**GEORGIA POWER COMPANY**

**LOAD AND ENERGY FORECAST**

Georgia Power Company prepared a twenty-year load and energy forecast during 2021 to determine system planning requirements. A comprehensive description of the forecast is contained in Volume 1, Budget 2022 Load and Energy Forecast, of the technical appendices of the 2022 Integrated Resource Plan filed in Docket No. 44160. The Budget 2022 Forecast includes the retail classes of residential, commercial, industrial, governmental lighting, and MARTA. The load and energy forecasts are used to (1) develop the retail revenue forecast, (2) quantify our expected peak demand, (3) prepare a cost-of-service study as necessary, and (4) budget resources required to provide reliable service to our customers on a continuing basis. The forecast includes the test period for this regulatory filing, the twelve months ending July 31, 2023.

The Budget 2022 load and energy forecasts were developed through a joint effort of Georgia Power and Southern Company Services (SCS). The load and energy forecasts were developed through careful consideration and methodical examination of key demographic and economic variables that historically have been significant indicators of energy consumption. Major assumptions include the economic outlook for the United States and Georgia, energy prices, and market profiles for class end-uses.

The economic forecast provides a description of the economy for the next 20 years and includes many elements of the economy such as gross product, population, employment, commercial building square footage, and industrial production. The economic and demographic forecasts for Budget 2022 were obtained from IHS Markit, a national provider of economic data and forecasts.

Georgia, like the United States generally, experienced robust economic growth from 2013-2019. Over this period, U.S. Gross Domestic Product (“GDP”) growth averaged 2.5% per year, and employment growth averaged 1.7% per year. In Georgia, output and employment grew by 3.3% and 2.3% per year, respectively. In 2019, the U.S. unemployment rate dropped as low as 3.5%, while Georgia’s rate fell to 3.3%.

The beginning of the Pandemic in March of 2020 brought an abrupt end to this period of economic growth, with a short but deep recession and then a sharp rebound. Georgia lost more than 600,000 jobs from February to April 2020, and the unemployment rate jumped to 12.5%. Georgia Power’s total retail sales fell by more than 9% in April of 2020, with commercial sales down more than 13% and industrial sales down over 18% compared to April 2019. Residential sales jumped more than 8% in April as people worked from home and students attended school virtually. Total retail sales increased as the year went on, as businesses reopened, and people began to resume some of their pre-pandemic activities. Towards the end of 2020, total retail sales were down 2.2% versus the prior year. Residential sales were up 3.4%, while commercial and industrial electricity sales were down 5.3% and 4.5%, respectively. As sales continued to recover in 2021, the total retail sales for the year finished above pre-pandemic levels, largely driven by growth in the residential and industrial classes. Sales to the commercial class in 2021 remained below their 2019 level.

Post pandemic, Georgia is expected to return to robust economic growth over the twenty-year forecast horizon. One factor that will help drive growth is that Georgia remains an attractive place to do business. Businesses are attracted by factors such as Georgia’s low cost of doing business and low cost of living, a deep pool of knowledge and technical workers due to its university system, Georgia’s globally connected airport and transportation infrastructure (e.g., ports and highways), and its business-friendly environment. Positive demographic trends will also drive economic growth in the state. As businesses continue to relocate and expand in Georgia, the state will experience solid employment growth, which will attract new residents. As a result, population growth in Georgia is projected to remain above the U.S. average.

Additional businesses and a growing population are expected to provide a boost to energy sales. From 2022 to 2041, total energy sales are projected to grow at an average annual rate of 0.8%. Residential sales are expected to grow by an average of 1.1% per year over this period as the increase in the number of customers surpasses the reduction in use per customer resulting from energy efficiency. Industrial sales are expected to increase at an average annual rate of 0.9%. Sales to the commercial class are expected to have a modest growth of 0.4% per year due to continued adoption of energy efficiency standards. Summer and Winter peak demands are expected to increase at an average rate of 0.7% per year during this time. Georgia Power is expected to remain a summer-peaking utility over the forecast horizon.

The models used to produce both the short- and long-term energy forecasts include a variety of economic and demographic variables as drivers of energy use. Weather, income, employment, historical load data, and industry efficiency standards for electrical equipment are among the variables used in the forecasting models. “Normal” weather is defined as the average of Cooling Degree Hours (CDH) and Heating Degree Hours (HDH) from 1980 to 2020.

Short-term energy projections for the residential, commercial, and industrial classes are based on linear regression models. The short-term and long-term MARTA forecasts are based on econometric models, while the governmental lighting short-term and long-term foreasts are based on information provided by Georgia Power field personnel.

The long-term forecast models are end-use models. Budget 2022 uses the Load Management Analysis and Planning (LoadMAP) model to produce the long-term residential, commercial, and industrial forecasts through 2041.

The results from short-term (years 2022 through 2025) and long-term (2026 through 2041) models were integrated into a 20-year unified energy forecast by calibrating long-term models to both historical data and short-term forecasts. This regulatory filing uses the twelve (12) months ending July 31, 2023 as the test period, so the forecast results are from the short-term models.

The integrated energy forecasts were used in Georgia Power’s hourly peak demand forecast models for the production of the peak demand and total energy supply (energy at the generator). The peak demand models also use historical hourly load research data for each customer class to derive functions that describe the relationship of load, selected seasons and day-types, and corresponding weather profiles, for weather-sensitive classes. The class monthly energy sales were fitted to those historical load profiles using a description of normal (typical) weather and the derived relationship functions. The normal (typical) weather profile consists of a ranked and sorted monthly weather series over a 41-year period, exhibiting weather characteristics associated with peaking conditions. The peak models provide each of the following results at the class level: coincident peak demands, non-coincident peak demands, energy requirements at the supply level. Supply level energy requirements are derived by class from the monthly energy sales forecast, using factors that describe the percentage of losses between generator level and the meter level.

The peak demand forecast includes adjustments for price sensitive rates (RTP), demand side management programs (DSM), and new cogeneration. A more comprehensive description of the load and energy forecast process and the results are included in the previously mentioned documentation.