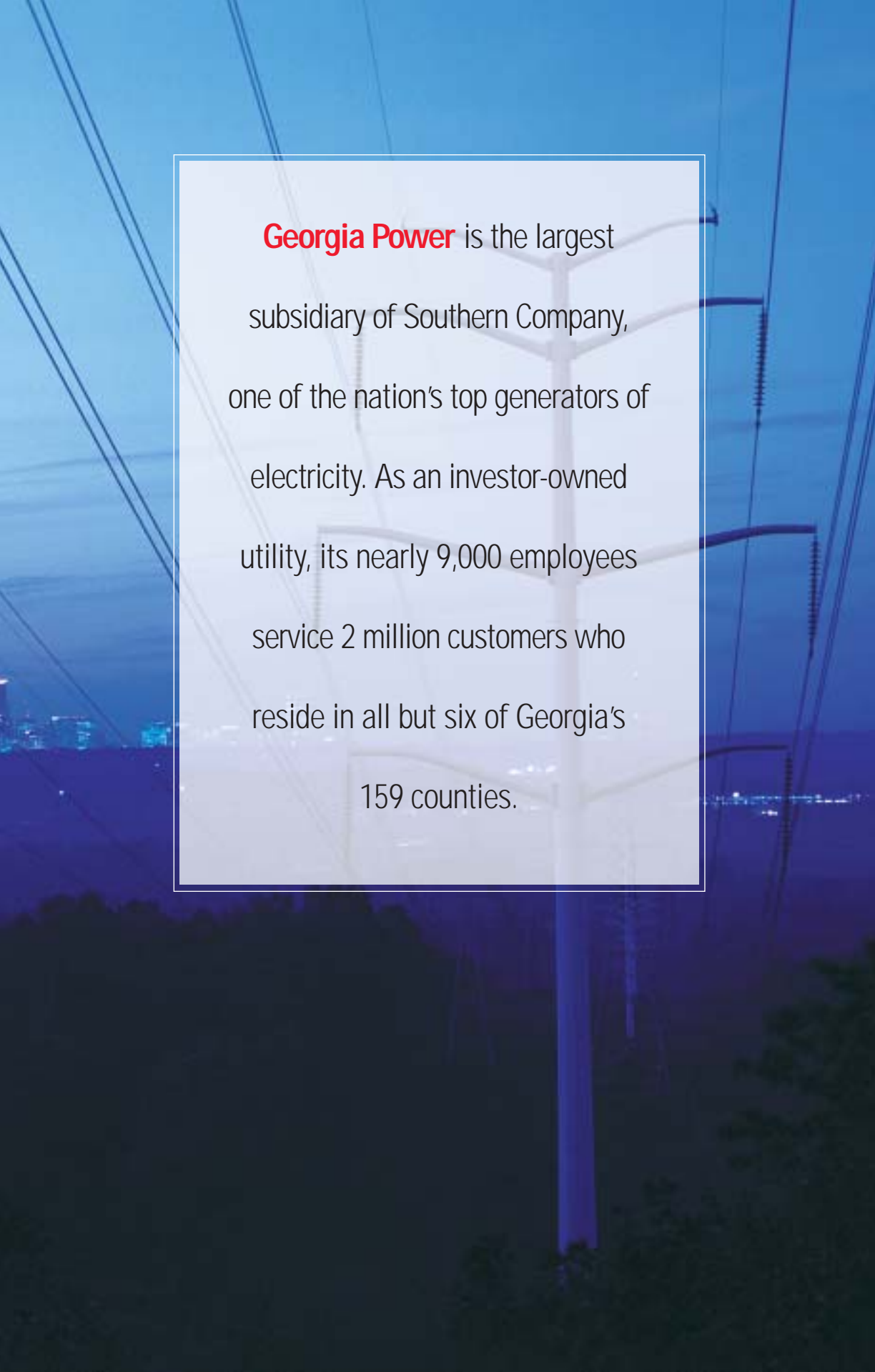
Because Georgia is in one of the fastest-growing states and consumers are using more electricity than ever, Georgia Power is planning today to meet tomorrow's needs. The state predicts that by 2010, it will have an additional 1.1 million people. We will need more than 9,500 megawatts of new generation. Consequently, Georgia Power has been building new transmission lines so it will be able to fulfill customer demand today... and tomorrow.

## Summary

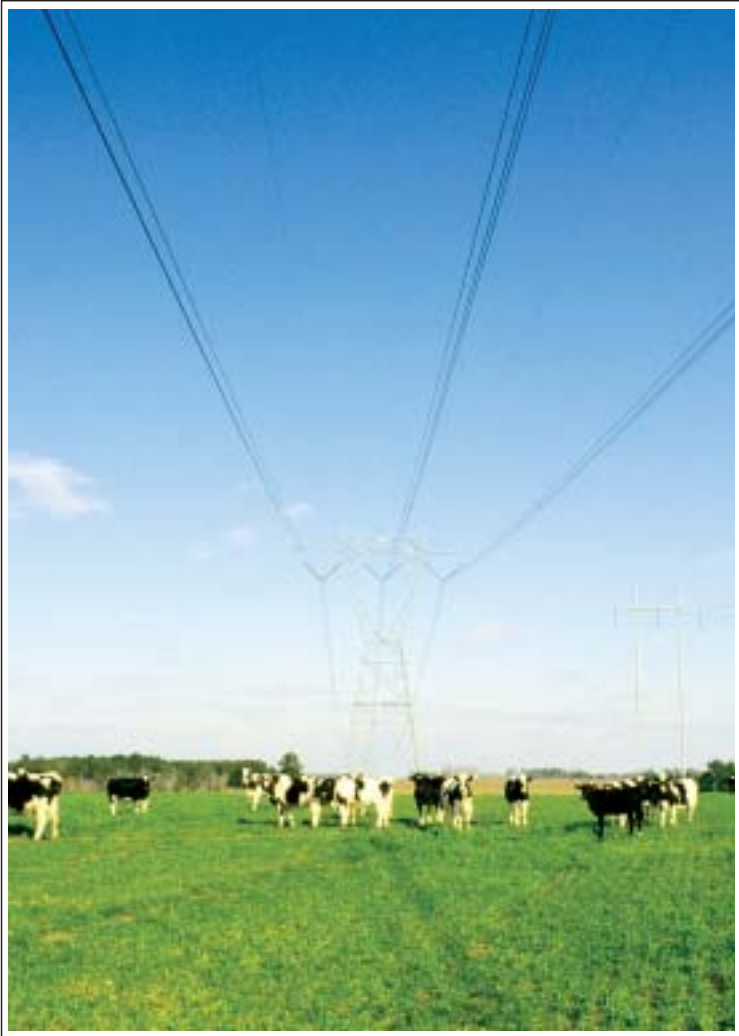
Since the beginning of the electrical age, electricity has played a significant and expanding role in our economy. Its remarkable capabilities have allowed our country to enjoy living standards that are among the best in the world.

To meet the future expansion and growth of our state, it will take continued commitment and foresight by Georgia's leaders to plan and provide for the most efficient and cost-effective power available. And it will be the transmission lines – built today – that will ensure a reliable power supply for the future. After all, when customers in 2010 flick the switch, we want to make sure the dependable power they've come to expect will be there.



A utility pole with power lines against a blue sky. The pole is white and has several cross-arms. Power lines are visible in the foreground and background. The sky is a clear, light blue. In the bottom left corner, there are some dark silhouettes of trees and a few small lights.

**Georgia Power** is the largest subsidiary of Southern Company, one of the nation's top generators of electricity. As an investor-owned utility, its nearly 9,000 employees service 2 million customers who reside in all but six of Georgia's 159 counties.



For additional information about Georgia Power, visit our Web site at [www.georgiapower.com](http://www.georgiapower.com) or contact:

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