

Georgia's State Water Plan

Energy Forecast Updates

www.georgiawaterplanning.org

Energy Water Use Forecast Updates

Energy generation facilities contribute uniquely to the entire Statewide power portfolio

Each power facility has a unique water to power production signature

- Fuel Type (coal, natural gas, nuclear)
- Prime Mover (thermal energy into mechanical energy)
- Cooling Type (single pass vs. evaporative)

The relative contribution of each facility can change over time as facilities retire or are brought on-line

Energy water needs are forecasted based upon facility type and total power production (est. from population projections)

Baseline: Expected energy need based on regression analysis & new population projections

High Demand: Standard error from the regression analysis is used to estimate 95% upper limit

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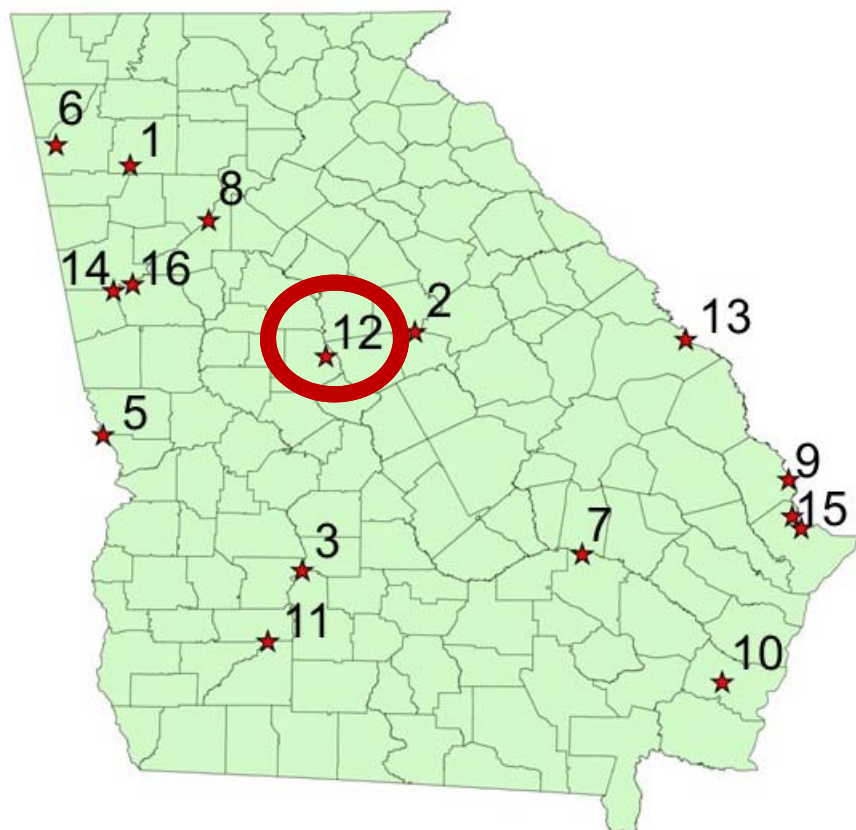
Energy Water Use Calculations are based upon:

$$\begin{array}{lcl} \text{Energy Water Use (per generating unit)} & = & \\ \text{Water Withdrawal Requirements} & & \text{Power Generation} \\ \text{[gal/MWh]} & \times & \text{[MWh]} \\ \hline \text{Water Consumption Requirements} & & \text{Power Generation} \\ \text{[gal/MWh]} & & \text{[MWh]} \end{array}$$

While the energy water use calculations are still based upon the previous relationship between population and energy needs, the energy needs have changed based on new population projections.

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Thermoelectric Power Facilities in Georgia with Water Withdrawal Permits



Facility Name	County
1. Plant Bowen	Bartow
2. Plant Branch	Putnam
3. Crisp County Power Comm- Steam	Worth
4. Gum Power Plant LLC	Mitchell
5. H Allen Franklin ¹	Lee (Alabama)
6. Plant Hammond	Floyd
7. Plant Hatch	Appling
8. Plant Jack McDonough	Cobb
9. Plant McIntosh	Effingham
10. Plant McManus	Glynn
11. Plant Mitchell	Dougherty
12. Plant Scherer	Monroe
13. Voglte	Burke
14. Plant Wansley	Heard
15. Plant Wentworth (Kraft)	Chatham
16. Plant Yates	Coweta

¹ Plant is physically located in Alabama; water withdrawal permit from Georgia EPD

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Water and Power Results are not complete yet

Energy forecast still under development with input from the Energy Ad Hoc group

Assumptions:

Hydropower generation is constant

Small percentage of the energy needs will be met via renewable (wind & solar) energy

One major power generating facility in the Middle Ocmulgee Region (Plant Scherer in Monroe County)

One of the largest single generating stations in the United States

The plant withdraws from Lake Juliette, which receives water transferred by a pumping station from the nearby Ocmulgee River

Round 1 included a plant average withdrawal of approximately 59 MGD and returns of 25 MGD, effectively consuming an estimated 34 MGD of water on an annual average daily basis.

Questions & Discussion