Technical Information Supporting the Proposal to Develop up to 1,400 MW from Three Simple Cycle Combustion Turbines at Plant Yates

# Summary

Georgia Power Company (“Georgia Power” or the “Company”) is requesting authority to develop, own, and operate up to 1,400 MW of advanced frame, dual-fuel simple cycle combustion turbine (“CT”) resources in its 2023 Integrated Resource Plan (“IRP”) Update. Three dual-fuel CTs are proposed to be located at Plant Yates, an existing Company-owned plant in Coweta County, Georgia, which is currently home to two converted natural gas steam units – Plant Yates Units 6&7. Following existing naming convention, the new dual-fuel CTs would constitute Plant Yates Units 8-10. Under the proposed schedule, the CT resources could achieve commercial operation by December 1, 2026, for Units 8 and 9, and April 1, 2027, for Unit 10. This report provides additional technical information to support the Company’s proposal to develop the three CTs. If approved by the Georgia Public Service Commission (“Commission”), the Company will return to the Commission after executing an Engineering, Procurement, and Construction (“EPC”) agreement and will request certification of the CT resources.

# Technology

The proposed project would utilize three, dual-fuel capable **REDACTED REDACTED** CTs. This technology consists of a high-efficiency compressor, combustor, and high-efficiency turbine that works in the following manner. First, the inlet air is filtered and then compressed in a multiple stage axial flow compressor. The compressed air and fuel are mixed and combusted in the turbine combustion chamber. Hot exhaust gases from the combustion chamber expand through a multi-stage power turbine that results in energy to drive both the air compressor and electric power generator. Advancements in CT design and exhaust gas temperature management enable the simple cycle units to be fitted with catalyst systems to reduce emissions. Each CT will have a winter output of approximately **REDACTED** MW when firing on natural gas and **REDACTED** MW on fuel oil. The proposed project would be designed to have a 45-year asset life. Figure 1 provides additional estimated performance metrics for the proposed project.

Figure 1 - Estimated Performance Metrics for Plant Yates Units 8-10

|  |  |  |
| --- | --- | --- |
|  | Natural Gas | Fuel Oil |
| Winter Capacity (MW) | **REDACTED** | **REDACTED** |
| Summer Capacity (MW) | **REDACTED** | **REDACTED** |
| Winter Heat Rate (Btu/kWh) | **REDACTED** | **REDACTED** |
| Summer Heat Rate (Btu/kWh) | **REDACTED** | **REDACTED** |

# Schedule

To meet significant capacity needs beginning in the winter of 2026/2027, certain development and long-lead-time procurement activities related to the three proposed CTs at Plant Yates must commence as early as fourth quarter 2023. Figure 2 summarizes the project schedule, including estimated start dates for major milestones necessary to achieve the required Commercial Operation Date (“COD”) for each unit. Estimated milestone dates are subject to change pending execution of a final EPC agreement and commencement of site work.

Figure 2 - Estimated Project Schedule for Plant Yates Units 8-10

**REDACTED**

# Estimated Cost

A summary of preliminary cost estimates for Plant Yates Units 8-10 is provided in Figure 3. Costs are subject to change pending execution of a final EPC agreement. Economic analyses for Plant Yates Units 8-10 are found in the Economic Analysis of Capacity Resources document in the Technical Appendix. The economic analysis and associated workpapers contain information on the Company’s financing cost, assumed spending curves, plant operating costs, and other information impacting the revenue requirement for the proposed CTs.

Figure 3 - Estimated Costs for Plant Yates Units 8-10

|  |  |
| --- | --- |
| Overnight Cost (millions of dollars) | **REDACTED** |
| In-Service Capital (millions of dollars) | **REDACTED** |

# Conclusion

The proposed CT resources are designed to provide reliable, dispatchable power to meet significant capacity needs beginning in the winter of 2026/2027. These advanced high-efficiency turbines will benefit Georgia Power’s customers for many years to come. If approved by the Commission, the Company will return to the Commission upon execution of a final EPC agreement and request certification of Plant Yates Units 8-10.