Transmission Screening Analyses Overview

Georgia Power Company (“Georgia Power” or the “Company”) performed transmission screens for various generation resource options under consideration by the Company to support its generation resource needs as described in the 2023 IRP Update. The screens utilized 2023 V2A power flow base cases along with scenarios shown in Table 1:

Table 1 - Transmission Screen Scenarios

|  |  |
| --- | --- |
| **Screen Scenario** | **Description** |
| Base | Includes all large loads which have selected Georgia Power and prior queued projects |
| A1 | Base scenario with other retail operating company unit extensions and the following Georgia Power resource extensions:   * Gaston 1-4, Bowen 1-4, and Scherer 3 available through 2035   Base scenario with the following potential power purchase agreements (“PPAs”):   * Lindsay Hill years 2026 – 2035 * Santa Rosa years 2026[[1]](#footnote-2) – 2028 |
| A2 | Scenario A1 with Lindsay Hill PPA starting on 5/2029 (due to transmission constraints and project timing limitations) |
| B | Scenario A1 with proposed Yates CTs and their respective commercial operation dates |
| C[[2]](#footnote-3) | Scenario B with proposed 200 MW battery energy storage systems (“BESS”) co-located with 200 MW solar project |

The transmission screening analysis determined that all unit extensions required to support the 750 MW Mississippi Power Company PPA can be accommodated along with the PPA for capacity and energy from the Santa Rosa combined cycle facility located in northwest Florida with no required transmission projects (Scenario A1).

Initial transmission screens of a potential Lindsay Hill PPA (Scenario A1) required currently planned projects to be advanced and completed sooner than planned. After additional evaluation (Scenario A2), it was determined that the required transmission projects could not be advanced, which would mean that a potential Lindsay Hill PPA could only be considered as a capacity resource option starting after the summer of 2029. Due to these limitations, a potential Lindsay Hill PPA was not considered as a viable resource option for the accelerated capacity needs in the 2023 IRP Update.

After the generation resource portfolio was determined from Scenarios A1 and A2, approximately 1,350 MW of combustion turbines proposed at Plant Yates (Scenario B) were screened with commercial operation dates of 11/2026 (2 units) and 2/2027 (1 unit), respectively. Transmission screens revealed that approximately $80 million in additional transmission projects are required to accommodate the full output of the facility. Based on the required transmission projects, the Company will plan to limit the proposed Plant Yates CTs to 600 MW of firm output in both summer and winter peak periods until all improvements are in service by the summer of 2028. This information is reflected in the Economic Analysis of Capacity Resources in the Technical Appendix.

In addition to the proposed Plant Yates CTs, the Company screened 415 MW of solar with 200 MW of alternating current-coupled BESS (Scenario C). This proposed project would initially charge solely from solar and eventually transition to a hybrid-charge strategy with ability to charge from the transmission grid. Transmission screens did not identify any attributable transmission projects needed to accommodate the facility’s full output. However, prior-planned projects in the area that are also needed to enable the output are not scheduled to be completed until May of 2029 and cannot be advanced. Therefore, the BESS co-located with new solar project would be limited to 200 MW of firm output in both summer and winter until summer of 2029. The Company is proposing 200 MW of BESS co-located with 200 MW of new solar as further described in the Technical Appendix.

All transmission screen files supporting the analysis in this Technical Appendix are provided as TRADE SECRET workpapers and are redacted in their entirety for PUBLIC DISCLOSURE purposes.

Additional transmission studies in support of the proposed generation resources and the 2023 IRP Update Load and Energy forecast are underway. Analyses are expected to be completed in January 2024 and will be filed by the Company as a supplement to this 2023 IRP Update.

1. The Santa Rosa PPA begins in 2024. The screen has been revised and no transmission constraints were identified. [↑](#footnote-ref-2)
2. No transmission screens were required for the proposed 178 MW of BESS at Robins and Moody Air Force Bases, since the BESS will initially charge from the existing solar facilities at each site, and the output of the facilities has previously been studied and designated. [↑](#footnote-ref-3)