

Final Environmental Assessment

**Washington County Energy
Facility**

**Dual Fuel Conversion Project
Sandersville, Georgia**



**U.S. Department of Agriculture
Rural Utilities Service (RUS)**

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
BACT	Best Available Control Technology
BG	Block Group
BMPs	Best Management Practices
BOP	Balance of Plant
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH ₄	Methane
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CT	Combustion turbine
CT1	Combustion turbine 1
CT2	Combustion turbine 2
CT3	Combustion turbine 3
CT4	Combustion turbine 4
DEMIN	Demineralized
EA	Environmental Assessment
EDR	Environmental Database Report
ECHO	Enforcement and Compliance History Online
EMC	Electric membership corporation
EPA	U.S. Environmental Protection Agency
Facility	Washington County Energy Facility
FPPA	Farmland Policy Protection Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
FRP	Facility Response Plan
GWPs	Global warming potentials
GDNR	Georgia Department of Natural Resources
GDOT	Georgia Department of Transportation
GEPD	Georgia Environmental Protection Division
GHGs	Greenhouse gases
gpm	Gallons per minute
GTC	Georgia Transmission Company
H ₂ SO ₄	Sulfuric acid
HUC	Hydraulic unit code
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
IPaC	Information for Planning & Consultation System
K	thousand
LDAR	Leak detection and repair programs
MCC	Motor control center
mgd	Million gallons per day
MM	million
MMBtu	Million British thermal units
MV	Megavolt
N ₂ O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFPA	National Fire Prevention Association
NFPA 10	Standard for Portable Fire Extinguishers
NFPA 12	Standard for Carbon Dioxide Extinguishing Systems
NFPA 241	Standard for Safeguarding Construction, Alteration, and Demolition Operations
NF ₃	Nitrogen trifluoride

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
NHPA	National Historic Preservation Act
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NSA	Noise Sensitive Area
NRCS	National Resources Conservation Service
NSR	New Source Review
NWI	National Wetlands Inventory
OEM	Original equipment manufacturer
Oglethorpe	Oglethorpe Power Corporation
OMB	Office of Management and Budget
OWS	Oil/water separator
PFCs	Perfluorochemicals
PDC	Power distribution center
PM	Particulate matter
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
PM ₁₀	Particulate matter less than 10 microns in diameter
Program	RUS Electric Loan Program
Project	Dual Fuel Conversion Project
PSD	Prevention of Significant Deterioration
psig	Pounds per square gauge
RE Act	Rural Electrification Act
RUS	Rural Utilities Service
SER	Significant Emission Rate
SF ₆	Sulfur hexafluoride
SHPO	State Historic Preservation Office
Site	Combined site comprised of Washington County Energy Facility and Washington County Power, LLC
SO ₂	Sulfur dioxide

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
SPCCP	Spill Prevention Control and Countermeasures Plan
SSURGO	Soil Survey Geographic Database
SWPPP	Stormwater Pollution Prevention Plan
TADA	Traffic Analysis and Data Application
tpy	Tons per year
UL – rated	Underwriter Laboratories rated
USC	U.S. Code
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Services
USG SC-GHG	U.S. Government social cost of greenhouse gases
IWG	U.S. Interagency Working Group
V	volt
VOC	Volatile organic compounds

1.0 INTRODUCTION

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has been contracted by Oglethorpe Power Corporation (An Electric Membership Corporation) (“Oglethorpe”) to prepare an Environmental Assessment (EA) for submittal to Rural Utilities Service (RUS) for the Dual Fuel Conversion Project (the “Project”) at Oglethorpe’s Washington County Energy Facility located in Washington County, near Sandersville, Georgia (the “Facility”). Currently, the Facility is fueled solely by natural gas. The Project involves upgrading two of the Facility’s existing natural gas-fired combustion turbines (CTs) to run on No. 2 diesel fuel in addition to natural gas. This upgrade would increase reliability at the Facility in case natural gas is curtailed, or cut-off, in times of high demand on the grid and No. 2 diesel fuel would serve as a backup fuel source to maintain plant operations. This draft EA describes the alternatives evaluated, the affected environment, potential environmental consequences, cumulative effects, mitigation measures, and agency scoping for the Project.

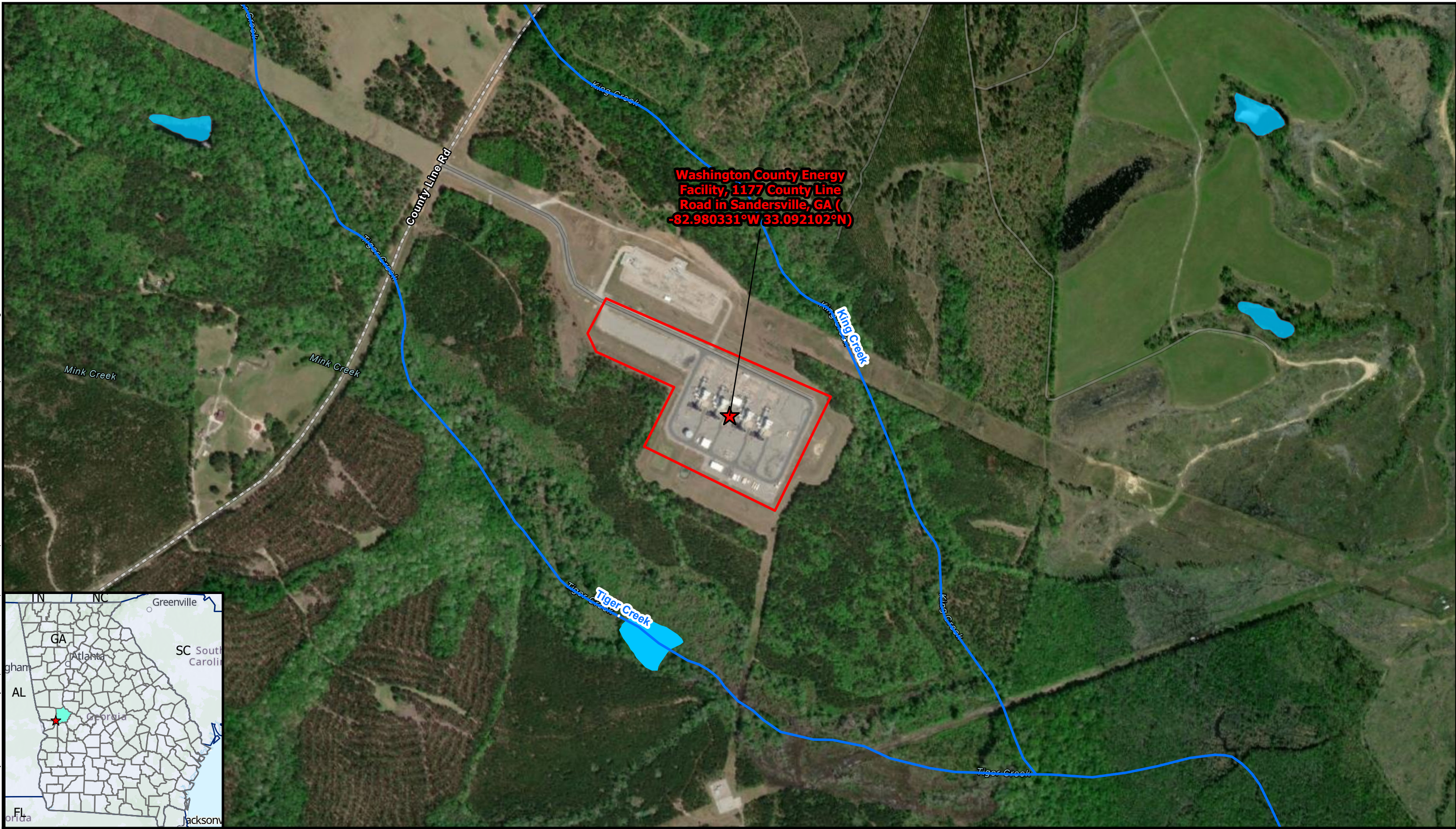
The RUS action under current consideration is the decision to provide financing assistance for the Project. Under the Rural Electrification Act (RE Act), as amended, the Secretary of Agriculture is authorized and empowered to make loans to nonprofit cooperatives and others for rural electrification “for the purpose of financing the construction and operation of generating plants, electric transmission and distribution lines, or systems for the furnishing and improving of electric service to persons in rural areas” (7 U.S. Code [USC] § 904). A primary function or mission of RUS is to carry out this electric loan program (7 USC § 6942).

Oglethorpe, which is headquartered in Tucker, Georgia, is an electricity generation cooperative operating on a not-for-profit basis that generates electricity for 38 of Georgia’s electric membership cooperatives (EMCs). Oglethorpe’s objective is to provide reliable energy to its EMC members to meet their existing and expanding power supply needs. In 2002, LG&E Power built the power plant consisting of four natural gas-fired simple cycle CTs, initially known as LG&E Power, Tiger Creek, LLC, in the city of Sandersville in Washington County, Georgia. Less than two years after construction, the power plant changed ownership, and the name of the site became Washington County Power, LLC. Oglethorpe acquired two of the CTs (combustion turbine 2 [CT2] and combustion turbine 3 [CT3]) from Washington County Power, LLC on December 20, 2022. The remaining two CTs (combustion turbine 1 [CT1] and combustion turbine 4 [CT4]) remain under the ownership of Washington County Power, LLC. Oglethorpe has since renamed its portion of the plant, the Facility, consisting of just the two CTs under its ownership, to the Washington County Energy Facility. The remaining portion of the plant continues to be referred to as Washington County Power, LLC. Together, the entire power plant comprises a single site (the “Site”)

with all four CTs within the same fence line. Oglethorpe and Washington County Power, LLC are under an operation and maintenance agreement with a third-party operator, Cogentrix, to operate the entire Site. The Site, which spans approximately 31 acres, includes one parcel of land (Washington County Parcel Number 019006) estimated at approximately 407.72 acres. An electrical switchyard, located northwest of the Site, and an on-site natural gas regulator station, located south of the Site, are owned and operated by Georgia Transmission Company (GTC) and Kinder Morgan, respectively. Kinder Morgan's natural gas transmission line transects the northern corner of the Site and Tiger Creek crosses through the northwestern and southern portions of the Site property.

Oglethorpe intends to finance this Project under the RUS Electric Loan Program (the "Program"). As a result, the Project represents a federal action that must be reviewed under the National Environmental Policy Act (NEPA) of 1969. The responsible agency will be the RUS. This EA has been prepared in compliance with RUS's Policies and Procedures, 7 Code of Federal Regulations (CFR) Part 1970 and the Council on Environmental Quality (CEQ) Regulations for implementation of NEPA 40 CFR Parts 1500-1508. As part of its broad environmental review process, RUS must also take into account the effect of the Project on historic properties in accordance with the National Historic Preservation Act (NHPA) 54 U.S.C. 306108 (Section 106) and its implementing regulation, "Protection of Historic Properties" (36 CFR Part 800). Pursuant to 36 CFR § 800.2(d)(3), RUS is using its procedures for public involvement under NEPA to meet its responsibilities to solicit and consider the views of the public during Section 106 review. Accordingly, comments submitted in response to the EA will inform Agency decision making in Section 106 review.

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Washington County Energy Facility, 1177 County Line Road in Sandersville, GA (-82.980331°W 33.092102°N)



- ★ Washington County Energy Facility
- ▭ Property Boundary
- NHD Flowline
- Freshwater Pond

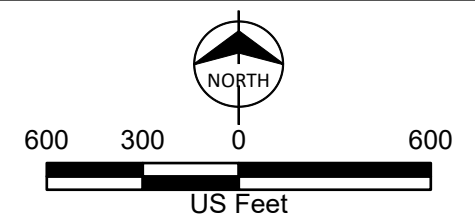


Figure 1-1: Project Location Map
Oglethorpe Power Corporation
Washington County Facility, Dual Fuel Conversion Project
Oglethorpe Power Corporation
Washington County, GA

1.1 Project Description

Oglethorpe owns Units 2 and 3 at the Facility. The proposed Project would include converting these two existing simple-cycle natural gas CTs into dual fuel capable CTs and upgrading related software.

Turbines with dual fuel capabilities increase the resiliency and reliability of the Facility's electrical output by allowing for a back-up fuel source during times of heavy loads when natural gas supply is curtailed or cut off. Oglethorpe proposes to install demineralized (DEMIN) water storage tanks and No. 2 diesel fuel oil tank systems into the two existing CTs it currently owns and operates. The DEMIN water storage tanks will be filled from groundwater stored in the raw water tank, processed through potable water treatment trailers, and will supply a water-injection system during fuel oil combustion. The presence of water during the combustion process will lower the temperature of the reaction, reducing nitrogen oxides (NO_x) emissions.

Oglethorpe's air permit allows for burning up to 3,000 hours' worth of natural gas and 500 hours' worth of diesel fuel, per year, per unit. Oglethorpe proposes to utilize on-site fuel and DEMIN water storage to support full load operation of both CTs for approximately 70 hours. These improvements increase power reliability for Oglethorpe's 38 EMC members. While the purpose of this Project is not to expand overall generating capacity, the annual generation of the Washington County Energy Facility may subsequently increase as a result of the additional fuel oil capacity as it will extend the run-time capacity of the units during periods of natural gas curtailment or limited gas supply.

This Project will result in increases in the maximum hourly rate of air emissions and expected annual air emissions. For the purposes of the proposed Project, the Facility holds an Air Quality – Part 70 Operating Permit Amendment for the construction and operation of the Project. The permit specifies that the low NO_x combustors and water-injection systems will operate as Best Available Control Technology (BACT).

The Project will also increase the Site's water usage; however, the increases are expected to stay within the parameters of the current groundwater withdrawal and National Pollutant Discharge Elimination System (NPDES) discharge permits for the Site, and updates to these permits are not anticipated. Both water permits are held by Washington County Power, LLC and apply to the entire Site. Additional information regarding the Facility's groundwater withdrawal and NPDES discharge permits is included in section 3.9.3.1 of this EA.

Implementation of the Project is not expected to increase the noise from the Facility above historical levels, nor will it require changes in the gas supply infrastructure for the Facility. The Project will involve

new infrastructure and mechanical and software upgrades to existing equipment, but no new ground-disturbing activities will occur outside of the existing Site footprint. As a result, the Project will result in negligible or no impacts on biological resources, soils and geological resources, prime farmland, floodplains, land use, noise, cultural resources, aesthetics, socioeconomic resources, hazardous materials, surface waters, or wetlands.

1.2 Purpose and Need

1.2.1 Oglethorpe Power Purpose and Need

Oglethorpe is responsible for providing reliable, efficient, and low-cost power to the 38 EMC members of the not-for-profit generation cooperative who provides power to over 4 million Georgians. Oglethorpe continues to evaluate methods for increasing the reliability and efficiency of its power generation while continuing to lower costs to its members.

Over the past few years, the southeast has experienced unexpected cold snaps, resulting in limited or cutoff supplies of natural gas due to high demand. This recent pattern of cold weather and curtailed natural gas supplies prompted the need for this Project, specifically the installation of a back-up system. The proposed Project would increase the resiliency and reliability of the Facility's electrical output by allowing the existing units to continue operation from a back-up fuel source during times of heavy demand when natural gas supply is curtailed or cut off rather than starting other less efficient units, purchasing power from others, or constructing or obtaining new, redundant generation.

The dual fuel system would meet the need of providing more efficient and reliable power to its members and the Georgians they serve.

1.2.2 RUS Potential Funding Action

Utilities can seek financial assistance for capital projects that meet the U.S. Department of Agriculture (USDA) Rural Development objectives. USDA Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and RUS. The agencies have in excess of 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and/or grants in order to accomplish program objectives. The RE Act of 1936 allows for the Secretary of Agriculture, through RUS, to approve loans, loan guarantees, grants, and other project financing to electric utilities and projects that serve rural communities. Oglethorpe is seeking financial

assistance for the Project from this Program to increase reliability to its 38 EMC members. RUS's review of financial assistance applications includes information ranging from purpose and need of the Project, engineering feasibility of the Project, cost, alternatives considered and environmental impacts. RUS uses these reviews and analyses to determine whether to provide financial assistance to a project, which is a federal action for RUS under NEPA. RUS's financial decision for the Project is based on funds available in the agency's budget. Therefore, publication of the EA and execution of environmental findings does not constitute RUS's final approval of funds for the Project but is required as part of the decision-making process to provide financial assistance.

2.0 ALTERNATIVES EVALUATED

In accordance with NEPA and RUS policies, Oglethorpe considered alternatives to the Project to determine if an alternative would be environmentally preferable, reasonable, and/or technically and economically feasible to the proposed action.

2.1 Proposed Action

The proposed action would involve converting the two simple-cycle CTs owned by Oglethorpe, units CT2 and CT3, into dual fuel CTs to give them the ability to operate on fuel oil in the event of a natural gas fuel supply disruption. This upgrade involves the installation of a DEMIN water tank, a fuel oil tank, the dual fuel modules for each unit and associated conversion equipment, and supporting mechanical and software upgrades. **Table 2.1-1** lists the proposed infrastructure needed for the Project.

Table 2.1-1: Proposed Construction Included in the Project

Proposed Constructions (2-unit conversion)	Quantity
Liquid fuel atomizing package	2
Water injection package	2
Interconnecting piping and electrical + controls integration	2
2.8MM gallon Fuel Oil Tank (or two single 1.4MM gallon tanks) & Containment	1 or 2
2.8MM gallon DEMIN Water Tank	1
1- 4160V PDC building and 3- 480V PDC buildings and other electrical infrastructure (MCC's, breakers, starters, etc.) to support new equipment	1
Fuel unloading bays	1 bay, 2 pumps
Fuel forwarding equipment	3 pumps
DEMIN water trailer bays	3
DEMIN water supply pumps	3 pumps
Raw water forwarding pump	2 pumps
CO ₂ Fire Protection units	2
Fire water monitors (will change based on one vs two FO tank configuration)	4 or 8

Carbon dioxide (CO₂); Demineralized (DEMIN); Motor control center (MCC); Million (MM); Megavolt (MV); Power distribution center (PDC); Thousand (K); Volts (V)

The dual fuel system will be sized to provide on-site fuel oil and DEMIN water storage to support full load operation of both CT2 and CT3 for up to seven 10-hour days at full load. The Facility is permitted by the Georgia Environmental Protection Division (GEPD) to burn up to 3,000 hours' worth of natural gas and 500 hours' worth of No. 2 diesel fuel oil per year, per unit (**Appendix A**). The purpose of the Project

is not to expand overall short-term generating capacity; however, the annual generation of the Facility may subsequently increase as a result of the additional fuel oil capacity as it will extend the run-time capacity during periods of natural gas curtailment or limited gas supply. Oglethorpe has consulted with GTC regarding the capacity of the existing grid infrastructure to handle the Project, and upgrades to the existing grid infrastructure, resulting from this proposed Project, are not anticipated.

The proposed dual fuel system infrastructure would be installed during one of the routine major outages at the Facility that occur after a certain number of operating hours, approximately every 6 years. Grading and other construction activities that will not affect the Facility's ability to function would begin in the Spring of 2024. Software and mechanical upgrades would take place during the routine outage scheduled during the Fall of 2025. During a major outage, the Facility is shut down for a longer period and a larger number of contractors and personnel are brought to the Facility to perform maintenance and upgrades, if applicable. The contractors performing the major outage would also perform the software and mechanical upgrades for the Project, and a permanent increase in personnel at the Facility is not proposed. Multiple one-time shipments of mechanical equipment will be required to install these upgrades, but no significant increases in traffic or equipment is proposed.

2.2 Other Alternatives Evaluated

Oglethorpe considered the following Project alternatives: construction of a new facility, use of an existing natural gas-fired facility or coal-fired facility, use of firm gas, and construction of a renewable energy source. Oglethorpe determined the environmental, financial, and/or scheduling costs of each of these alternatives to be too significant to be considered feasible alternatives to the proposed Project.

2.2.1 Construction of a New Facility

Oglethorpe evaluated the option of constructing a new facility for this Project; however, developing a new energy facility would require construction of a large amount of infrastructure (transmission, water intake, etc.) at a new location, infrastructure which currently exists at Washington County Energy Facility and would increase the Project's financial, environmental, and scheduling costs. Furthermore, the construction of a new simple cycle gas plant would not fit the purpose of the Project, which is to provide support and meet demands during times of gas curtailment or supply interruption. The new facility would similarly need to have dual fuel firing capabilities to meet the Project's intended goals of improved reliability.

2.2.2 Use of an Existing Natural gas-fired Facility

Oglethorpe evaluated the option of using an existing natural gas-fired facility, either owned by Oglethorpe or another power provider, to increase generating capacity during gas supply curtailment or

interruption. This alternative was not considered further as the other facilities in the Oglethorpe fleet are either already at capacity for baseload units or may also not have gas supply available for peaking units during times fuel oil firing would be employed. When events occur adversely impacting grid reliability, power plants owned by other companies are similarly affected and do not have the capacity available to generate additional electricity to supplement Oglethorpe's demand.

2.2.3 Use of an Existing Coal-fired Facility

Oglethorpe evaluated the option of increasing utilization at an existing coal-fired facility, rather than adding fuel oil firing capabilities for existing natural gas-fired turbines, to meet system demand during periods of heavy load when natural gas supply is curtailed or cut off. Coal plants have the benefit during these periods of having a fuel supply readily available on-site; however, coal boilers have longer startup times than simple cycle CTs, so the boilers cannot meet the grid demand as quickly as CTs. Further, Oglethorpe does not currently have enough spare capacity from coal-firing units in its portfolio to fully meet the heavy load demands of the grid when gas supply is limited, so additional coal units would need to be acquired or constructed to meet the intended purpose of the project. Lastly, according to the United States Energy Information Administration (USEIA), coal consumption produces 1.25 times more pounds of carbon dioxide (CO₂) per million British thermal units (MMBtu) than distillate fuel oil consumption (2021). For these reasons, this alternative was eliminated from further consideration as an alternative to the Project.

2.2.4 Use of Firm Gas

A firm gas contract would allow for established high priority fuel when requested by the Facility, and supply could not be curtailed except under unforeseeable circumstances. Firm gas contracts are legally binding agreements between natural gas producers, pipeline operators, and energy facilities, that ensure the transfer of natural gas from the producer to the facility upon the facilities' request (USEIA, 2018). Oglethorpe uses firm gas contracts for its combined cycle power plants that meet baseload demand for the grid year-round. However, the Facility does not have a firm gas contract in place with its gas supplier, as the Facility's primary operations occur during periods of high demand in the summer months. As such, the Facility is not guaranteed to have an available supply of natural gas fuel in the winter months. Oglethorpe has estimated the cost to establish a firm gas contract for the Facility to be approximately \$16,745,000 annually over current gas costs. Further, the gas supply could still be curtailed during extraordinary circumstances, such as during a major winter storm, in which case the Facility would continue to not have a reliable source of fuel available on-site as compared with distillate fuel oil firing capabilities. As such, Oglethorpe has eliminated this alternative from consideration for the Project due to

the significant annual costs and the diminished benefits in system reliability in comparison to the proposed Project.

2.2.5 Use of Renewable Energy

Oglethorpe evaluated multiple renewable energy alternatives for this Project; however, the construction of a solar and/or wind farm would not improve system resiliency and would introduce increased intermittency into the system. A solar facility would not provide sufficient support during winter peaking hours, which typically occur between 6:00 am and 9:00 am. Furthermore, Georgia does not have viable wind currents to allow for the successful operation of wind turbines to offset the resiliency need.

For an intermittent resource to be feasible for this purpose, a battery energy storage system (BESS) would need to be coupled to the plant to reduce variability and improve resiliency. At current market pricing, the inclusion of BESS with equivalent energy to the preferred alternative would add approximately \$2,500,000,000 in capital costs. These projected costs are financially prohibitive. BESS is being pursued by Oglethorpe as part of an overall portfolio that also includes other resilient alternatives, such as dual fuel. Installing solar panels or wind turbines, and their associated battery storage facilities, would require a substantial amount of land clearing to house enough infrastructure to support demand during times of peak load. Additionally, the structures, parcels and clearing of land, and potential mitigation involved in constructing a renewable energy farm would significantly increase the Project's financial and temporal costs to Oglethorpe.

2.3 No Action Alternative

Oglethorpe evaluated a no action alternative and compared it to the proposed action using three criteria:

1. Would the no action alternative meet the objectives of the proposed action?
2. Would the no action alternative offer a significant environmental advantage over the proposed action?
3. Would the no action alternative be technically and economically feasible, reasonable, and practical?

Under the no action alternative, the Project would not be implemented, and the Facility would continue to operate in its current state. Therefore, the Facility would not maintain reliability during times of heavy loads and when natural gas supply is curtailed or cut off. This would result in potentially inadequate power supply to the grid and disruptions in meeting customer needs during peak demand. For these reasons, the no action alternative is not preferable to and does not provide a significant environmental advantage over the proposed action, and therefore, it is not recommended.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The Project would occur entirely within the boundaries of the current Site. The Project would result in negligible impacts to biological resources, soils and geological resources, cultural resources, socioeconomic resources, environmental justice communities, visual resources, hazardous materials, wetlands, infrastructure for water usage or discharge, noise emissions above historical levels, or gas supply infrastructure. The following discusses a variety of natural and social resources and the potential Project-related consequences to each.

3.1 Aesthetics

3.1.1 Affected Environment

As shown in the aerial imagery on Figure 1-1, the Project would occur within the existing gravel footprint of the Site. The surrounding land use is primarily undeveloped and residential, with Tiger Creek and a wetland present in the southern portion of the property, located outside of the Site's fence line.

3.1.2 Environmental Consequences

The Project would include construction of new infrastructure, including large fuel and water storage tanks within the existing Site footprint. However, the large infrastructure would be consistent in appearance with the existing Site's structures, and visual impacts from the new infrastructure would be minimal and negligible.

3.1.3 Mitigation

Since no significant impact on aesthetics would occur as a result of the Project, no adverse environmental consequences would occur, and no mitigation is proposed.

3.2 Air Quality

Ambient air quality is protected by federal and state regulations. The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) as well as the Prevention of Significant Deterioration (PSD) program to protect human health and welfare. Primary standards protect human health, including the health of defined sensitive populations, such as asthmatics, children, and the elderly. NAAQS have been developed for sulfur dioxide (SO₂), particulate matter (PM) with a diameter of 10 microns or less (PM₁₀), PM with a diameter of 2.5 microns or less (PM_{2.5}), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone, lead, and sulfuric acid (H₂SO₄) mist and include levels for short-term (acute) and long-term (chronic) exposures as applicable. The PSD program addresses

emissions from proposed projects for all pollutants that have NAAQS as well as for greenhouse gases (GHGs).

Ozone is not a pollutant emitted directly into the air. It is formed from a chemical reaction involving NO_x and volatile organic compounds (VOC) in the presence of sunlight. Consequently, emissions of NO_x and VOCs are regulated by the EPA as “precursors” to the formation of ground-level ozone. VOC means any compound of carbon (excluding CO, CO₂, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) which participates in atmospheric photochemical reactions (40 CFR 51.100s). The current NAAQS are listed on the EPA’s website (EPA, 2022).

3.2.1 Affected Environment

New Source Review (NSR) is a pre-construction permitting program designed to protect air quality when air pollutant emissions are increased either through the modification of existing sources or through the construction of a new source of air pollution. In areas with good air quality, NSR ensures that the new emissions do not significantly degrade the air quality. This is achieved through the implementation of the PSD permitting program or state minor permit programs. In areas with poor air quality, Nonattainment NSR ensures that the new emissions do not inhibit progress toward cleaner air. In addition, NSR ensures that any new or modified large industrial source uses BACT to reduce its air emissions. Air permitting of stationary sources has been delegated to the State of Georgia. The Site is currently categorized as a synthetic minor source under the PSD permitting program, as it has federally enforceable emissions limits included in the permit to maintain Site-wide potential emissions of regulated pollutants below the PSD major source threshold of 250 tons per year (tpy). To facilitate fuel oil combustion, removal of the federally enforceable PSD synthetic minor permit conditions was required. Estimates of the Site-wide potential emissions following the proposed Project showed the Site will become classified as a PSD major source when the Project is implemented, as it will have potential emissions of multiple regulated pollutants exceeding the 250 tpy major source threshold. Therefore, an NSR-emissions increase analysis is required to determine whether PSD permitting applies to the Project. Nonattainment NSR permitting is not potentially applicable for the Project, as the Facility is located in Washington County, which has been designated by EPA as “attainment” or “unclassifiable” for all NAAQS (40 CFR 81.311).

The Project would be located in an area containing a mix of undeveloped lands, residential developments, commercial and industrial activities and facilities. Many of these uses contribute emissions on the surrounding areas. Sources would include wood burning stoves and fireplaces, petroleum-fueled systems for heating and hot water, automobile and other vehicle emissions, and other activities that rely on combustion of fossil fuels. These activities generate a variety of air pollutants, many of which are

identified, tracked, and regulated by the EPA under the Clean Air Act. In addition, several components of these emissions are identified as GHGs.

GHGs have been identified as contributing to the earth's temperature. Called the "greenhouse" effect, this is a naturally occurring phenomenon in which various gases in the earth's atmosphere (classified as GHGs) play a role in determining the earth's temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. Among the prominent GHGs contributing to the greenhouse effect are CO₂, methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. Primary GHGs are discussed, as follows:

3.2.1.1 CO₂

CO₂ is a colorless, odorless gas. It is emitted both naturally and through human activities. CO₂ is naturally present in the atmosphere as part of the earth's carbon cycle (the natural circulation of carbon among the atmosphere, oceans, soil, plants, and animals). While CO₂ emissions come from a variety of natural sources, an increase in CO₂ emissions has been recorded in the atmosphere since the industrial revolution. CO₂ is the primary GHG emitted through human activities, primarily from the combustion of fossil fuels such as coal, oil, and gas. The transportation and electricity sectors are the largest CO₂ emitters in the United States (EPA, 2021) and are the biggest CO₂ emitters in the Project area.

3.2.1.2 CH₄

CH₄ is a colorless, odorless gas that is not flammable under most circumstances. CH₄ is the major component of natural gas, about 87 percent by volume. In 2019, CH₄ accounted for about 10 percent of all United States GHGs from human activities (EPA, 2021). Human activities emitting CH₄ include leaks from natural gas systems and the raising of livestock. CH₄ is also emitted by natural sources such as decomposition of vegetation, particularly in anerobic environments such as wetlands. In addition, natural processes in soil and chemical reactions in the atmosphere help remove CH₄ from the atmosphere. CH₄'s lifetime in the atmosphere is much shorter than CO₂, but CH₄ is more efficient at trapping radiation than CO₂. Pound for pound, the comparative impact of CH₄ is more than 25 times greater than CO₂ over a 100-year period (EPA, 2021). CH₄ is the primary GHG emitted during the extraction and production of natural gas and is a significant driver of current warming (Lackner et al., 2021). The largest sources of CH₄ in the Project area are the transportation, electricity, and natural gas sectors.

Natural gas use is prevalent throughout the study area. Newer technology standards and mandated leak detection and repair programs (LDAR) are being implemented throughout the country to reduce the emissions of CH₄ from oil and gas production. Low or negative cost CH₄ abatement is possible in the oil and gas subsector where captured CH₄ adds to revenue instead of being released to the atmosphere (U.N., 2021). On November 15, 2021, the EPA proposed standards to reduce CH₄ and other harmful pollution from the oil and gas industry. This proposed rule would expand and strengthen emissions reductions that are currently on the books for new, modified, and reconstructed oil and natural gas resources, and would require states to reduce CH₄ emissions existing sources nationwide for the first time. If this proposed rule is put in to place, the oil and gas industry would be required to lessen CH₄ emissions and therefore reduce its contribution to climate change. These expected reductions in GHGs from the oil and gas industry would in turn reduce the carbon intensity of natural gas as an energy source.

3.2.1.3 N₂O

N₂O is a clear, colorless gas with a slightly sweet odor. In 2017, N₂O accounted for about 7 percent of all United States GHGs emissions from human activities (EPA, 2021). Human activities such as agriculture, fuel combustion, wastewater management, and industrial processes are increasing the amount of N₂O in the atmosphere and are the largest sources of N₂O in the Project area. N₂O is also naturally present in the atmosphere as part of the earth's nitrogen cycle and has a variety of natural sources. N₂O molecules stay in the atmosphere for an average of 114 years before being removed by a sink or destroyed through chemical reactions. The impact of 1 pound of N₂O on warming the atmosphere is almost 300 times that of 1 pound of CO₂ (EPA, 2021).

3.2.1.4 Fluorinated Gases

Unlike many other GHGs, fluorinated gases have no natural sources and only come from human-related activities. They are emitted through their use as substitutes for ozone-depleting substances (e.g., as refrigerants) and through a variety of industrial processes such as aluminum and semiconductor manufacturing. Many fluorinated gases have very high global warming potentials (GWPs) relative to other GHGs, so small atmospheric concentrations can have disproportionately large effects on global temperatures (EPA, 2021). They can also have long atmospheric lifetimes – in some cases, lasting thousands of years. Like other long-lived GHGs, most fluorinated gases are well-mixed in the atmosphere, spreading around the world after they are emitted. Many fluorinated gases are removed from the atmosphere only when they are destroyed by sunlight in the far upper atmosphere. In general, fluorinated gases are the most potent and longest lasting type of GHGs emitted by human activities. There are four main categories of fluorinated gases – hydrofluorocarbons (HFCs), perfluorochemicals (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). The major emissions source of HFC compounds

is their use as refrigerants – for example, in air conditioning systems in both vehicles and buildings. These chemicals were developed as a replacement for chlorofluorocarbons because they do not deplete the stratospheric ozone layer. PFCs are produced as a byproduct of aluminum production and are used in the manufacturing of semiconductors. PFCs generally have long atmospheric lifetimes and GWPs near 10,000. SF₆ is used in magnesium processing and semiconductor manufacturing, as well as a tracer gas for leak detection. SF₆ is also used as an insulating gas in electrical transmission equipment, including circuit breakers. The GWP of SF₆ is 23,500, making it the most potent GHG that the Intergovernmental Panel on Climate Change (IPCC) has evaluated (EPA, 2021).

3.2.1.5 Global Warming Potentials

GHGs vary widely in the power of their climatic effects; therefore, climate scientists have established a unit to quantify the GWP of a compound. The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO₂. The GWP of CO₂ is set to equal 1. CH₄ and N₂O are approximately 25 and 298 times more powerful than CO₂, respectively, in their ability to trap heat in the atmosphere; thus, they have GWPs of 25 and 298, respectively. Carbon dioxide equivalent (CO_{2e}) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWPs. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_{2e}. The atmospheric lifetime and GWP of selected GHGs are summarized in **Table 3.2-1**.

Table 3.2-1: Global Warming Potentials and Atmospheric Lifetimes

Greenhouse Gas	Atmospheric Lifetime (years) ¹	Global Warming Potential (100-year time horizon) ²
Carbon dioxide (CO ₂)	50-200	1
Methane (CH ₄)	12	25
Nitrous Oxide (N ₂ O)	114	298

Sources:

- 1) IPCC, 2007
- 2) 40 CFR Part 98 Subpart A

3.2.1.6 Potential Effects of Greenhouse Gases

An increase in GHGs released to the atmosphere has been linked to warming of the earth on a global scale. Earth's average temperature has risen by 1.5 °F over the past century and is projected to rise another 0.5 to 8.6 °F over the next hundred years. Rising global temperatures have been accompanied by changes in weather and climate. Many places have seen changes in rainfall, resulting in more droughts, floods/intense rain as well as heat waves. Oceans are warming and becoming more acidic (EPA, 2021). Ice caps and glaciers are melting, causing sea levels to rise. Other potential effects include, but are not

limited to, the spread of diseases out of their normal range, habitat loss, negative impacts to agriculture production, increased air pollution episodes, and impacts to the economy (EPA, 2021).

3.2.2 Environmental Consequences

The proposed dual fuel conversion to the simple-cycle CTs requires and is already authorized by a PSD major source construction air permit. Washington County Power, LLC, then the owner of all four of the CTs at the Site, prepared and submitted to GEPD in February 2019 a PSD permit application to perform dual fuel conversions for all four of the Site's existing CTs. The PSD permit application contained the following analyses/assessments regarding emissions of regulated pollutants associated with the construction and operation of the Project:

- Evaluation of ambient air quality in the area for each regulated pollutant for which the Project will result in a significant net emissions increase
- Demonstration that emission increases resulting from the Project will not cause or contribute to an increase in ambient concentrations of pollutants exceeding the remaining available PSD increment and the NAAQS
- Assessment of any adverse impacts on soils, vegetation, visibility, and growth in the area
- A BACT analysis for each regulated pollutant for which the Project will result in a significant net emissions increase

The Project includes adding the option to burn fuel oil in the Facility's two simple-cycle CTs as a back-up fuel to natural gas along with installation of some fuel oil storage capacity. The GEPD issued an operating permit amendment on November 17, 2021, for the construction and operation of dual fuel conversions for all four of the existing CTs at the Site (**Appendix A**). Oglethorpe will comply with the issued GEPD air permit that includes emission limitations, monitoring requirements, and other terms and conditions for its CTs.

A variety of strategies to control emissions from Project equipment would be implemented. These are discussed below for the simple-cycle CTs. The CTs would be controlled as follows:

- NO_x – dry low-NO_x burners (natural gas), water injection (fuel oil), and good combustion practices
- CO – Good combustion practices
- PM/ PM₁₀/ PM_{2.5} – Good combustion practices and low sulfur fuels
- VOC – Good combustion practices

- GHGs (CO_{2e}) – Efficient turbine operation and good combustion practices
- Opacity – Good combustion practices and low sulfur fuels

The Project would result in increases in projected actual annual emissions from the dual fuel conversion on the simple-cycle CTs. Annual emission increases from the Project were evaluated during the PSD application submittal using the actual-to-projected actual applicability test defined in the federal PSD regulations. Specifically, emissions increases were calculated as the difference between projected actual and baseline actual emissions. The federal PSD regulations define “projected actual emissions” as the maximum annual rate at which an existing unit is projected to emit a regulated NSR pollutant in any of the 10 years following the date the unit resumes regular operation after the Project (40 CFR 52.21(b)(41)(i)). As such, the emissions increase estimates for the Project are conservatively high, because they are based on the future *maximum* projection of actual emissions, not the future *expected* or most likely actual emissions. For the PSD application, baseline actual emissions from the four simple-cycle CTs were calculated based on past actual emissions (i.e., from approximately 370 hours annually of operation per unit while firing natural gas only). The projected actual emissions were based on future maximum emissions (i.e., from 3,000 hours of operation annually per unit while firing natural gas and 500 hours of operation annually while firing fuel oil).

The PSD analysis calculated increases for each pollutant regulated under the PSD program, and found that emissions increases for PM, PM₁₀, PM_{2.5}, NO_x, CO, and VOC exceed their respective PSD Significant Emission Rates (SER). Since the emissions increase for these pollutants triggered PSD review, PSD review was also required for CO_{2e} because the calculated CO_{2e} emission increase exceed the applicable PSD SER. The GEPD issued a PSD permit for the construction and operation of the dual fuel conversions for all four existing CTs at the Site on November 17, 2021. The PSD application is included in **Appendix A**.

A comparison of the emissions increases from the dual fuel conversions for all four existing CTs at the Site for each pollutant to its SER is provided in **Table 3.2-2**, below.

Table 3.2-2: Emission Estimates Pre- and Post-Dual Fuel Conversion Implementation

Pollutant	Emissions Increase from Modified Units (tpy) ^{1,2}	New Unit Potential Emissions (tpy) ³	Associated Units Emissions Increases (tpy)	Project Emissions Increase (tpy) ⁴	PSD SER (tpy)	PSD Permitting Required?
Filterable PM	97.02	--	0.1	97.11	25	Yes
Total PM ₁₀	154.38	--	0.38	154.76	15	Yes
Total PM _{2.5}	154.38	--	0.38	154.76	10	Yes
SO ₂	8.79	--	0.07	8.86	40	No

Pollutant	Emissions Increase from Modified Units (tpy) ^{1,2}	New Unit Potential Emissions (tpy) ³	Associated Units Emissions Increases (tpy)	Project Emissions Increase (tpy) ⁴	PSD SER (tpy)	PSD Permitting Required?
NO _x	560.94	--	5.04	565.97	40	Yes
VOC	94.27	0.66	0.28	95.21	40	Yes
CO	259.98	--	4.23	264.21	100	Yes
CO _{2e}	1,396,914	--	6,017	1,402,932	75,000	Yes
Lead	0.03	--	2.52E-05	0.03	0.6	No
H ₂ SO ₄ mist	3.75	--	0.02	3.77	7	No

- 1) The four existing CTs at the Site are modified units with respect to this PSD assessment.
- 2) Emissions Increase from Modified Units (tpy) = Modified Unit Projected Actual Emissions (tpy) – Modified Unit Baseline Actual Emissions (tpy). Baseline Actual Emissions were calculated based on past actual emissions (i.e., from 370 hours of operation per unit firing natural gas only). The Projected Actual Emissions were based on future maximum emissions (i.e., from 3,000 hours of operation per unit firing natural gas and 500 hours of operation firing fuel oil).
- 3) The fuel oil storage tank is a new unit with respect to this PSD assessment.
- 4) Project Emissions Increases (tpy) = Emissions Increase from Modified Units (tpy) + New Unit Potential Emissions (tpy) + Associated Units Emissions Increases (tpy)

Source: PSD Permit Application Volume I (**Appendix A**)

The NAAQS are set by the EPA to protect human health and public welfare. The PSD increment constitutes the maximum allowable ambient air quality concentration increase that may occur for a given pollutant above a baseline concentration. To determine if the dual fuel conversions for the four existing CTs at the Site would contribute to a NAAQS or PSD Class II increment exceedance, the emissions increase was modeled along with the appropriate existing sources in the area. In addition, a contribution analysis showing the impact of the Project compared to the impact of neighboring sources was performed. The modeling analysis and results are presented in the PSD application and are attached in **Appendix A**. Based on the conservative modeling results for modifying all four of the existing CTs at the Site, it has been predicted that the Project would have minimal effects on the NAAQS and PSD Class I and Class II Increment (**Appendix A**).

A variety of emissions resulting from Project operation are considered GHGs. These may include CO₂, CH₄, N₂O, ozone, hydrocarbons, and chlorofluorocarbons. GHG emissions from the Project equipment are due to CO₂, CH₄, and N₂O emissions. These calculated GHG emissions were ratioed with their appropriate GWP shown in **Table 3.2-1** and summed to obtain the overall Project CO_{2e} emissions. Consistent with GEPD and EPA guidance, air dispersion modeling of CO_{2e} was not conducted since there are no NAAQS or PSD Increment standards for this pollutant. A BACT analysis was performed for GHG. BACT is an emission limitation based on the maximum degree of reduction which the GEPD determines is achievable, on a case-by-case basis, considering energy, environmental, and economic impacts and other costs. A GHG BACT analysis was performed for all modified equipment proposed for the Project. A summary of the BACT for simple-cycle CTs for CO₂ is discussed in Section 3.2.1. The PSD

application and operating permit stipulate a BACT emission limit of 387,497 tpy of CO_{2e} per rolling 12-months for each simple-cycle CT.

Additionally, the 2021 PSD application assessed the feasibility of incorporating various GHG mitigation control strategies. The following GHG mitigation strategies were evaluated: energy efficiency measures, carbon capture, and carbon sequestration. Table 3-5 provides an overview of the findings in the PSD. The full PSD application, in **Appendix A**, contains a full discussion of the technologies considered.

The control technologies determined technically feasible include monitoring and control of excess air, and efficient turbine design. The use of aggressive energy-efficient design to reduce CO₂ emissions is inherent in the design of the proposed CT under consideration and is considered the baseline condition. The design options will allow the simple-cycle CTs to not exceed the CO_{2e} permit limit.

While the NAAQS address effects of criteria pollutant emissions on human health and the environment, there is currently no standard methodology to determine how a project's relatively small incremental contribution to GHGs will translate into physical effects on the global environment. To address effects of carbon emissions, the U.S. Interagency Working Group (IWG) developed a social cost of greenhouse gas emissions. The IWG was established pursuant to Executive Order 13990 and was tasked to establish interim estimates of the social cost of emitting one ton of GHG. The interim estimates from the IWG published in the *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide: Interim Estimates under Executive Order 13990* are used here to quantify the cost to society of a given amount of GHG emissions in terms of 2020 dollars.

The interim estimates published in the technical support document rely on harmonized inputs to an ensemble of peer reviewed models for the socioeconomic emissions scenarios and equilibrium climate sensitivity distribution used for similar U.S. Government social cost of GHGs (USG SC-GHG) estimates since 2013. The USG SC-GHG published with the Technical Support Document as well as the models and approach were open to public comment and so represent a consensus-based approach to quantifying the effects of carbon emissions on society. The analysis presented here utilized the unrounded values developed by the IWG and provided on the Office of Management and Budget (OMB) website concerning the social cost of GHGs. The values used to calculate social carbon cost for 2023 to 2050, which is the expected operating time of the Project for which the interim estimates are available, are presented in **Table 3.2-3**.

Table 3.2-3: Annual Social Cost of CO₂ for 2023 – 2050 (in 2020 dollars per metric ton of CO₂)

Year	Discount Percentage		
	5.0%	3.0%	2.5%
2023	15.942	54.287	80.339
2024	16.431	55.355	81.645
2025	16.919	56.423	82.951
2026	17.408	57.491	84.257
2027	17.897	58.56	85.563
2028	18.386	59.628	86.869
2029	18.874	60.696	88.175
2030	19.363	61.764	89.481
2031	19.947	62.908	90.844
2032	20.53	64.052	92.207
2033	21.114	65.196	93.57
2034	21.697	66.34	94.934
2035	22.281	67.484	96.297
2036	22.864	68.628	97.66
2037	23.448	69.772	99.023
2038	24.031	70.916	100.387
2039	24.615	72.06	101.75
2040	25.199	73.204	103.113
2041	25.845	74.35	104.449
2042	26.491	75.496	105.785
2043	27.137	76.642	107.12
2044	27.783	77.788	108.456
2045	28.429	78.933	109.792
2046	29.076	80.079	111.128
2047	29.722	81.225	112.464
2048	30.368	82.371	113.799
2049	31.014	83.516	115.135
2050	31.66	84.662	116.471

For the analysis of the Project's social cost of carbon, the emissions increase in CO_{2e} from the proposed dual fuel conversion for Oglethorpe's two simple-cycle CTs was utilized along with the interim estimates of the cost of CO₂. This approach was conservative, as CO_{2e} includes CH₄ emissions and N₂O emissions by multiplying these emissions by their GWP factors. Also, the projected actual CO_{2e} emissions are used in the Project emission increase calculations for each year. The projected actual CO_{2e} emissions should represent an upper bound on CO_{2e} emissions and, in a given year, emissions would be expected to be lower than what was calculated for Project actuals. The emissions increase analysis included in the PSD permit application estimated projected annual increases in CO_{2e} emissions of 387, 496 tpy from each of Oglethorpe's two simple-cycle CTs resulting from the Project. **Table 3.2-4** below shows the calculated total social cost for 2023 – 2050 of the Project for the 5%, 3%, and 2.5% discount rates and the projected annual increase in CO_{2e} emissions for the two simple-cycle CTs.

Table 3.2-4: Total Social Cost of Carbon from Project for 2023-2050 in 2020 Dollars

Discount Rate	5%	3%	2.5%
2023-2050 CO ₂ Social Cost	457 million	1.35 billion	1.92 billion

The different discount rates provided with the IWG interim estimates represent variance in the expected effects of an action. If the emission of GHGs is considered to be less significant than present effects, then a higher discounted rate should be used. However, if they are closer to equivalent to present effects, then the lower rate should be used.

3.2.3 Mitigation

The Facility will utilize air emission control measures, including dry low NO_x combustors on the turbines during periods of natural gas combustion, water injection for NO_x emissions control during periods of fuel oil firing, and the use of low-sulfur fuel (natural gas ultra-low sulfur diesel), in accordance with the Facility's existing air permits.

The PSD permit application (**Appendix A**) contains the following analyses/assessments regarding emissions of regulated pollutants associated with the construction and operation of the Project:

- Evaluation of ambient air quality in the area for each regulated pollutant for which the Project will result in a significant net emissions increase
- Demonstration that emissions increases resulting from the Project will not cause or contribute to an increase in ambient concentrations of pollutants exceeding the remaining available PSD increment and the NAAQS
- Assessment of any adverse impacts on soils, vegetation, visibility, and growth in the area
- A BACT analysis for each regulated pollutant for which the Project will result in a significant net emissions increase

Washington County Power, LLC submitted the PSD permit application for the dual fuel conversion for all four existing CTs at the Site to GEPD, and GEPD issued the construction and operating permit on November 17, 2021 (**Appendix A**). Oglethorpe will adhere to the conditions and requirements of the permit for its two CTs during construction and operation of the Project.

3.3 Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) identifies this area as one of minimal flood hazard (Zone X); therefore, no floodplain would be affected by the Project (associated maps/figures available in **Appendix B**). Since no impact on floodplains would occur as a result of the Project, no environmental consequences would occur, and no floodplain mitigation is proposed.

Additionally, since there are no watershed dams or associated structures downstream from the Project site, the Sandersville District Conservationist of the National Resources Conservation Service (NRCS) has concluded that no further action is required with the PL-534 Flood Control Act of 1944 and PL-566 Watershed Protection and Flood Prevention Act.

3.4 Geology, Soils, and Farmland

3.4.1 Affected Environment

The Site is in the Fall Line geologic province, where the Piedmont gives way to the coastal plains. In this area, the hard crystalline rocks of the Piedmont transition to the more readily eroded sedimentary rocks of the Coastal Plain. Weathering of the rocks of the Piedmont generated the clays and sands found in the Fall Line.

Although the Project will occur within the existing fence line of the gravel-covered Site, the soils within this area are comprised of sandy-loam with less than 8% slopes by the USDA's Soil Survey Geographic Database (SSURGO).

The Site is not located within prime farmland. The USDA defines prime farmland as land with physical and chemical attributes that facilitate the production of agricultural crops (USDA, 2015). Land that has been industrialized and/or disturbed cannot be classified as prime farmland. The Sandersville District Conservationist of the NRCS has determined that because the Project would not affect prime farmland, no further action with The Farmland Protection Policy Act (FPPA) is required.

3.4.2 Environmental Consequences

Construction activities associated with the Project would occur within the existing, previously disturbed and gravel footprint of the Site, and there would be no ground-disturbing impacts or new facilities, equipment, or buildings constructed outside the current Site footprint. Since the existing footprint was previously disturbed, graded, and graveled there would be negligible impacts to geology and soils, and no impacts on farmland from the construction of the proposed dual fuel infrastructure.

3.4.3 Mitigation

Although no impacts are anticipated, if any impacts did occur (to geology and soils) as a result of the Project, these impacts would be negligible and no environmental consequences would occur, therefore no mitigation is proposed.

3.5 Historic and Cultural Resources

3.5.1 Affected Environment

The Project would occur within the existing Site footprint. A Cultural Resources survey was conducted by Washington County Power, LLC prior to the Site's construction in 2002.

Burns & McDonnell conducted a NHPA Section 106 review and consulted the appropriate tribal entities regarding the Project's potential to impact historic and cultural resources within the Site's footprint. The State Historic Preservation Office (SHPO) provided a letter concurring with the recommendation of no Historic Properties effected for the Project area.

3.5.2 Environmental Consequences

The Project would occur within the existing, previously disturbed and gravel footprint of the Site, and there would be no ground-disturbing impacts or new facilities, equipment, or buildings constructed outside the current Site footprint. Since the existing footprint was previously disturbed, graded, and graveled there are no anticipated historical and cultural impacts from the construction of the proposed dual fuel infrastructure.

3.5.3 Mitigation

Since no impacts would occur to historic and cultural resources as a result of the Project, no environmental consequences would occur, and no mitigation is proposed.

3.6 Human Health and Safety

3.6.1 Affected Environment

3.6.1.1 Air Quality

A PSD analysis showed the emissions increases of SO₂, lead, and H₂SO₂ mist from the dual fuel conversions for all four of the Site's existing CTs to be below their respective PSD SER thresholds, while the emissions increases of following pollutants were found to exceed their respective PSD SER thresholds: PM, PM₁₀, PM_{2.5}, NO_x, CO, and VOC. Since emissions increases for these pollutants trigger PSD review, PSD review is also required for CO_{2e} because the calculated CO_{2e} emission increases exceed the applicable PSD SER.

Air emission control measures determined to be BACT for the proposed Project include utilizing dry low NO_x combustors during periods of natural gas firing, the use of water injection to reduce the formation of

NO_x emissions during periods of fuel oil firing, good combustion practices, and the use of low sulfur fuels.

3.6.1.2 Spill Prevention Control and Countermeasures Plan and Facility Response Plan

The Site currently maintains a Spill Prevention Control and Countermeasures Plan (SPCCP) outlining the procedures, methods, and equipment used for preventing the discharge of oil into or upon navigable waters. The Site does not currently employ a Facility Response Plan (FRP) because the total oil storage capacity does not exceed one million gallons (40 CFR Part 112).

The Site currently stores diesel fuel in an emergency generator fuel tank (400 gallons), a small aboveground storage tank (250 gallons), and a fire pump tank (119 gallons). Diesel fuel transfers from the fuel truck to one of the storage tanks are observed at all times and conducted within a concrete containment. An underground oil/water separator tank (3,000 gallons) accumulates oil removed from the oil/water separator (OWS). The tank has double-walled construction and includes monitoring of the interstitial space. The tank is normally empty and is emptied expeditiously when it accumulates oil. Up to twelve oil-containing 55-gallon drums and portable used oil containers are maintained in a covered structure with secondary containment. Lastly, the Site has five natural gas condensate tanks – one for the gas preheater (500 gallons) and one at each CTs gas skid (103 gallons each).

Site personnel, who are employed by a third-party contractor (Cogentrix), receive annual oil spill awareness/SPCCP training, which instructs on the following: applicable spill prevention equipment, spill prevention procedures, pollution control regulations, discharge prevention procedures, and reporting requirements. Site personnel are trained to report all spills, regardless of quantity or location, to the Control Room attendant and/or the Compliance Supervisor. In the event of a spill/release emergency incident, the Site's General Manager is authorized to implement the SPCCP. Depending on the severity of the incident, the Compliance Supervisor and/or General Manager are responsible for notifying Emergency Responders, Washington County Emergency Management, the National Response Center, the GEPD (Augusta), the State Emergency Response Commission, third-party spill recovery contractors, regulatory agencies, and internal Site personnel, as needed. In the case of a spill/release emergency incident where the oil has reached, or has the potential reach, surface waters, groundwaters, storm sewer systems, or soil, the General Manager must report the spill to the appropriate regulatory government agency.

Secondary containment structures are present for all oil-containing vessels on the Site. If a spill/release event occurs, the Site's secondary containment mechanisms serve to capture oil discharges. In accordance

with the SPCCP, the fuel oil storage tank(s) would be contained by a lined earthen berm, and curbed concrete basins will contain the forwarding skids and unloading station. The lined earthen berm surrounding the fuel storage tanks would slope to a sump containing a doubled walled sump drainage pipe with leak detection. The sump drainage pipe within the earthen berm and the concrete basins for the forwarding skids and unloading station would both drain to the proposed OWS. If the mechanisms fail to contain the spill, the SPCCP explains that the oil would flow to the Site's storm water drainage system, which discharges to a lined NPDES detention pond. The detention pond subsequently discharges to Tiger Creek.

Site structures visible from all sides (top, sides, and bottom) are inspected monthly, and structures lacking visibility on one or more sides are examined monthly. Structures subject to examinations include the following: storage tanks, oil-filled equipment, tank foundations and supports, stormwater basins, and wastewater basin. During examinations, Site workers verify the integrity of welded seams, gaskets, bolts, joints, and secondary containment structures. Work tickets are completed if corrosion, leaks, and/or damage is found. Three oil spill kits are located around the Site – one between CTs 1 and 2, one between CTs 3 and 4, and one near the Pumphouse Building. These kits are also checked monthly, and materials are restocked when used.

3.6.1.3 Fire Safety

Currently, 120,000 gallons of water in the Site's raw water tank are reserved for fire water use, while the remaining gallons are used for evaporative cooling and utility purposes. The raw water tank is connected to three fire water pumps located throughout the perimeter of the Site. In addition, the fire water reserves supply water to two Fire Protection Pumps, each with an operating pressure of 0-100 pounds per square inch gauge (psig), a flow rate of 1,000 gallons per minute (gpm), and a flow period of two hours.

3.6.1.4 Water Resources

There are two ponds located at the Site – an unlined stormwater pond and a lined NPDES detention pond that collects evaporative cooler blowdown and low volume wastewater from the Site.

Washington County Power, LLC's existing groundwater withdrawal permit from GEPD states that the entire Site may withdraw a maximum of 0.331 million gallons per day (mgd), on a monthly and annual average, from three groundwater wells located in Sandersville, GA. The three wells are supplied by Cretaceous sand aquifers and may be used for the following purposes on the Site: sanitary facilities, evaporative cooling system, service water, and fire protection.

3.6.2 Environmental Consequences

3.6.2.1 Air Quality

As previously stated in section 3.2, air quality is regulated by the NAAQS and the PSD program to protect human health and safety. A PSD analysis determined that the emissions increase from the dual fuel conversions for the four existing CTs at the Site would exceed the PSD SERs for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOC, and CO_{2e}. PSD modeling was subsequently conducted to determine if the modifications for the four CTs would contribute to a NAAQS or PSD Class II increment exceedance. The modeling included relevant existing pollutants at the Site and the surrounding area. Based on the conservative modeling results for the entire Site, it has been predicted that the conversions would not cause or contribute to violations of the NAAQS and PSD Class I and Class II Increment (**Appendix A**).

The Project would result in a potential increase of air emissions, and Oglethorpe has applied for, and received (11/17/2021), a Title V Air Quality Permit for the Project from the GEPD (**Appendix A**). The GEPD is the agency responsible for protecting Georgia's air quality through the regulation of air emissions from industrial and mobile sources.

3.6.2.2 Spill Prevention Control and Countermeasures Plan and Facility Response Plan

The Site currently holds an SPCCP for its operations, which applies to both Washington County Power, LLC and the Facility (units CT2 and CT3 owned by Oglethorpe). The SPCCP is reevaluated and amended when 1) there is a change in the design, construction, operation, and/or maintenance of the Site that has the potential to affect the Site's oil discharge, and 2) at least once every five years. Following completion of the proposed Project, the Site's total oil storage capacity will exceed one million gallons, which poses a risk to fish, wildlife, and sensitive environments in the event of oil discharge due to the location of the Site. As Oglethorpe proposes to install either one 2.8 million (MM) gallon fuel oil above ground tank or two 1.4MM gallon above ground tanks for the Project, the Site would be required to update its SPCCP and to develop and submit an FRP according to 40 CFR Part 112 to demonstrate the Site's preparedness to respond to a worst-case oil discharge event.

3.6.2.3 Fire Safety

The National Fire Prevention Association's (NFPA) 241: Standard for Safeguarding Construction, Alteration, and Demolition Operations (NFPA 241) is a fire code that promotes human health and safety at work sites. NFPA 241 "provides measures for preventing or minimizing fire damage to structures, including those in underground locations, during construction, alteration, or demolition" (NFPA, 2022a).

In accordance with NFPA 241, Oglethorpe would enact the following temporary fire protection measures during construction: 1) smoking would be prohibited in construction areas and subject to limitations throughout the Project site, 2) an authority would supervise operations involving fire ignition, and 3) fire-prevention and fire-protection programs would be developed in coordination with the local fire department and implemented at the Project site. In compliance with NFPA 10: Standard for Portable Fire Extinguishers (NFPA 10), during Project construction, portable, Underwriter Laboratories rated (UL-rated) fire extinguishers would be placed in areas considered to be temporary fire hazards (NFPA, 2022b).

To comply with the NFPA codes associated with the operation of the proposed fuel oil tank, Oglethorpe proposes to extend the Site's existing fire water loop system and install a new fire water loop, with two fire water connections, on top of the earthen berm surrounding the proposed fuel oil storage tank. Four fire monitors would also be installed on top of the berm and supplied with adequate water flow and pressure through the manifold ring to provide full coverage of all four quadrants of the storage tank area.

A CO₂ suppression system would be installed on units CT2 and CT3 in accordance with NFPA 12: Standard on Carbon Dioxide Extinguishing Systems (NFPA 12) (NFPA, 2022c). Per NFPA 12, the CO₂ suppression system trip notification would be set to a minimum of 20 seconds and the CO₂ volume would be enough for the turbine enclosure, original equipment manufacturer (OEM) Contractor liquid fuel/atomizing air enclosure, and OEM fuel heating skid enclosure.

Additional NFPA codes that the Site would comply during operation of the Project are as follows: NFPA 1: Fire Code, NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, NFPA 30: Flammable and Combustible Liquids, NFPA 31: Standard for Installation of Oil Burning Equipment, NFPA 70E: National Electric Code, NFPA 79: Electrical Standard for Industrial Machinery, NFPA 101: Life Safety Code, NFPA 220: Standard Types of Building Construction, NFPA 780: Lightning Assessment and Standard for Installation of Lightning Protection Equipment, and NFPA 850: Recommended Practice for Fire Protection of Electric Generating Plants and High Voltage Direct Current Converter Stations.

In compliance with Ga Rule 120-3-11.03 Submission of Plans for Storage Installations (Ga Rule 120-3-11.03), the Facility's Balance of Plant (BOP) Contractor would obtain approval of the fuel oil storage tank plans from the state Fire Marshall prior to construction.

3.6.2.4 Water Resources

Washington County Power, LLC holds a groundwater withdrawal permit issued by the GEPD for the entire Site. While the Project would result in minor increases in water intake from three groundwater

wells in and around Sandersville, the future quantities of water withdrawal is expected to remain within the limits of the existing groundwater withdrawal permit, and the increase would not have an impact on current or future available water supply.

The Project will affect the Site's infrastructure for water usage and discharge through the installation, and application, of a water-injection system and a DEMIN water storage tank. The DEMIN water will be transferred to the GE water injection enclosures for units CT2 and CT3 via a DEMIN water forwarding system connected to the BOP DEMIN water storage tank. The flow rate and pressure of the water will be 161 – 330 gpm and 15 – 65 psig, respectively.

With the addition of diesel fuel oil and a DEMIN water storage tank, the Project is expected to increase the Facility's water use/discharge; thus, the Facility would require an expanded OWS. The Site currently has one OWS that is utilized by the entire Site. Oglethorpe proposes to add three new OWSs, which will all output to the existing detention pond – one at unit CT2, one at unit CT3, and one at the fuel storage area. The OWSs at CT2 and CT3 will collect water from the new equipment, as well as any flush water, while the OWS at the fuel storage area will collect water from the unloading station, storage tanks, and forwarding pump skids. Washington County Power, LLC holds an industrial NPDES discharge permit issued by GEPD for the entire Site allowing for the discharge of evaporative cooler blowdown water and low volume wastewaters to Tiger Creek. The Site will continue to operate within the limits of the existing permit following completion of the Project.

3.6.3 Mitigation

Oglethorpe will continue to comply with all applicable air regulations and permit requirements, the Site's groundwater withdrawal permit and NPDES discharge permit, and applicable NFPA codes, to protect public health. Additionally, Oglethorpe would implement Best Management Practices (BMPs) during the construction phase of the Project to reduce ground disturbance, erosion and sediment runoff, and potential impacts to groundwater. As a result, there would be no impacts or environmental consequence to human health and safety as a result of the Project, and no mitigation is proposed.

3.7 Land Use

The Project would not result in the temporary or permanent conversion of existing land use types because all construction would occur within the existing footprint of the Site; therefore, no impacts on land use would occur, and no mitigation is proposed.

3.8 Noise

The nearest noise sensitive area (NSA) is a residence at 2046 Mills Lindsey School Rd, which is approximately ¼ mile south of the Site. The Project would not result in increased noise levels above historical levels at NSAs; therefore, no noise impacts to NSAs would occur, and no mitigation is proposed.

3.9 Socioeconomics and Environmental Justice

3.9.1 Socioeconomics

Socioeconomics includes population growth trends, racial and ethnic characteristics, employment, income, public services (education facilities, medical facilities, fire protection, police protection), and recreation and open space. The Project includes mechanical upgrades to existing equipment during a routine outage and would not result in any changes or impacts to population trends, racial and ethnic characteristics, employment, public services, or recreational spaces.

3.9.2 Environmental Justice

Environmental Justice is the analysis of human health or environmental effects of a proposed project on minority or low-income populations to determine if they would be disproportionately adversely impacted by the proposed project. The Project would allow the Facility to operate with increased reliability, which would result in less frequent shutdowns and restarts, thereby reducing fuel costs, equipment maintenance, and wear and tear on units. The increased efficiency and lower costs would benefit the local EMCs and thus could reduce costs to the local community.

Table 3.9-1: Demographic Indicators within 1,000 feet of the Project Lines' Route

Block Group ID	Population	Demographic Indicator	Value	Distance
Georgia BG Averages		Minority Population	48%	Statewide
		Low Income Population	33%	
133039501001	866	Minority Population	48%	0.31 mile
		Low Income Population	52%	

Source: EPA, 2023

A Block Group (BG) is the lowest level of granularity for which accurate demographic data is available. Any BG that touched the Facility was included for analysis. The population of the BG in **Table 3.9-1** represents the entire population both within and outside the immediate Site. The distance in the above table shows the geographic size, in miles, of the BG that the Site is located within.

The average minority population for a typical BG in Georgia is 48% according to EJSCREEN, and the average low-income population for a typical BG Georgia is 33%. Considering these typical percentages,

Oglethorpe has determined based on EPA guidance that any BG that is in the upper quintile of minority or low-income would represent a higher-than-average minority or low-income population. The Site is located within a BG that is considered an environmental justice community based on the percentage of low-income households that are present. With the average Georgia BG having a 33% low-income population and the affected BG has an average low-income population of 52%, this BG has a low-income population that is approximately 37% higher than the Georgia average. However, since the Project would not result in significant adverse impacts, it would also not result in disproportionately adverse impacts on this environmental justice community.

3.10 Utilities

3.10.1 Affected Environment

Public utilities include water supply, treated wastewater, sanitary sewer, electricity, gas, and solid waste services. The Project would not result in any changes or impacts to sanitary sewers, electricity, solid waste services, and gas supply line infrastructure. There would be an increase in the total intake and discharge of water supplied for the cooling towers.

The Site obtains water for process and sanitary uses from three on-site groundwater wells. The wells are permitted by the GEPD under Groundwater Use Permit No. 150-0024, issued to Washington County Power, LLC for the entire Site. The current Groundwater Use Permit was issued on 13 December 2021 and expires on 13 December 2031. The Groundwater Use Permit limits the withdrawal and use of groundwater obtained from the wells to a combined monthly and annual average of 0.331 mgd. The Site submits monthly reports of groundwater use to GEPD timely. Additionally, the Site does not require a Permit to Operate a Public Water System as it does not meet the definition of a Non-Transient, Non-Community Water System, which is a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year. The Site representatives were not aware of any issues with respect to the groundwater wells nor of any recent agency inspections or outstanding violations. No records of outstanding or historical violations with respect to groundwater use were identified during Oglethorpe's review of the Environmental Database Report (EDR) or Enforcement and Compliance History Online (ECHO) databases in association with the Site. The City of Sandersville, located in Washington County, utilizes six major wells to supply water to three water plants and three water towers (City of Sandersville).

In addition to the groundwater withdrawal permit, the GEPD also reissued a modified, extended industrial NPDES discharge permit to Washington County Power, LLC for the Site. The initial permit expired on

October 31, 2021, but was administratively extended on February 1, 2022, and will remain in effect until January 31, 2027. The Site's current industrial NPDES discharge permit allows the Site to discharge evaporative cooler blowdown and low volume wastewaters into an unnamed tributary of Tiger Creek and requires the daily and/or monthly monitoring of the following effluent characteristics: flow (mgd), total suspended solids, oil and grease, and total phosphorous.

3.10.2 Environmental Consequences

The Project would result in minimal, long-term increased water usage, as depicted in **Table 3.10-1**. It is anticipated that the Facility's water usage and discharge will remain within the parameters of the existing permits. **Table 3.10-1** provides current intake and discharge of water during normal and peak operations in the summertime.

Table 3.10-1: Water Usage and Discharges During Summer (gallons per minute)

Facility Water Usage (annual average gpm)	Without Evaporative Coolers in Service during Natural Gas Combustion	With Evaporative Coolers in Service during Natural Gas Combustion
Current Maximum Usage*	1	28
Current Normal Usage**	1	12
Proposed Maximum Usage†	62	88
Proposed Normal Usage‡	5	17
Change in Maximum Usage	61	60
Change in Normal Usage	4	5
Maximum Well Withdrawal	0.331 million gallons/day	

* Based on 3,500 hours per year of natural gas firing total for both CT2 and CT3.

** Based on a maximum of 6,000 hours per year of natural gas firing total for both CT2 and CT3.

† Based on the permitted maximum of 6,000 hours per year of natural gas firing and 1,000 hours per year of fuel oil firing total for both CT2 and CT3.

‡ Based on 3,500 hours per year of natural gas firing and 140 hours per year of fuel oil firing total for both CT2 and CT3.

The Facility's current maximum usage and current normal usage when the evaporative coolers are in operation were calculated under the assumption that the evaporative coolers would be functioning at 100 percent and 75 percent capacity, respectively. Estimates show that the Project would increase the annual average water usage by 60 gpm under maximum usage and 5 gpm under normal usage when evaporative coolers are operating, and 61 gpm and 5 gpm, respectively, when evaporative coolers are not operating. This minimal increase in water usage would not affect the existing water supply and would remain within the Site's withdrawal permit limit of 0.331 mgd (equivalent to a daily average withdrawal rate of 230 gpm).

The Project would not affect the Site's water discharge. The industrial NPDES discharge permit for the Site does not have a permitted discharge limit. Additionally, the increased water usage as described above would larger evaporate during combustion and a significant increase in water discharge volume is not

anticipated. As such, no modifications to either the groundwater withdrawal permit or the industrial NPDES discharge permit are anticipated as a result of the proposed Project.

3.10.3 Mitigation

The Project will only result in minor increases in water use and discharge levels. The Project would have increased daily water usage and discharge but would not affect the effluent composition. Furthermore, the increased usage and discharge would remain within the limits of the current groundwater withdrawal and NPDES discharge permits for the Site. Therefore, there are no mitigation measures for the increased withdrawals or discharges.

3.11 Threatened and Endangered Species

There are no federally threatened or federally endangered species listed as having potential to occur within the Project footprint. One candidate species was identified, as listed in **Table 3.11-1**. Protected species information was obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning & Consultation System (IPaC) for the Project site. Any impacts from the Project would be limited to the existing Site boundaries. There is no known habitat or previous occurrences documented for federal or state protected species within the Facility footprint, as documented in the IPaC report (attached in **Appendix C**). There also is no designated critical habitat for protected species within the area (USFWS, 2023). Further, no land disturbance activities would occur as a result of the Project; therefore, the Project would not result in impacts on protected species.

Table 3.11-1: Protected Species with the Potential to Occur in the Facility

Common Name	Scientific Name	Federal Status	State Status
Insects			
Monarch Butterfly	<i>Danaus plexippus</i>	C ^{1,2}	-

- 1) Candidate species have sufficient information to propose them as threatened or endangered under the Endangered Species Act (ESA) but receive no protection under the ESA.
- 2) The monarch butterfly was returned to the USFWS IPaC as a candidate species. Georgia Department of Natural Resources (GDNR) does not track this species.

Source: USFWS, 2023

The Site is located within the hydraulic unit code (HUC) 8-03070102 Lower Oconee watershed. There are currently 33 state-protected species of plants and animals with potential to occur in this watershed, which are listed in **Appendix C** (GDNR, 2022). As the Project would involve only construction activities within the existing Site footprint and will not involve new ground disturbing impacts or clearing of vegetation, impacts on state protected species are unlikely. For these reasons and in accordance with 50 CFR 40 and 1970.657(b), RUS has determined that the proposed Project will have “No Effect” on those listed species or their critical habitat and written concurrence from USFWS is not required. Therefore, no further

consultation with USFWS is required and the Section 7 review is complete. Since no impacts are anticipated, no special mitigation for protected species is proposed.

3.12 Transportation

3.12.1 Affected Environment

According to the Georgia Department of Transportation (GDOT) Traffic Analysis and Data Application (TADA), County Line Road serves as a rural minor collector road connecting two regional rural major collector roads in the larger vicinity of the Site (GDOT, 2023). Linton Road is approximately 1.4 miles north of the Site, and Deepstep Road NE is approximately 5.8 miles to the southwest of the Site. County Line Road changes names to Prosser Road as the road approaches Gum Creek in Washington County.

A review of GDOT TADA data indicated an isolated traffic count located approximately 4.8 miles to the southwest of the Site and on County Line Road. Data from that traffic count conducted in December of 2019 indicated relatively low use with 239 vehicles traversing the road between the hours of 12 am and 12 pm. Another count was conducted on Linton Road, a rural major collector, in the same month and indicated 293 vehicles traversing Linton Road in a 24-hour period.

3.12.2 Environmental Consequences

Temporary and minor traffic increases would begin when preliminary construction activity begins approximately a year and a half prior to the Site's routine major outage, when Project upgrades would be installed. No additional full-time employees would be hired for the operation of the Facility once the Project is complete, therefore, no long-term or permanent traffic impacts are anticipated.

3.12.3 Mitigation

Since no significant impact on transportation would occur as a result of the Project, no adverse environmental consequences would occur, and no mitigation is proposed.

3.13 Vegetation

The Project would not require clearing of vegetation, as all construction activities would occur within the existing Site. Therefore, no mitigation is proposed.

3.14 Water Resources and Wetlands

The proposed Project would not result in ground disturbing impacts outside of the Site; and all construction activities would occur within the existing Site footprint. During the construction of the proposed Project, stormwater runoff would be managed by control measures detailed in a Construction

Stormwater Pollution Prevention Plan (SWPPP). After construction and implementation of the upgrades, no new impacts to the receiving waters or associated wetlands within or near the Site are anticipated. Therefore, no mitigation is proposed. A National Wetlands Inventory (NWI) Map of the Project area is included in **Appendix B**.

3.15 Wildlife

The property is entirely fenced for security purposes. The existing fence is approximately eight feet high, which deters wildlife from entering the Site. No changes to the existing Site footprint or fence line are proposed. Therefore, no impacts on wildlife are anticipated and no mitigation is proposed.

4.0 CUMULATIVE EFFECTS

In accordance with NEPA, Oglethorpe considered the cumulative impacts of the Project and other projects or actions in the area. As defined by the CEQ, a cumulative effect is the impact on the environment that results from the incremental impact of the proposed action when added to other past (completed five or less years ago), present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions (CEQ, 1997). Although the individual impact of each separate project may be minor, the additive or synergistic effects of multiple projects could be significant. This section focuses on recent past, ongoing/current, and reasonably foreseeable future projects that have or would impact the same resources that would be impacted by this Project.

In order to understand the contribution of past actions to the cumulative impacts of the proposed action, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects. In this analysis, RUS has generally considered the impacts of past projects within the resource-specific geographic scopes as part of the affected environment (environmental baseline), which was described under the specific resources discussed throughout section 3.0. This cumulative impact analysis includes other actions meeting the following three criteria:

- the action impacts a resource that is also potentially affected by the Facility's Dual Fuel Conversion Project;
- the action causes impacts within all or part of the same geographic scope as the Facility's Dual Fuel Conversion Project; and
- the action causes impacts within all or part of the temporal scope for the potential impacts from the Facility's Dual Fuel Conversion Project.

The geographic scope for each resource is unique and is generally more localized for somewhat stationary resources such as geological and soil resources; more expansive for resources with a large geographic area, such as visual impacts and air emissions; and based on jurisdictional boundaries for resources such as socioeconomics and public lands. Cumulative impacts were evaluated from a geographical perspective, as the proximity of other actions to the Project is a major predictor of whether cumulative impacts would occur. In general, the closer another action is to the Project, the greater the potential for cumulative impacts. **Table 4-1** summarizes resource-specific geographic boundaries considered in this analysis, and

the justification for each. Actions occurring outside these geographical boundaries were generally not evaluated because their potential to contribute to a cumulative impact in a significant way diminishes with the increasing distance from the Project.

Table 4-1: Geographic Scope by Resource for Cumulative Impacts Associated with the Project

Resource	Geographic Scope	Justification for Geographic Scope
Geological Resources and Soils	For geological resources, the area of disturbance of the Project and other projects would be overlapping or immediately abutting one another and involve excavation. Potential soils impact would be limited to within 0.25 mile of the Project workspaces.	Impacts on geological resources and soils would be highly localized and primarily limited to the respective project footprints during active construction. Cumulative impacts would only occur if other geographically overlapping or abutting projects were constructed at the same time as the Project.
Surface Water, Groundwater, and Aquatic Resources	Lower Oconee (HUC 0307010) watershed boundary.	Impacts on surface waters can result in downstream contamination or turbidity; therefore, the geographic scope used to assess cumulative impacts on water and aquatic resources includes the Lower Oconee watershed within the Site.
Wetlands		
Vegetation and Wildlife	2 miles from the Site. For less-transient species, such as reptiles and amphibians, the geographic scope will be the area immediately within and abutting the Project's construction areas.	Due to the transient nature of wildlife, cumulative impacts on vegetation and wildlife have been considered within a 2-mile buffer of the Site.
Cultural Resources	The area of potential effect of the Project and other projects would be overlapping or immediately abutting one another and involve excavation, or within the viewshed.	Project impacts on cultural resources would be restricted to the existing confines of the Facility, therefore, the geographic scope for cumulative impacts is also confined to the Site.
Land Use and Special Interest Areas	Within 0.5 miles of the Project area.	Project impacts on general land uses would be restricted to the existing confines of the Facility, therefore, the geographic scope for land use and recreation is 0.5 mile from the centerline of the Site boundary.
Aesthetics/Visual Resources	Within 0.5 miles of aboveground facilities.	Assessing the impact based on the viewshed allows for the impact to be considered with any other feature that could influence visual resources.
Socioeconomics	Counties where the Project activities are proposed.	The geographic scope of potential impact for socioeconomics was considered to include the counties affected by the projects where most workers would be expected to reside during construction and operation of the Project. Affected counties would experience the greatest impacts associated with employment, housing, public services, transportation, traffic, property values, economy and taxes.
Environmental Justice	U.S. Census Bureau (USCB) defined BGs affected by the Project.	The geographic scope of potential impacts for environmental justice includes all BGs affected by the Project.
Air Quality – Construction ¹	Within 0.25 mile of all active construction (pipeline, road crossing, and aboveground facilities).	Air emissions during construction would be limited to vehicle and construction equipment emissions and dust and would be localized to the Project's active construction work areas.
Air Quality – Operation ¹	50 kilometers (~31.1 miles) from Site.	EPA's distance for modeling of large PSD sources, at 40 CFR 51, appendix W
Noise - Construction	Within 0.25 mile of any construction workspaces.	Areas in the immediate proximity of aboveground facility construction activities would have the potential

Resource	Geographic Scope	Justification for Geographic Scope
		to be affected by construction-generated noise.
Noise - Operation	Other facilities that would impact NSAs within 1 mile of any noise-emitting permanent aboveground facility.	Noise from the Project’s permanent aboveground facilities could result in cumulative noise impacts on NSAs within 1 mile.

(1) GHGs do not have a localized geographic scope. GHG emissions from the Project combined with projects all over the planet lead to increased CO₂, CH₄, and other GHG concentrations in the atmosphere.

4.1 Projects and Activities Considered

Given the limited impacts resulting from construction and operation of the Project and the confined area where impacts would occur, the Project is not expected to contribute towards a cumulative impact on the majority of resources discussed throughout section 3.0 of this EA. The Project can only contribute towards a cumulative impact if it would also result in direct or indirect impacts alone. Based on the analysis in section 3.0, the Project would not result in direct or indirect impacts on the following resources: aesthetics, floodplains, geology, soils, prime farmlands or farmlands of state-wide importance, historic and cultural resources, human health and safety, land use, noise, and socioeconomics. The Project may result in minor impacts on air quality and groundwater. The cumulative impacts analysis looks at the potential impacts of other actions as described in relevant guidance. NEPA requires reasonable forecasting, but an agency is not required to engage in speculative analysis or to do the impractical, if not enough information is available to permit meaningful consideration. The scope of the cumulative impact assessment depends in part on the availability of information about other projects. For this assessment, other projects were identified from information obtained from publicly available database searches and public notices. This section will only consider other projects that would also contribute to cumulative impact on air quality and groundwater along within the same geographic and temporal scope as the proposed Project. Cumulative impacts were typically derived from our approximation of project boundaries as interpreted from publicly available project descriptions, maps, and aerial photography.

Table 4.1-1: Past, Present, and Reasonably Foreseeable Future Projects Evaluated for Potential Cumulative Impacts with the Project

Project Description	Project Category	Resource Impacted	County
Past Projects			
AL Sandersville (2018) ¹	Renovation	Air Quality	Washington
Carbo Ceramics, Inc. – Toombsboro Plant (2018) ¹	Renovation	Air Quality	Wilkinson
BASF Corporation, Edgar Plant (2018) ¹	Renovation	Air Quality	Wilkinson
Inferfor Lumber – Eatonon Division (2022) ²	Renovation	Air Quality	Putnam
Current Projects			
No current projects within the geographic scope of the Project were identified.			
Future Project			

Project Description	Project Category	Resource Impacted	County
No foreseeable future projects within the geographic scope of the Project were identified.			

Source: ¹PSD Permit Application Volume II (**Appendix A**); ²Putnam County Georgia (2022)

4.2 Cumulative Impacts by Resource

When combined with other past, present, and reasonably foreseeable future projects, the Facility's planned Project could only contribute toward cumulative impacts on water resources and air quality. For the Project to contribute towards a cumulative impact on water resources and/or air quality, the other contributing project(s) must overlap the same geographic and temporal scope as the planned Project. See **Table 4.1-1** for information about projects with potential cumulative impacts with the Project.

4.2.1 Water Resources

For the Project to contribute to a cumulative impact on groundwater, surface water, wetlands, or aquatic resources, other unrelated projects/actions also must result in impacts on those water resources within the same geographic area and at the same time. As defined in **Table 4-1**, the water resources geographic scope is the Lower Oconee watershed (HUC 0307010) where the Site is located.

The Project would result in minor increases in water intake from three groundwater wells in and around Sandersville; however, this increase would not adversely affect the current or future available water supply. When combined with other past, present, or reasonably foreseeable future projects, the increased demand for water is insignificant compared to the volume of available water provided by the wells in Sandersville.

There were no other past, present, or future projects identified within the Lower Oconee watershed, and therefore, there are no projects contributing towards a cumulative impact on water resources.

4.2.2 Air Quality

For air quality, the distance used to establish a geographic scope was derived from the EPA's cumulative modeling of large PSD sources during permitting and follows 40 CFR 51, Appendix W, Section 4.1. This references a 31-mile (50-kilometer) radius of current or proposed sources of operational emissions.

Based on the air quality modeling results for performing dual fuel conversions for the Site's four existing CTs, it has been predicted that the conversions would have minimal effects on the NAAQS and PSD Class I and Class II Increment. It is anticipated that the conversions would not cause or contribute to adverse ambient air quality impacts. Because this Class II modeling considered cumulative effects of

other existing and proposed sources, the Project would not cumulatively contribute to adverse air quality impacts.

Oglethorpe then reviewed the PSD Permit Application, prepared by Trinity Consultants for Washington County Power LLC, to identify other proposed or pending projects within that 31-mile radius (PSD Permit Application Volume II [**Appendix A**]). There are four projects within a 31-miles radius of the Project that have undergone renovations or upgrades, or that have otherwise received modifications to their air permits, within the past five years. One of those projects, AL Sandersville, is a natural gas-fired power generating facility that has been operating since 2014. In 2018, AL Sandersville was issued a V-06-1 Permit Amendment that included a permit condition stating that AL Sandersville would submit semiannual gas analyses to monitor the sulfur content of the natural gas used to power their CTs. The permit modification did not involve any physical modifications to the Site or upgrades to equipment. Oglethorpe is unaware of any newly proposed or pending power generating facilities within that geographic scope. Other past non-energy projects identified within the same geographic scope as the proposed Project include general commercial and manufacturing/industrial facilities.

The Project's minimal increase in emissions would not contribute towards a cumulative impact on air quality, regardless of emissions from facilities with a 31-miles radius of the Site, due to the outcome of the Class II modeling done for the proposed dual fuel conversions of the Site's four existing CTs.

5.0 SUMMARY OF MITIGATION

No resources are significantly impacted by the Project, and therefore no additional mitigation efforts are proposed. The Facility will properly maintain and operate emissions controls selected as BACT, including dry low NO_x combustors on the turbines during periods of natural gas combustion, water injection to minimize the formation of NO_x emissions during periods of fuel oil combustion, good combustion practices, and the use of low-sulfur fuels, as required by the Facility's air permit.

6.0 COORDINATION, CONSULTATION, AND CORRESPONDENCE

This section describes the consultation and coordination RUS and Oglethorpe have had with the public, elected/public officials, and government agencies during the preparation of this document. This section describes the steps taken to inform these groups of the Project, summarizes comments received, and outlines further coordination and consultation with the public and other interested parties.

6.1 Agency Coordination

RUS notified the SHPO and Tribal representatives regarding the Project's use and purpose, as well as its potential to impact historic and cultural resources within the Project's footprint on May 18, 2023, and from June 28, 2023 to August 8, 2023, respectively. Tribal consultation letters were sent out on June 28, 2023. RUS conducted a cultural background review of the Project area and submitted a Section 106 Environmental Review Package to the SHPO on July 20, 2023. No responses were received from tribal representatives and SHPO concurrence was received on September 12, 2023.

Federal, state, and local government agencies were sent a scoping letter on May 12, 2023, requesting assistance in identifying specific resources and issues at and around the Project site that should be considered during the environmental review for the Project. **Table 6.1-1** includes the names of the agencies and tribes that were sent scoping letters for this Project.

Table 6.1-1: Scoping Contacts

Agency/ Organization	Department	Position
Federal Agencies		
National Park Service	Air Resource Division	Southeast Regional Air Resource Coordinator
National Resources Conservation Service	Georgia State Office	State Conservationist
	Sandersville Service Center	District Conservationist
U.S. Army Corps of Engineers	Savannah District, Regulatory Division	Chief, Coastal Branch
U.S. Department of the Interior	Office of Environmental Policy and Compliance	Regional Environmental Officer (Atlanta)
U.S. Environmental Protection Agency	Atlanta Federal Center	Chief, NEPA Program Office
U.S. Fish and Wildlife Service	Georgia Ecological Services	Supervisory Biologist
State Agencies		
Georgia Department of Natural Resources	Georgia Environmental Protection Division, Air Protection Branch	Stationary Source Permitting Manager
	Georgia Environmental Protection Division, Watershed Protection Branch	Branch Chief
	Historic Preservation Division	Division Director
Georgia Department of Transportation	Environmental Services	Administrator
		District Engineers

Agency/ Organization	Department	Position
Local Government		
Town of Sandersville	City Council	Council Post 1
		Council Post 2
		Council Post 3
		Council Post 4
		Mayor
		Mayor Pro-Tem
Washington County	Board of Commissioners	Chairman
		Board Member District 1
		Board Member District 2
		Board Member District 3
		Board Member District 4
		Administrator and Clerk
Tribes		
Alabama-Quassarte Tribal Town	\	THPO
Muscogee (Creek) Nation		THPO
Poarch Band of Creek Indians		THPO
Seminole Nation of Oklahoma		Historic Preservation Officer
Thlopthlocco Tribal Town		THPO
Coushatta Tribe of Louisiana		THPO
Kialegee Tribal Town		Tribal Administrator
Seminole Tribe of Florida		Senior Director of the Heritage and Environment Resources Office (HERO)

The letters sent, as well as copies of the responses received, are included in **Appendix D**. The following summarizes the comments of those agencies responding.

The following is a brief overview of responses:

- The Washington County Board of Commissioners Administrator spoke with Oglethorpe's Public Relations team and was unconcerned with the scope of the Project, since all ground disturbance and infrastructure construction would occur within the existing Site footprint.
- The USFWS responded that based on the information provided, the proposed action is not expected to significantly impact protected resources under the jurisdiction of USFWS.
- The Sandersville District Conservationist of the NRCS reviewed the proposed Project with respect to FPPA and found that, because the Project does not convert farmland, no further action with FPPA is required. The Sandersville NRCS also reviewed the proposed Project's potential to

affect NRCS watershed dams and easements. Because there are no watershed dams or associated structures downstream from the Project site, no further action is required with the PL-534 Flood Control Act of 1944 and PL-566 Watershed Protection and Flood Prevention Act. Additionally, since there are no NRCS easements downstream, and within the vicinity of, the Project site, no further action is required with the NRCS Wetland Reserve Program and the NRCS Farm and Ranchland Protection Program

Additionally, a submission was made to USFWS on behalf of the Project, through the USFWS IPaC system. The resulting communication from USFWS is provided as **Appendix D**, and indicates that there are no threatened, endangered, or candidate species, nor any critical habitat, within the Project area. This communication is included to satisfy Section 7 Consultation for the Project.

6.2 Public Involvement

This EA will be made available to the public for a 14-day public review and comment period. Availability of the document for review and comment will be published in the Sandersville Progress newspaper.

Copies of the EA will be made available for public review on the RUS project website, <https://www.rd.usda.gov/resources/environmental-studies/assessments>, and at the headquarters of Oglethorpe at 2100 E Exchange Pl., Tucker, GA 30084.

All questions and comments should be emailed to the U.S. Department of Agriculture, Rural Utilities Service website at:

RUSPublicComments@usda.gov

All mailed questions and comments should be post marked within the 14-day comment period and be sent to:

Sara Kent
Department Manager, Environmental Services
Burns & McDonnell Engineering Company, Inc.
4004 Summit Boulevard
Suite 1200
Atlanta, GA 30319

Once RUS has reviewed the comments, it will issue its decision related to the proposal. Should RUS choose to issue a Finding of No Significant Impact (FONSI) for the proposal, a newspaper notice will be published informing the public of the RUS finding and the availability of the EA and FONSI. The notice shall be prepared in accordance with RUS guidance.

7.0 LIST OF PREPARERS

The EA for the Project was prepared by RUS in coordination with Oglethorpe and Burns & McDonnell. The following is a list of preparers of this document.

Oglethorpe

- Josh Hubbard, Project Manager
- Courtney Adcock, Principal Environmental Specialist
- Robert Hofto, Manager, Technical and Operations Support
- Jeff Wilson, Director, Gas Turbine Fleet Major Maintenance
- Jeff Swartz, Senior VP, Plant Operations

Burns & McDonnell

- Sara Kent, Project Manager
- Fawn Armagost, Environmental Scientist
- Madeline Long, Assistant Environmental Scientist

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**APPENDIX A – TITLE V OPERATING PERMIT MODIFICATION WITH STATE
CONSTRUCTION APPLICATION AND MODELING REPORT**

APPENDIX B – FEMA AND NWI MAPS

APPENDIX C – USFWS IPAC REPORT AND STATE PROTECTED SPECIES

APPENDIX D – AGENCY COORDINATION LETTERS