

# Lakes, Electricity & You

A close-up photograph of a person's hand, palm facing down, dripping water into a body of water. The water is clear and blue, and the ripples from the falling drops are visible. The background is a soft, out-of-focus blue and green, suggesting a natural outdoor setting.

Why It's So Important  
That Lakes Are Used  
To Generate Electricity



## **Why We Can Thank Our Lakes For Electricity**

### **Because lakes were made to generate electricity.**

Back in the mid-1940s, Congress recognized the need for better flood control and navigation. To pay for these services, Congress passed laws that started the building of federal hydroelectric dams, and sold the power from the dams under long-term contracts. Today these dams provide efficient, environmentally safe electricity for our cities and rural areas.

### **And now these beautiful lakes are ours to enjoy.**

There are now 22 major man-made lakes all across the Southeast built under these federal programs and managed by the U.S. Army Corps of Engineers — lakes that help prevent flooding and harness the renewable power of water to generate electricity.

Power produced at these lakes is marketed by the Elberton, GA–based Southeastern Power Administration (SEPA).

**J. Strom Thurmond Lake  
Photo courtesy Jonas Jordan,  
U.S. Army Corps of Engineers**

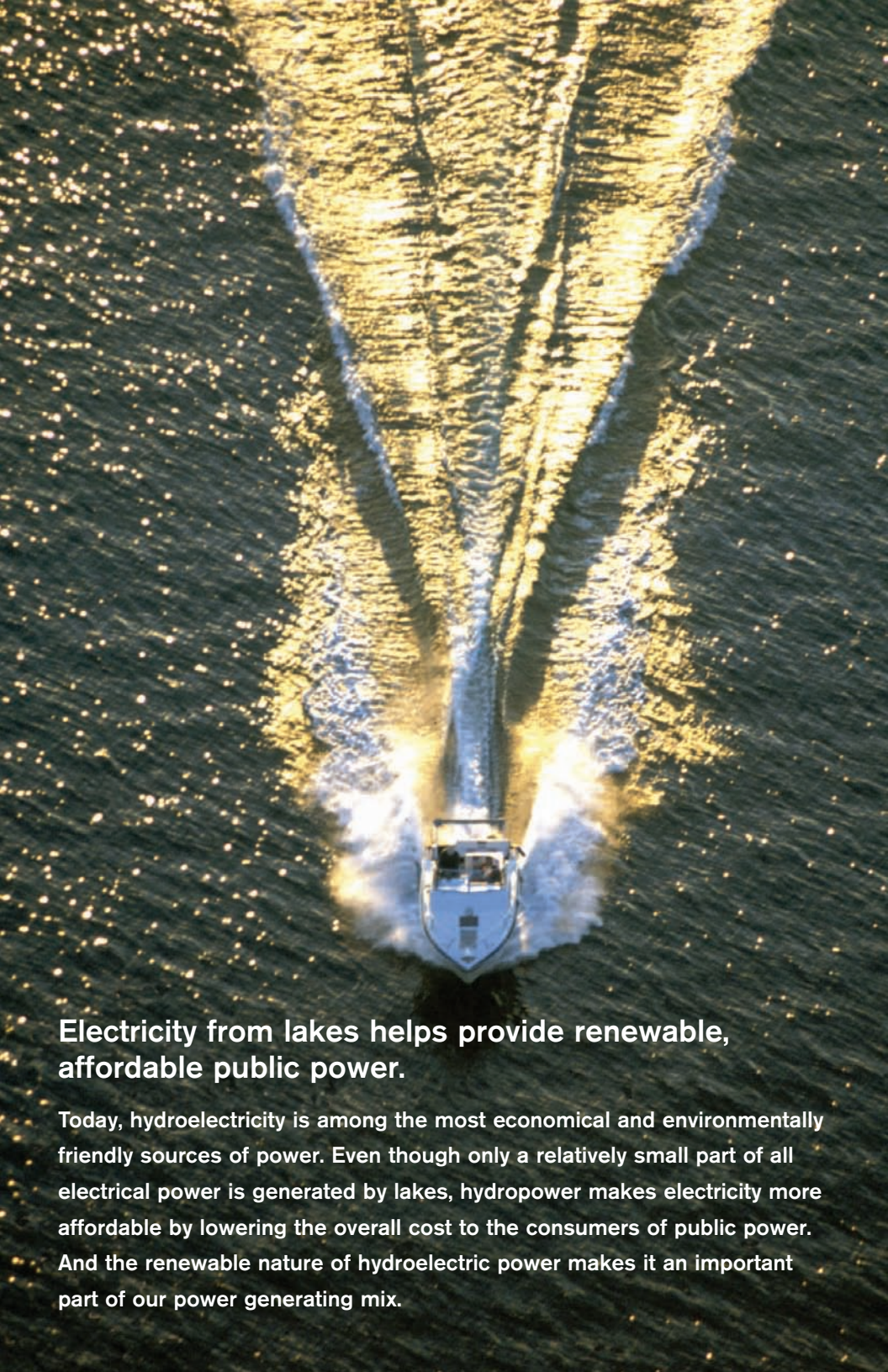




## How The Sale Of Electricity From Lakes Benefits Everyone

The sale of electricity pays back all the costs of building, operating and maintaining hydroelectric facilities — and covers most of the costs of the reservoirs, which provide flood control, navigation and recreation.

The original cost of building the dams and creating the lakes was considerable, and initially hydropower (electricity produced by lakes) was more expensive than power from other sources. Forward-looking consumer-owned electric utilities, however, believed hydropower would be an important future resource and contracted to buy the electricity produced by the lakes. The revenue from the sale of hydropower pays back not only all of the costs of building, operating and maintaining the hydroelectric facilities, but also covers most of the costs of the reservoirs, which also provide flood control, navigation and recreation at each of the lakes. So everyone benefits from the sale of electricity from our lakes.



**Electricity from lakes helps provide renewable, affordable public power.**

Today, hydroelectricity is among the most economical and environmentally friendly sources of power. Even though only a relatively small part of all electrical power is generated by lakes, hydropower makes electricity more affordable by lowering the overall cost to the consumers of public power. And the renewable nature of hydroelectric power makes it an important part of our power generating mix.

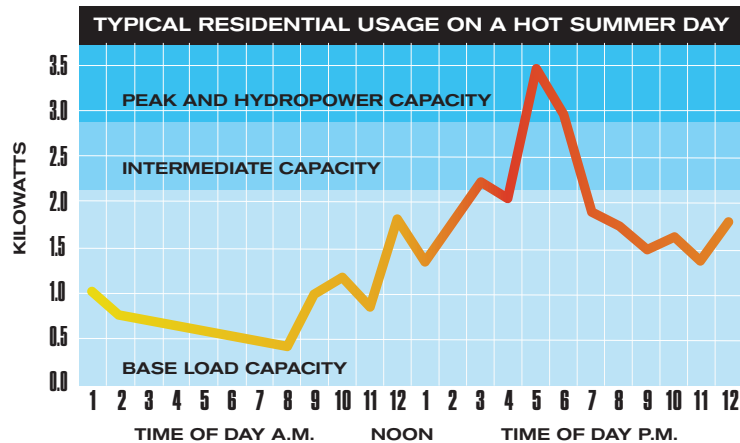


## Why Electric Power From Lakes Must Be Consistent And Dependable

When consumer-owned electric utilities are assured of access to hydropower, they can save millions by not building new generating plants.

The demand for electricity from consumer-owned electric utilities varies significantly at different times of the day and year. We must have the generating capacity of the dams to meet all peak load requirements, as is indicated by the chart below. Hydropower can help meet peak load requirements and provide the power reserve cushion that consumer-owned electric utilities must have to operate.

However, if hydropower is not always available, even when lake levels are low, it becomes an unreliable source of electricity and we must secure more expensive sources of electricity to meet peak demand.



Sometimes special interest groups oppose the use of lakes for hydropower generation.

Water from lakes must pass through dams to generate electricity. Normally, this does not affect lake levels because, on the average, the same amount of water flowing into the lakes is released through the dam for downstream flow. Occasionally, however, during drought conditions, lakes drop below ideal levels. Sometimes when this happens, individuals and special interest groups try to exert pressure on the Army Corps of Engineers and government officials to restrict the flow of water through the dam. This is when everyone needs to remember that lakes and dams were built primarily to generate electricity and for flood control. Most of the time, enough electricity can be generated without affecting boating, fishing and swimming. But, during those rare times when lakes drop below ideal levels, it is important to remember why the lakes are there in the first place.



Richard B. Russell Lake  
Photo courtesy Jonas Jordan,  
U.S. Army Corps of Engineers

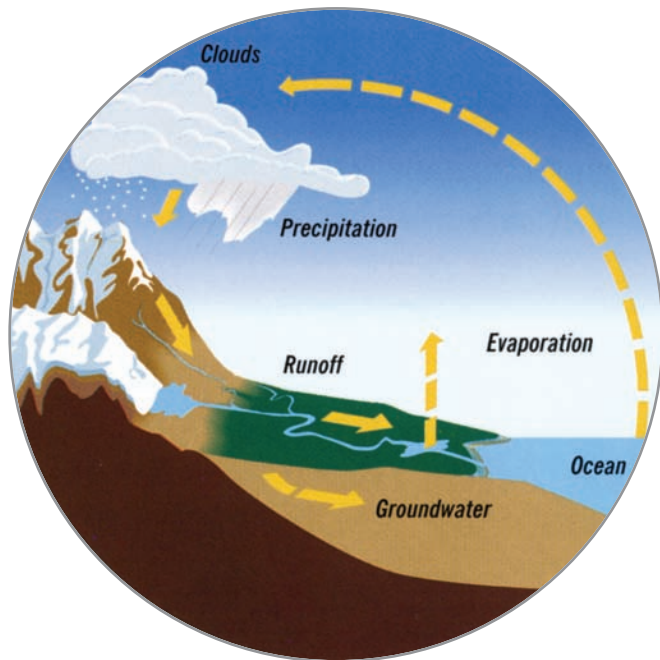
# How Hydropower Works

## The Hydrologic Cycle:

Water constantly moves through a vast global cycle in which it:

- Evaporates from lakes and oceans,
- Forms clouds,
- Precipitates as rain or snow, and
- Then flows back to the sea.

The energy of this water cycle, which is driven by the sun, is tapped most efficiently with hydropower.



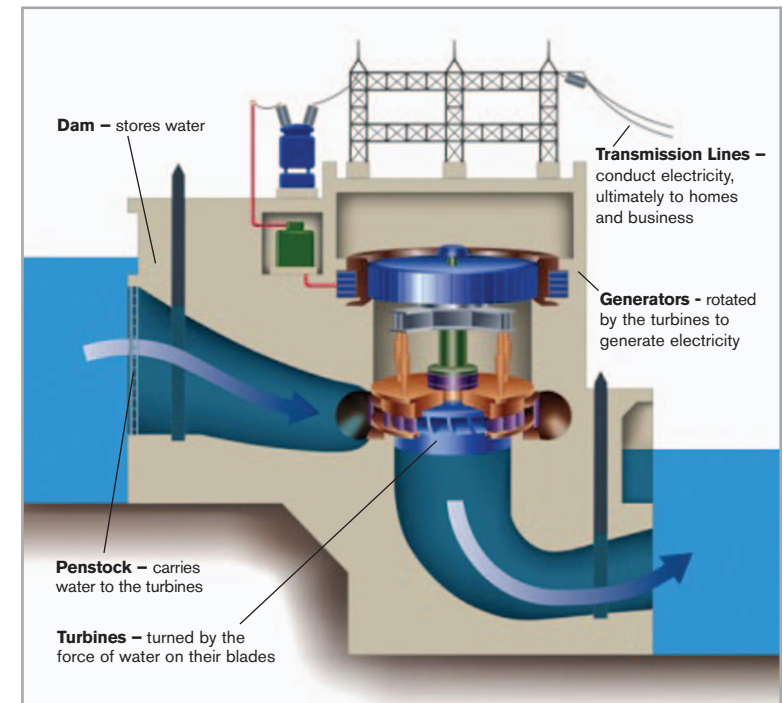
## Types of Hydropower Facilities

**Impoundment Hydropower** – Uses a dam to store water (see illustration).

Water may be released to meet changing electricity needs and maintain appropriate reservoir levels.

**Diversion Hydropower** – Channels a portion of the river through a canal to a penstock, but may require a dam.

**Pumped Storage** – Pumps water from a lower reservoir to an upper reservoir at times when demand for electricity is low. During periods of high electrical demand, the water is released back into the lower reservoir to generate electricity.





## How You Can Say “Thanks To Electricity”

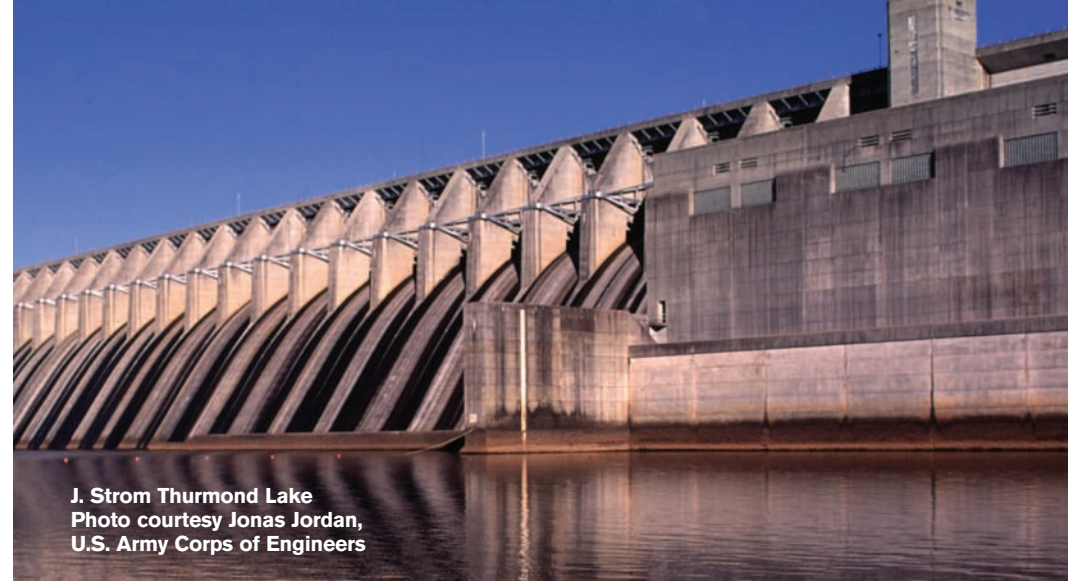
Now that you know that lakes were created for flood control and to generate electricity, we hope you will become a supporter of clean, renewable hydroelectric power. This is important because often it is only the special interest groups who are heard when lake levels are low.

You can say “thanks to electricity” by speaking out to your neighbors, the media, and your local, state and national government representatives. With your help, we can protect our lakes and preserve the great natural resource of water.

### The Power of Water

The Southeastern Federal Power Customers Inc. is a group of electric cooperatives and municipal power companies that represent more than six million consumers of public power in the Southeast. Our goal is to raise awareness and build understanding of the benefits of hydroelectricity and to protect it as a natural resource.

**Hartwell Lake**  
Photo courtesy Jonas Jordan,  
U.S. Army Corps of Engineers



**J. Strom Thurmond Lake**  
Photo courtesy Jonas Jordan,  
U.S. Army Corps of Engineers

### Hydroelectric Project Lakes

- Hartwell Lake
- Richard B. Russell Lake
- J. Strom Thurmond Lake (formerly Clarks Hill)
- Carters Lake
- Allatoona Lake
- Lake Sidney Lanier (Buford Dam)
- West Point Lake
- Walter F. George Reservoir (Lake Eufaula)
- Jim Woodruff Project (Lake Seminole)
- Robert F. Henry Dam (Bob Woodruff Lake, Jones Bluff Plant)
- Millers Ferry Project (William B. Dannelly Lake)
- Philpott Reservoir
- John H. Kerr Reservoir
- Lake Barkley
- Cheatham Lake
- Old Hickory Lake
- J. Percy Priest Lake
- Cordell Hull Lake
- Center Hill Lake
- Dale Hollow Lake
- Wolf Creek Project (Lake Cumberland)
- Laurel River Lake

## Southeastern Federal Power Customers

### Alabama

PowerSouth Energy Cooperative  
Andalusia, AL 36420-0550  
334/427-3000

Alabama Municipal Electric Authority  
Montgomery, AL 36103-5220  
334/262-1126

### Florida

Jim Woodruff Preference Customers  
115 Lincoln Drive  
Chattahoochee, FL 32324  
850/663-4475

### Georgia

Municipal Electric Authority of Georgia  
Atlanta, GA 30328-4640  
770/952-5445

Oglethorpe Power Corporation  
Tucker, GA 30084-5336  
770/270-7600

### Kentucky

East Kentucky Power Cooperative, Inc.  
Winchester, KY 40392-0707  
859/744-4864

Big Rivers Electric Corporation  
Henderson, KY 42419-0024  
270/827-2561

### Mississippi

East Mississippi Electric Power Association  
Meridian, MS 39302-5517  
601/483-7361

Municipal Energy Agency of Mississippi  
Jackson, MS 39201-2898  
601/353-4763

South Mississippi Electric Power Association  
Hattiesburg, MS 39404-5849  
601/268-2083

### North Carolina

North Carolina Eastern Municipal Power Agency  
Raleigh, NC 27262-9513  
919/760-6000

North Carolina Electric Membership Corporation  
Raleigh, NC 27611-7306  
919/872-0800

North Carolina Municipal Agency No. 1  
Raleigh, NC 27262-9513  
919/760-6000

### South Carolina

Central Electric Power Cooperative, Inc.  
Columbia, SC 29202-1455  
803/779-4975

Orangeburg Dept. of Public Utilities  
Orangeburg, SC 29116-1057  
803/534-2821

Piedmont Municipal Power Agency  
Greer, SC 29651-1236  
864/877-9632

Santee Cooper  
Moncks Corner, SC 29461-6101  
843/761-8000

### Virginia

Blue Ridge Power Agency  
Danville, VA 24541-1819  
434/799-8375

Virginia Cooperative Preference  
Power Customers  
Mt. Crawford, VA 22841-0236  
540/434-2200

Virginia Municipal Electric Association #1  
Harrisonburg, VA 22801-2699  
540/434-5361



**Richard B. Russell Lake**  
Photo courtesy Jonas Jordan,  
U.S. Army Corps of Engineers

