

4.0 OTHER REQUIRED CONSIDERATIONS

4.1 UNAVOIDABLE ADVERSE IMPACTS

The Proposal would have unavoidable adverse impacts on the existing flora and fauna where it would be constructed. Release of air pollutants from combustion would result in unavoidable adverse impacts to the air. There would be unavoidable adverse impacts to surface water resources from withdrawals and consumptive water use. The Proposal would have unavoidable adverse impacts on traffic on some roadways in the Warrenton area during construction and operation.

4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of "...any irreversible and irretrievable commitments of resources which would be involved in the Proposal should it be implemented."⁵⁸ Neither the National Environmental Policy Act nor its implementing regulations define "irreversible and irretrievable." However, an irreversible and irretrievable commitment would generally be one that cannot be changed once it is made. This section describes irreversible and irretrievable commitments of resources associated with the implementation of the Proposal.

4.2.1 Land Resources

The construction and operation of the Proposal will require the commitment of approximately 106 total acres of land for the plant footprint. While it is possible that these structures, roads and related facilities could be removed and the natural landscape renewed, this is unlikely in the foreseeable future.

4.2.2 Water Resources

The plant will require approximately 2 MGD of water, which will be obtained from existing reservoirs and gray water sources. While there will be loss of the downstream use of this water while the plant is in operation, the process is reversible (i.e., the use for the Proposal can be stopped), and therefore the loss is not considered irreversible and irretrievable. Regarding impacts to Waters of the United States, the specific waters (which are minor) that are impacted are not likely to be restored (although it is possible); however, the impacts can be mitigated by restoration of Waters of the United States at other locations.

4.2.3 Biological Resources

The Proposal will not result in the loss of any high quality biological resources. The biological value of the area of the plant will be little changed. The largest changes will be at the locations of permanent structures. Borrow areas and other areas disturbed only during construction could be restored to support vegetation similar to what is there

⁵⁸40 CFR 1502.16

now. As renewable forest resources will be used for fuel; fuel does not represent an irreversible and irretrievable commitment of resources.

4.2.4 Natural and Mineral Resources

The Proposal will use concrete, steel, wire, asphalt, various pipes, plastic and other resources that are unlikely to be re-used.

4.3 RELATIONSHIP BETWEEN SHORT-TERM USE OF ENVIRONMENT AND LONG-TERM PRODUCTIVITY

NEPA requires consideration of the relationship between short-term uses of the environment and long-term productivity associated with a Proposal. This involves the consideration of whether a Proposal is sacrificing a resource value that might benefit the environment in the long term, or some short-term value to the sponsor or the public. In the context of the short-term uses of the environment associated with the operation of the facility and the long-term impairment of environmental resources as they have been analyzed in this EIS, short-term refers to the period of time encompassing the life span of the power plant and its associated facilities to the period of time encompassing the disassembly of the plant and subsequent restoration and rehabilitation activities. Long-term refers to that period of time following restoration and rehabilitation activities, during which consequent impacts from the Proposal still affect the environment.

The proposed short-term uses of the environment associated with the Proposal are the development of approximately 106 acres; the use of approximately 2 MGD of water; and the direct loss of vegetation, wildlife habitat, intermittent streams and wetlands.

The projected period before natural conditions return to an approximate pre-Proposal status within the Proposal area is expected to exceed several decades following completion of restoration activities. Water withdrawals for the Proposal would cease immediately.

Wetlands and streams restored following equipment removal and rehabilitation efforts will recover their pre-development characteristics. Immediately following the disassembly of the power plant and its associated facilities, and regrading and revegetation, the viewshed could be restored.

4.4 CUMULATIVE EFFECTS ANALYSIS

4.4.1 Definition of Cumulative Effects

CEQ regulations define cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and

reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action.”⁵⁹

4.4.2 Proposal’s Area of Impact

The Proposal’s area of influence, which is the physical area within which the effects of the Proposal may be noticed, can vary for each resource assessed.

For impacts from pollutants other than mercury and GHGs on air resources, the area assessed includes a 50-km radius of the site used for air quality modeling. Mercury emissions, transport and deposition occur worldwide, but impacts can occur on both local and regional levels. Thus the area of influence is global as well as regional/local. Since all releases of GHGs, past, present and future, likely contribute to global climate change, the area of influence for GHGs is the entire globe.

For aquatic resources, the area assessed includes the subbasins of the Savannah River and Ogeechee River Basins in the vicinity of the proposed Project site. This includes Brier Creek downstream to GA 17 and the Ogeechee River basin downstream to the Rocky Comfort Creek confluence.

For forest resources, the area assessed is the area within 75 miles of the Proposal, the estimated maximum distance of fuel transport.

For terrestrial resources, the area assessed includes the ecoregion where the facilities are to be located. Ecoregions denote areas of general similarity in the type, quality, and quantity of environmental resources. The proposed Project is within the Piedmont, Southern Outer Piedmont Ecoregion, and the site is adjacent to the Southeastern Plains, Sand Hills Ecoregion (Griffith et al. 2001). Because these natural boundaries are not always sharp, the proposed Project is considered to affect both ecoregions. The natural vegetation of the Southern Outer Piedmont ecoregion is described as loblolly-shortleaf pine forests, with some oak-hickory and oak-pine forests. Immediately to the south of Warrenton and the Proposal site, the Southeastern Plains, Sand Hills is a rolling to hilly region with thick beds of sand. Forest types in the Sand Hills are turkey oak-loblolly pine, shortleaf-loblolly pine, and oak-pine forests. Because these ecoregions cover large land areas, the condition of terrestrial resources in Warren County is emphasized. The natural boundaries are the Ogeechee River, Savannah River, the Little River Embayment of Clarks Hill Lake, and the southern boundary of the Sand Hills.

⁵⁹ 40 CFR 1508.7

For socioeconomic resources, the area assessed is the commuting distance of 60 miles with an emphasis on Warren County. Resources and issues with primarily local impacts from a cumulative standpoint, including environmental justice, land use, infrastructure, transportation, visual, noise, public health and safety, cultural resources, recreation, and waste, are assessed for Warren County.

4.4.3 Past, Present and Reasonably Foreseeable Future Actions

Past, present, and reasonably foreseeable future actions relevant to the cumulative impact analysis include:

Private agricultural and forest management. Forest and agricultural land in the area surrounding the proposed Project has been generally stable in area since the 1970s. Past agricultural exploitation occurred through the late 19th century. Widespread timber exploitation occurred in the first part of the 20th century. Following the Great Depression, much land abandonment followed and set the stage for the current period of regrowth. Forest land and associated wildlife populations have been recovering from these past intensive agricultural and forestry uses. Present actions are largely associated with occasional harvests by private landowners to the forest products industry. These occasional harvests, often on long rotations, are expected to continue.

Residential and commercial development in the Warrenton area, with associated utility lines, railroads, and roads. Although land use trends in the Piedmont show an increase in urban development, the area of the proposed Project is an exception to this trend. The past and present footprint of residential and commercial development has been small in the immediate vicinity of the Proposal. No specific large-scale reasonably foreseeable future actions have been identified, but occasional small rural subdivisions are expected to be platted, especially along major roads.

Mining. Past and present rock quarries and kaolin mines have been developed in the Warren County area. A rock quarry is located approximately two miles south of the proposed Project, and an additional rock quarry is located to the west of Exit 165 on I-20. Kaolin mines are located about 10 miles from the proposed Project in southeastern Warren County. No specific additional mine sites have been identified as reasonably foreseeable future actions.

East Warrenton Industrial Park. Located immediately to the west of the Proposal site, the industrial park is currently occupied by one industry. Approximately 50 acres remain available for development. Other sites being marketed for industrial use are at Exit 160 and Exit 165 on I-20. However, development of the Exit 160 site would require an extension of water and sewer lines approximately eight miles from Warrenton. Development of the Exit 165 site would require an extension of a sewer line

approximately seven miles from Warrenton. Water service is available at the Exit 165 site.

Warrenton Sewerage System Improvements. The City of Warrenton plans to construct a new wastewater treatment plant and rehabilitate sewers and pumping stations throughout the city. The improvements would increase the treatment capacity from 0.425 million gallons per day to 0.9 million gallons per day. The new plant will be located adjacent to the Proposal site, to the west (Figure 2-15).

Plant Washington. An 850-megawatt (MW) coal-fired power plant near Sandersville, Washington County, received permits to operate from the EPD in April 2010. The permits issued to Power4Georgians, LLC, a consortium of Georgia Electric Membership Cooperatives, include a PSD permit for air quality, an NPDES permit for water discharge, a groundwater withdrawal permit, a surface water withdrawal permit, and a notice of site suitability for a solid waste handling facility.

4.4.3.1 Cumulative Impacts on Air Resources

Air quality in the region is good and there are no nearby non-attainment areas. The air quality modeling analysis conducted for the proposed Project took into account other past, present, and reasonably foreseeable future actions within the Proposal's area of influence. The Plant Washington coal-fired power plant would add to the regional emissions, with potential cumulative effects on PM₁₀ and one-hour NO_x. The nearby rock quarries also contribute particulate matter to the air quality in the vicinity of the proposed Project. However, when all past, present and reasonably foreseeable future actions are considered, the NAAQS would still be met. Annual maximum emissions of mercury compounds from the Proposal are estimated at 11.2 pounds per year. Annual GHG emissions expressed as CO_{2e} emissions are estimated to be 1.2 million tpy. The combined impacts of past, present and reasonably foreseeable natural and manmade worldwide releases of mercury and GHGs are likely to result in increases in atmospheric levels of mercury and GHGs. However, as discussed in Section 3.1.4.3, the Proposal's contribution to global levels of mercury and GHGs is negligible.

4.4.3.2 Cumulative Impacts on Surface Water

Private agricultural and forest management have affected surface water quality, primarily through erosion and sedimentation related to crop cultivation and road building. The Proposal would use on-site erosion and sedimentation controls and is expected to have negligible effect on surface water quality. Continued widespread use of forestry BMPs is expected to have a positive impact on surface water quality compared with past activities.

The Warrenton sewage treatment plant facility and sewage upgrades would have positive effects on surface water quality by increasing the treatment levels and reducing the potential for violations, which have been a problem in the past. No other reasonable foreseeable actions with potential to impact surface water quality have been identified.

Existing commercial and industrial development projects have likely affected the supply and demand or quantity of drinking water and sewage treatment. However, dependable yields of water appear to be available for the Proposal. As indicated in Section 3, the Proposal water needs of approximately 2.0 MGD are anticipated to be met by a combination of the Thomson-McDuffie public water supply (0.5 MGD available), the City of Warrenton public water supply (0.5 MGD available), Dam 50 (0.3 MGD available), the City of Warrenton proposed wastewater treatment facility (0.2 MGD available), and the Thomson-McDuffie wastewater treatment plant (0.7 MGD available). By removing grey water from the sewage stream for process use, the Proposal would have a beneficial effect on water quality in Rocky Comfort Creek and the Ogeechee River watershed. However, the consumptive use of the water for the Proposal, combined with withdrawals for other uses, would contribute to the cumulative effect of reduced water flows in Rocky Comfort Creek, and increased demands on Clarks Hill Reservoir.

Among the reasonably foreseeable future actions in the area, Plant Washington would have the largest requirements for water, at approximately 13.6 MGD, most of which would be obtained from the Oconee River (Power4Georgians 2008). As shown in Figure 3-2, the Oconee River is in a different basin from the Proposal and outside the Proposal area of influence.

4.4.3.3 Cumulative Impacts on Geology, Soils and Farmland

The proposed Project would not affect geological resources; therefore, there are no cumulative geological effects.

Past private agricultural and forest management activities have not taken prime farmland out of production and would have no cumulative effects on prime farmland. Because Warren County is in a low-growth area it is not experiencing substantial loss of farmland, as some areas are. According to the 2007 Census of Agriculture, there are 188 farms in Warren County with a total area of 37,196 acres. The prime farmland and farmland of statewide importance affected by the Proposal, represents approximately one-tenth of one percent of the farmland in the county. Other reasonably foreseeable future actions such as development at the industrial park west of the Proposal site, may have similar small impacts on farmland.

Soil nutrient loss is an off-site indirect impact related to biomass procurement. A decision to harvest timber is made by individual landowners and is not subject RUS' control. Nevertheless, nutrient loss was raised as a concern and it has been considered

here. Private forest management occurs throughout the area within a 75-mile radius of the Proposal site, but no specific harvest actions have been identified; therefore, the issue has been analyzed generally. Forest soils support forest productivity and ecological function “through their ability to hold and supply water and nutrients, store organic material and provide habitats for plant roots and for a wide variety of soil organisms” (USDA FS 2008, p. 2-3). Forestry BMPs to protect water resources “are a set of preventative measures designed to control or reduce movement of sediment, nutrients, pesticides or other pollutants from soils to receiving water bodies” (USDA FS 2008, p. 2-54). “The best way to protect water from sedimentation is to protect soil from erosion. Because BMPs were developed and are used to protect water resources, assessment of BMPs to protect water resources automatically provides an assessment for protecting soil resources” (USDA FS 2008 p. 2-50). According to the Georgia Forestry Commission, BMP compliance has improved gradually since compliance surveys were first conducted; by 2007 99.7 percent of acres were in compliance in 2007 (GFC 2008, pp. 17-18, suggesting that cumulative effects in nutrient loss are being minimized to a large extent.

4.4.3.4 Cumulative Impacts on Groundwater

The Proposal is expected to have only very short-term and localized impacts on groundwater flow, if any, and no impacts on groundwater quality; and would therefore not contribute to cumulative groundwater impacts.

4.4.3.5 Cumulative Impacts on the Acoustical Environment

The Proposal incorporates design and equipment specifications that would reduce noise to acceptable levels. There is potential for some additional noise from the City of Warrenton’s planned wastewater treatment plant, and from development in the industrial park west of the Proposal site.

4.4.3.6 Cumulative Impacts on Biological Resources

Off-site Forests and Forest Industry

A decision to harvest timber is made by individual landowners and is not subject to the control of Oglethorpe or RUS. Any forest-specific analysis would be speculative at this time. Nevertheless, the potential for unsustainable use of forests due to intense demand for wood was raised as a concern with the proposed Project and it has been considered here. Private forest management occurs throughout the county, but no other specific harvest actions or new sources of demand in the nearby Piedmont and Sand Hills area have been identified as related to this concern; therefore, the issue has been analyzed generally. Wood obtained for Oglethorpe’s fuel supply would come from ongoing private forest harvests in the region. Private landowners would make the harvest decision. In addition to making a decision to harvest a portion of his property, a landowner selects and approves the method of harvest, whether selective or more intensive logging. The logger would then merchandise the available timber from the property, sending more

valuable logs to the pine lumber, hardwood lumber, or hardwood veneer market. Oglethorpe would not compete with these high-value wood markets. Oglethorpe would compete with the pulp and paper industry for the low-value wood market, including forest residues remaining after harvest. If authorized by the landowner, the increased demand provided by Oglethorpe could lead to more complete residue removal. This could be beneficial if the landowner intent is to prepare the site for replanting.

Standards for forest sustainability have been implemented by third party certification programs such as the Sustainable Forestry Initiative (SFI; SFI 2009) and the Forest Stewardship Council (FSC; FSC 2011). Typical sustainable practices under these programs include up-front assessment of environmental impacts, a forest management plan, assurance that the harvest within a region does not exceed the natural rate of growth (growth and drain standards), use of forestry best management practices (BMPs), reforestation standards, visual quality considerations, conservation of rare species, worker health and safety provisions, and fair labor practices.

Because much of the forest harvesting in the region is associated with large forest industries such as the pulp and paper industry, many if not most harvests within the region would comply with sustainable forestry practices. According to the Georgia Forestry Commission, BMP compliance has improved gradually since compliance surveys were first conducted in 1991: the overall statewide percentage of implementation increased from 65 percent in 1991 to 92 percent in 2007; with 86 percent of acres in compliance in 1991 and 99.7 percent in compliance in 2007 (GFC 2008, pp. 17-18).

From a cumulative effects standpoint, the Proposal, in combination with the harvests of existing industry, would increase demand for wood, but it would not compete with high-value wood for lumber. It could compete for wood residue from forest harvests, however, much low-quality, or previously unmerchantable, wood from harvests is not currently being recovered. A portion of this unmerchantable wood provides nutrients. A market for this wood would be beneficial for landowners seeking to prepare sites for replanting. The average net annual growth for a 75-mile radius of the proposed Project is 720.6 million cubic feet of wood (approximately 22.4 million green tons) while annual removals are 489.8 million cubic feet (15.3 million green tons). The wood demand for the Oglethorpe facility is expected to be 1.3 million green tons per year. Given that the forests in the region are growing between 6 and 8 million green tons more merchantable wood each year than is being utilized, and that the Proposal would utilize between 16 and 22 percent of the unutilized, new timber, it appears that the wood resources within a 75-mile radius could support the proposed Project, and other foreseeable harvesting, while being consistent with the sustainability principles of the FSC and SFI programs.

On-Site Vegetation

The majority of on-site Proposal impacts would be to pasture, which is not a native vegetation type in Georgia, and to cutover forest. Approximately 84 percent of the land in Warren County is forested, compared to about 55 percent for the Piedmont region as a whole, and the proposed Project would directly affect a negligible amount of this forest. Approximately 2.3 acres of bottomland forest would be cleared for road construction. Other activities that have cumulatively impacted bottomland forest in the past include private forest management and commercial development. While no specific forest management actions that would cumulatively affect this type of forest have been identified, it is likely that private forest management provides ongoing impacts to bottomland hardwood forests in the Piedmont and Sand Hills ecoregions. However, these activities do not generally change the bottomland hardwood forest type, as forest management promotes regeneration. In addition, bottomland hardwood is a common vegetation type in Warren County and adjoining areas. Commercial and industrial development has also likely impacted small areas of bottomland hardwood in Warren County.

Wetlands and Other Waters of the U.S.

Wetlands and streams are routinely impacted by construction actions in the USACE Savannah District, although there are no reasonably foreseeable actions currently proposed in the vicinity of the Proposal. Past actions in nearby watersheds causing impacts to wetlands and streams have included construction of roads, golf course fairways, stormwater impoundments, and pond dams (<https://sasweb.sas.usace.army.mil/jpn/>). These construction actions have impacted wetlands, open water, and streams in the Savannah District. Mitigation for impacts would result in a net increase in wetland and stream functions and values. The Standard Operating Procedure for Compensatory Mitigation requires that at least 50 percent of the wetland mitigation credits be generated from activities that result in a net gain in acres or aquatic function and that at least 50 percent of stream mitigation credits be generated from stream or riparian restoration.

Floodplains

The Proposal would not take place in the floodplain or indirectly contribute to floodplain development; therefore, it would not contribute to cumulative effects on floodplains.

Wildlife

The Proposal would primarily directly affect low quality wildlife habitat consisting of pasture and cutover forest. Residential and commercial development has eliminated small acreages of higher-quality wildlife habitat, while private agricultural and forest management have created better wildlife habitat conditions than are present on-site. There will be indirect effects on wildlife resulting from harvesting wood for fuel for the Proposal, plus on-going harvesting for other purposes. However, as explained above,

the Proposal and other reasonably foreseeable future actions are not expected to impact the sustainability of forests, including the use as wildlife habitat.

Sensitive Species

Because the Proposal does not contain any habitat for state or federally-listed species and would not directly or indirectly impact any sensitive species, the Proposal would not contribute to cumulative impacts on listed species.

4.4.3.7 Cumulative Impacts on Land Resources

The Proposal is consistent with the character of the east Warrenton area, and adjacent to an industrial park. The use of the site for the Proposal would be compatible with existing zoning. Therefore, the proposed Project would not contribute to adverse cumulative land use impacts.

4.4.3.8 Cumulative Impacts on Visual Resources

The Proposal would introduce new elements into the predominantly agricultural and forested local landscape of Warren County. However, because the Proposal would be located adjacent to an area of industrial development, the overall visual contrast in the landscape would be reduced. Past and present elements that have been introduced are found in the nearby industrial park and town of Warrenton. Reasonably foreseeable future actions include the City of Warrenton wastewater treatment plant and industries that may locate in the industrial part just west of the Proposal site. These will be compatible with the Proposal.

4.4.3.9 Cumulative Impacts on Transportation

The highway capacity analysis takes into account past or present actions which have generated traffic. Historical trends for traffic some of the roads in the immediate Warrenton area including U.S. 278 that provides access to the VFW Road leading to the Proposal have demonstrated a decrease in traffic between 2003-2008, while other through roads, such as S.R. 12 have experienced increased traffic. No major reasonably foreseeable future traffic-generating actions have been identified in the county that would contribute to increased auto or truck traffic on local or state highways in the Warrenton area.

4.4.3.10 Cumulative Impacts on Historic/Cultural Properties

The Proposal is not expected to have any impacts on historic or cultural properties, and therefore would not contribute to cumulative impacts.

4.4.3.11 Cumulative Impacts on Public Health and Safety

No reasonably foreseeable future actions that would introduce public health and safety concerns into the Warrenton area have been identified. The Proposal would have infrastructure on-site to address the facility needs and would not create additional demands that would cause adverse cumulative effects on community health and safety services.

4.4.3.12 Cumulative Impacts on Waste and Hazardous Waste Management

Landfill capacities in the region are adequate to handle the waste from the Proposal. No reasonably foreseeable future actions would adversely impact landfill capacity.

4.4.3.13 Cumulative Socio-Economic Impacts

Socioeconomic Resources

As many as 600 construction workers would be needed during peak periods of a 35-month construction schedule. Approximately 15 percent of the construction work force would be expected to come from within a 60-mile commuting radius, and the remainder would be non-local workers expected to require temporary housing, most likely in Augusta. Approximately 22 of the 44 employees needed for plant operation would be expected to come from existing households. Indirect employment numbers in the forestry operations industry would be expected to be approximately 88 employees. These employment numbers would create approximately 36 new indirect jobs for the life of the project. Additional government revenues from taxes and fees would result from these jobs. These temporary and permanent employment levels would create additional demand for housing and public services, but would not create undue strain on existing community facilities in either the Warren County or Augusta area.

No reasonably foreseeable future agricultural and forestry actions have been identified that would add substantially to the direct and indirect employment increases generated by the proposed Project. The planned Warrenton sewage treatment facility would also likely add a few additional jobs because it will be larger than the existing plant. The proposed Plant Washington coal-fired facility near Sandersville would employ up to 1,600 temporary construction workers and require a permanent workforce of 120 to 130; however, it is outside the expected socio-economic area of influence. The Proposal would add generally positive socioeconomic impacts and would not contribute to any negative socioeconomic consequences such as losses of jobs in other industries.

Environmental Justice

The Proposal would not have any “disproportionately high and adverse impacts” on minority or low-income communities, and therefore would not contribute to cumulative impacts.