CHOCTAW COUNTY, AL

Bioeconomy Development Opportunity Zone

RATING GRADE: 'A'

Date of Issue: July 10, 2026

A
High Quality

Rating Parameters:

Category	Rated Quantity	Delivered Price	Supply Zone Size
Pulpwood	268,000 bdt/yr	$50-$60/bdt	75-mi drive
Forest Residues	293,500 bdt/yr	$70-$80/bdt	distance from
Sawmill Residues	479,000 bdt/yr	$40-$80/bdt	Butler, AL

BDO ZONE ASSETS

- The region features a deeply established forest products supply chain.
- Underutilized forest residues represent significant feedstock opportunity, with logging slash currently piled and burned at the roadside due to a lack of local markets.
- 115 kV distribution substation located directly beside site, and on-site natural gas and water mains provide strong utility foundation for industrial development.

BDO ZONE LIABILITIES

- Large number of competitors with established relationships with existing suppliers of woody biomass.
- The regional supply chain faces an impending shortage of skilled equipment operators for logging operations due to an aging workforce.
- Forest residue supply will require logging contractors to purchase chipping or grinding units.
- Site not functionally rail-served; the nearest interstate highway access is approx. 37-39 miles away.

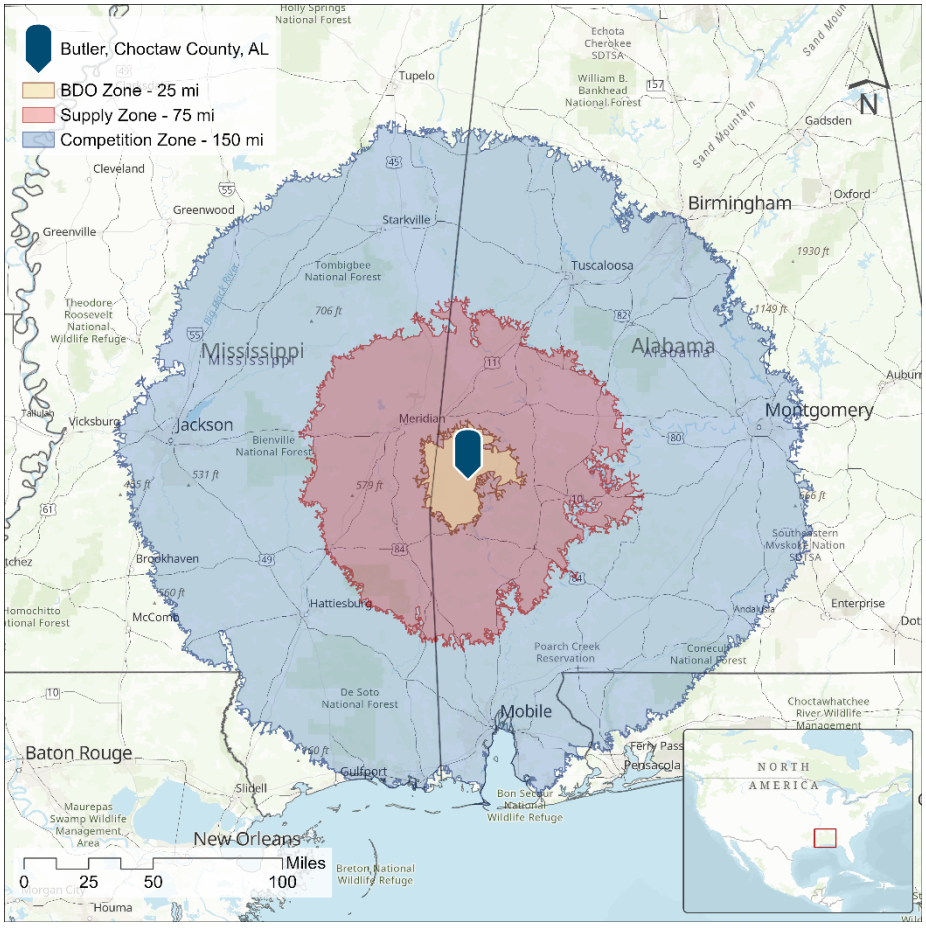
RATING GRADE

The Choctaw County, AL, Bioeconomy Development Opportunity Zone, is rated 'A', or 'low' risk.

Risk Rating Grades are defined as follows: AAA (extremely low), AA (very low), A (low), BBB (low-moderate), BB (moderate), B (moderate-high), and C (high).

'A' ratings denote high prospective viability of Feedstock Supply and Infrastructure and low expectations of default risk in the Zone. Capacity to support new biobased plant operations is considered strong. This capacity may, nevertheless, be more vulnerable to adverse weather, supply chain, economic, or infrastructure conditions than is the case for higher ratings.

BUTLER, ALABAMA BDO ZONE



ANALYST NOTES

The Choctaw County BDO Zone, which spans west-central Alabama and east-central Mississippi, has a Supply Zone that is centered in Butler, AL and is approximately 6.6 million acres of land, of which 4.2 million acres is timberland. The Zone serves as a potential location to accommodate large-scale biomass projects due to the commercial availability of sustainable woody biomass resources.

Of the ~6.3 million bdt/yr of woody biomass generated within a 75-mile drive distance from Butler, AL, a total of about 1.0 million bdt/yr of wood fiber is estimated to be available at low risk. This includes 479,000 bdt/yr of sawmill residues, 268,000 bdt/yr of pulpwood, and 293,500 bdt/yr of forest residues. The average delivered price for sawmill residues is about $40 to $80/bdt. The delivered price for pulpwood is around $50 to $60/bdt. The delivered pricing for forest residues is expected to be $70 to $80/bdt.

High-quality sawmill residues, such as clean chips and shavings, experience intense competition and the majority of this material generated in the Supply Zone is under contract (typically for 1-3 years). Pulpwood in the Supply Zone also experiences heavy pressure from existing facilities. Finally, in-woods forest residues represent a significant, untapped feedstock resource. Currently, forest residues and logging slash are rarely recovered by local crews; instead, the standard practice is simply to pile and burn these materials at the roadside due to a lack of existing local markets.

BDO ZONE ASSETS

The area in and around Choctaw County features a well-established forest products supply chain supported by a highly favorable land ownership structure. The vast majority of standing timber volume (97%) is located on private land. This dense private ownership ensures that the local wood supply remains high.

Annual sawmill capacity in the Supply Zone has grown from 1,057 million board feet (MMBF) in 2013 to 2,057 MMBF in 2026. Capacity peaked in 2021 at 2,117 MMBF. The 17 currently active major sawmills in the area have a collective capacity of approximately 2.5 million bdt/yr of sawmill residues. However, the market for sawmill residues is highly competitive, with 12 pulp and paper mills, 9 pellet mills, and one OSB mill contending for this resource.

Concurrently, the Supply Zone offers a massive surplus of underutilized forest residues, creating an ideal feedstock environment for a new woody biomass operation. Local prices have remained depressed and stagnant, with some nearby pulp and paper mills paying as little as ~$52/bdt to local loggers. Furthermore, while clean sawmill residues are often locked into 1–3-year contracts, in-woods forest residues represent a significant, untapped resource in the local supply chain. Currently, forest residue is rarely recovered by logging crews in the area; instead, the standard practice is to pile and burn the logging slash at the roadside. This abundant and unrecovered logging slash ensures that a new facility in the Choctaw County area would have reliable access to diverse and low-cost wood fiber.

BDO ZONE LIABILITIES

The Supply Zone is highly saturated with established competitors, including large pulp and paper mills, wood pellet plants, and an OSB mill. These competitors have historical and personal relationships with local logging contractors and sawmills. Because of these established ties and the market influence that large integrated facilities hold, suppliers may prioritize existing users over new entrants.

That said, suppliers do seek diversification. A new entrant offering fair and competitive pricing could secure a portion of available material. While most high-quality secondary biomass is already locked into 1–3-year supply agreements with existing facilities, some material does operate on the spot market.

Historically, there has been a steady increase of competitor intake and the number of competitor facilities since around 2018. This regional demand is expected to continue to increase with the construction of an OSB facility in Noxubee County, Mississippi, which is projected to have a total capacity of 725 MMSF. Although these trends indicate a healthy, mature, and well-established supply chain, the resulting increased demand may result in new projects having difficulty sourcing material, especially clean sawmill residues and pulpwood.

The regional supply chain is severely constrained by an impending shortage of skilled equipment operators and log truck drivers, driven primarily by an aging workforce. Industry data indicate that approximately 30 percent of log truck drivers are over the age of 55, and the sector is struggling to recruit younger workers to replace these retiring professionals. This recruitment challenge is exacerbated by prohibitively high commercial trucking insurance premiums and strict insurance requirements, which generally mandate that new drivers be at least 25 years old and possess multiple years of specific log-hauling experience before they can be insured.

While state-subsidized workforce development initiatives are actively attempting to address these gaps, their current impact is limited.

INFRASTRUCTURE PROFILE

The Choctaw Industrial Park is a 140-acre, Light Industrial/Forestry-zoned site located on US Highway 10 in Butler, Alabama, within a Federal Opportunity Zone. The site benefits from strong on-site utilities, including a 115 kV distribution substation located directly adjacent, a 4-inch natural gas main, and a 6-inch water main, with sewer service available within a few hundred yards. The Butler-Choctaw County Airport sits directly across the highway. Key infrastructure limitations include the absence of functional rail service—despite rail infrastructure existing in the northern part of the county—and a 37–39-mile distance to the nearest interstate highway. Fiber optic service is not yet on-site but is anticipated in the near term. No formal environmental assessments have been completed, though local officials report no known wetlands, floodplain, or historical concerns on the property.

SCORING & RATING METHODOLOGY

In assessing the biomass supply chain risk for the Bioeconomy Development Opportunity (BDO) Zone, 75 Risk Indicators from the US Standards for Biomass Supply Chain Risk (BSCR) were applied. These BDO Zone Risk Indicators are the subset of BSCR Risk Indicators applicable to evaluating feedstock risk within a BDO Zone.

- The BDO Zone is a 25-mile drive distance from the center point, which represents the siting area for future biomass projects and is where the industrial site is located.
- The Supply Zone is a 75-mile drive distance from the center point, where feedstock availability was assessed.
- The Competition Zone is a 150-mile drive from the center point, where consumers can compete for feedstock generated in the Supply Zone.

Feedstock quantities are expressed in bone dry tons per year (bdt/yr), while feedstock costs are expressed in United States dollars (USD). Maximum transport distance is based on a 75-mile driving distance from the center point (Butler, AL).

The BDO Zone rating is based on an aggregation of the scores assigned to each BDO Zone Risk Indicator (RI) assessed in this report. First, each BDO Zone Risk Indicator is given a **Raw Risk Likelihood (RRL)** score, which denotes the likelihood of a risk to future BDO Zone projects due to the Risk Indicator. RRL Scores are scaled as either very low (2), low (4), medium (6), high (8), or very high (10).

Each BDO Zone Risk Indicator is given a **Raw Risk Impact (RRI)** score, which denotes the impact on a future BDO Zone project due to the Risk Indicator. RRI scores are scaled as either very low (2), low (4), medium (6), high (8), or very high (10). Impact level scores are based on the impact level of a risk on the successful development and deployment of a BDO Zone project with no mitigation measures.

The **Gross Risk Indicator (GRI)** score is then calculated as the product of the RRL and the RRI scores. For example, if an indicator is scored at an RRL of 2 and an RRI of 8, then the GRI for this risk indicator is 2 X 8 = 16.

If the analyst deems that a typical bio-based project could implement economically reasonable measures or best practices that mitigate the likelihood (RRL), the impact (RRI), or both, then the GRI will be notched accordingly.

The **Loaded RI** score for each Risk Indicator is the product of the GRI score and any notched scores. Loaded RIs are the final score for a Risk Indicator.

Loaded RI scores of 4 or less are deemed very low risk; scores between 5 and 16 are deemed low risk; scores between 17 and 36 are deemed medium risk; scores

between 37 and 64 are deemed high risk; and scores of 65 and greater are deemed very high risk.

The total risk rating for the BDO Zone is the average of all Loaded RI scores and Infrastructure Indicators. The BDO Zone score for Choctaw County, AL is ***16.6 out of 100, resulting in an 'A' designation.***

All scoring and rationale for each Risk Indicator are provided in Section D.



PROJECT TEAM

SENIOR ANALYST
Jordan Goodnough
Ecostrat Inc.
jordan.goodnough@ecostrat.com

INFRASTRUCTURE ANALYST
Jaidan Hunt
Manager of Advisory Operations
Ecostrat Inc.
jaidan@ecostrat.com

TECHNICAL CONTACT
Marcin Lewandowski
Senior Director, Operations & Risk
Ecostrat Inc.
marcin@ecostrat.com

BUSINESS CONTACT
Jordan R. Solomon
President & CEO
Ecostrat Inc.
jordan.solomon@ecostrat.com

SECTION A: RISK INDICATOR SUMMARY

Figure A-1. All Risk Indicators Sorted by Risk Level

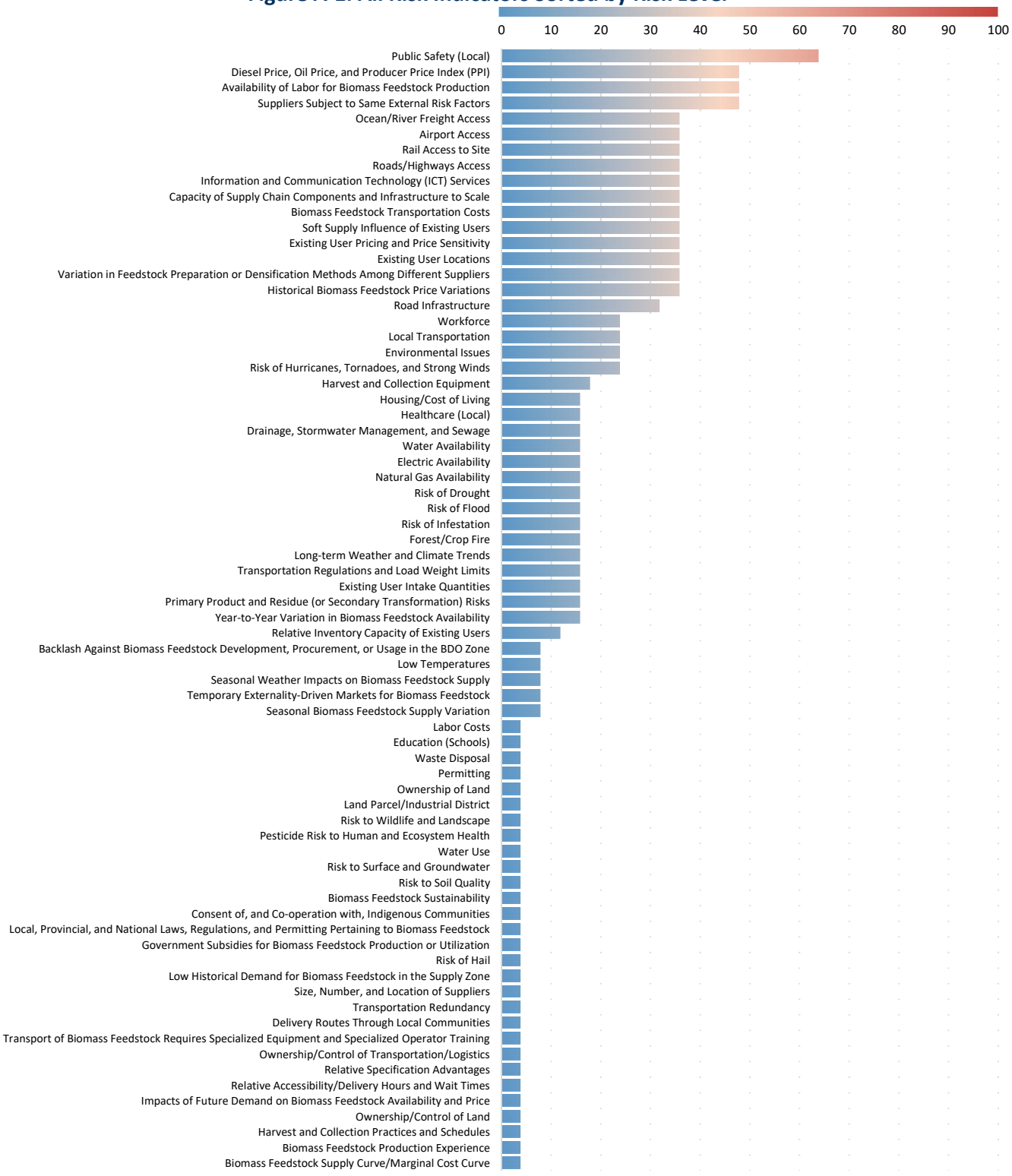


Table A-1. Risk Indicators and Associated Scores

Feedstock Supply Chain Risk Indicators	Raw Risk Likelihood	Raw Risk Impact	Gross Risk Indicator	Mitigation /Notching	Loaded RI Score
Category 1.0: Supply Chain Risk					
1.1 Risk Factor: Quantity and Delivered Cost of Available Biomass Feedstock					
1.1.1 Biomass Feedstock Supply Curve/Marginal Cost Curve	2	2	4	NN	4
1.1.2 Seasonal Biomass Feedstock Supply Variation	4	4	16	50%	8
1.1.3 Year-to-Year Variation in Biomass Feedstock Availability	4	4	16	NN	16
1.1.4 Historical Biomass Feedstock Price Variations	6	6	36	NN	36
1.2 Risk Factor: Harvest and Collection Risk					
1.2.1 Biomass Feedstock Production Experience	2	2	4	NN	4
1.2.2 Primary Product and Residue (or Secondary Transformation) Risks	4	4	16	NN	16
1.2.3 Harvest and Collection Practices and Schedules	2	2	4	NN	4
1.2.4 Harvest and Collection Equipment	6	6	36	50%	18
1.2.5 Ownership/Control of Land	2	2	4	NN	4
1.2.6 Variation in Feedstock Preparation or Densification Methods Among Different Suppliers	6	6	36	NN	36
1.3 Risk Factor: Existing Users					
1.3.1 Existing User Locations	6	6	36	NN	36
1.3.2 Existing User Intake Quantities	4	4	16	NN	16
1.3.3 Existing User Pricing and Price Sensitivity	6	6	36	NN	36
1.3.4 Impacts of Future Demand on Biomass Feedstock Availability and Price	2	2	4	NN	4
1.3.5 Soft Supply Influence of Existing Users	6	6	36	NN	36
1.3.6 Temporary Externality-Driven Markets for Biomass Feedstock	4	2	8	NN	8
1.3.7 Relative Inventory Capacity of Existing Users	6	2	12	NN	12
1.3.8 Relative Accessibility/Delivery Hours and Wait Times	2	2	4	NN	4
1.3.9 Relative Specification Advantages	2	2	4	NN	4
1.4 Risk Factor: Transportation					
1.4.1 Biomass Feedstock Transportation Costs	6	6	36	NN	36
1.4.2 Ownership/Control of Transportation/Logistics	2	2	4	NN	4
1.4.3 Transport of Biomass Feedstock Requires Specialized Equipment and Specialized Operator Training	2	2	4	NN	4
1.4.4 Delivery Routes Through Local Communities	2	2	4	NN	4
1.4.5 Transportation Regulations and Load Weight Limits	4	4	16	NN	16
1.4.6 Road Infrastructure	8	4	32	NN	32
1.4.7 Transportation Redundancy	2	2	4	NN	4
1.5 Risk Factor: Risks Related to Supply Chain Resiliency					
1.5.1 Size, Number, and Location of Suppliers	2	2	4	NN	4
1.5.2 Suppliers Subject to Same External Risk Factors	6	8	48	NN	48
1.6 Risk Factor: Biomass Feedstock Scale-up					
1.6.1 Capacity of Supply Chain Components and Infrastructure to Scale	6	6	36	NN	36
1.6.2 Availability of Labor for Biomass Feedstock Production	6	8	48	NN	48
1.6.3 Low Historical Demand for Biomass Feedstock in the Supply Zone	2	2	4	NN	4
1.7 Risk Factor: Climate and Natural Risks					
1.7.1 Seasonal Weather Impacts on Biomass Feedstock Supply	4	4	16	50%	8
1.7.2 Long-term Weather and Climate Trends	4	4	16	NN	16
1.7.3 Forest/Crop Fire	4	4	16	NN	16
1.7.4 Risk of Infestation	4	4	16	NN	16
1.7.5 Risk of Hail	2	2	4	NN	4
1.7.6 Risk of Flood	2	8	16	NN	16
1.7.7 Risk of Drought	4	4	16	NN	16
1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds	6	4	24	NN	24
1.7.9 Low Temperatures	2	4	8	NN	8
1.8 Risk Factor: Non-Weather Based Externalities					
1.8.1 Diesel Price, Oil Price, and Producer Price Index (PPI)	6	8	48	NN	48
1.8.2 Currency Risk	NR	NR	NR	NR	NR
1.8.3 Border Risk	NR	NR	NR	NR	NR
1.9 Risk Factor: Political and Social					
1.9.1 Government Subsidies for Biomass Feedstock Production or Utilization	2	2	4	NN	4
1.9.2 Local, Provincial, and National Laws, Regulations, and Permitting Pertaining to Biomass Feedstock	2	2	4	NN	4
1.9.3 Backlash Against Biomass Feedstock Development, Procurement, or Usage in the BDO Zone	4	2	8	NN	8
1.9.4 Consent of, and Co-operation with, Indigenous Communities	2	2	4	NN	4
1.9.5 Food Security Concerns	NR	NR	NR	NR	NR
1.10 Risk Factor: Sustainability and Environmental Concern					
1.10.1 Biomass Feedstock Sustainability	2	2	4	NN	4

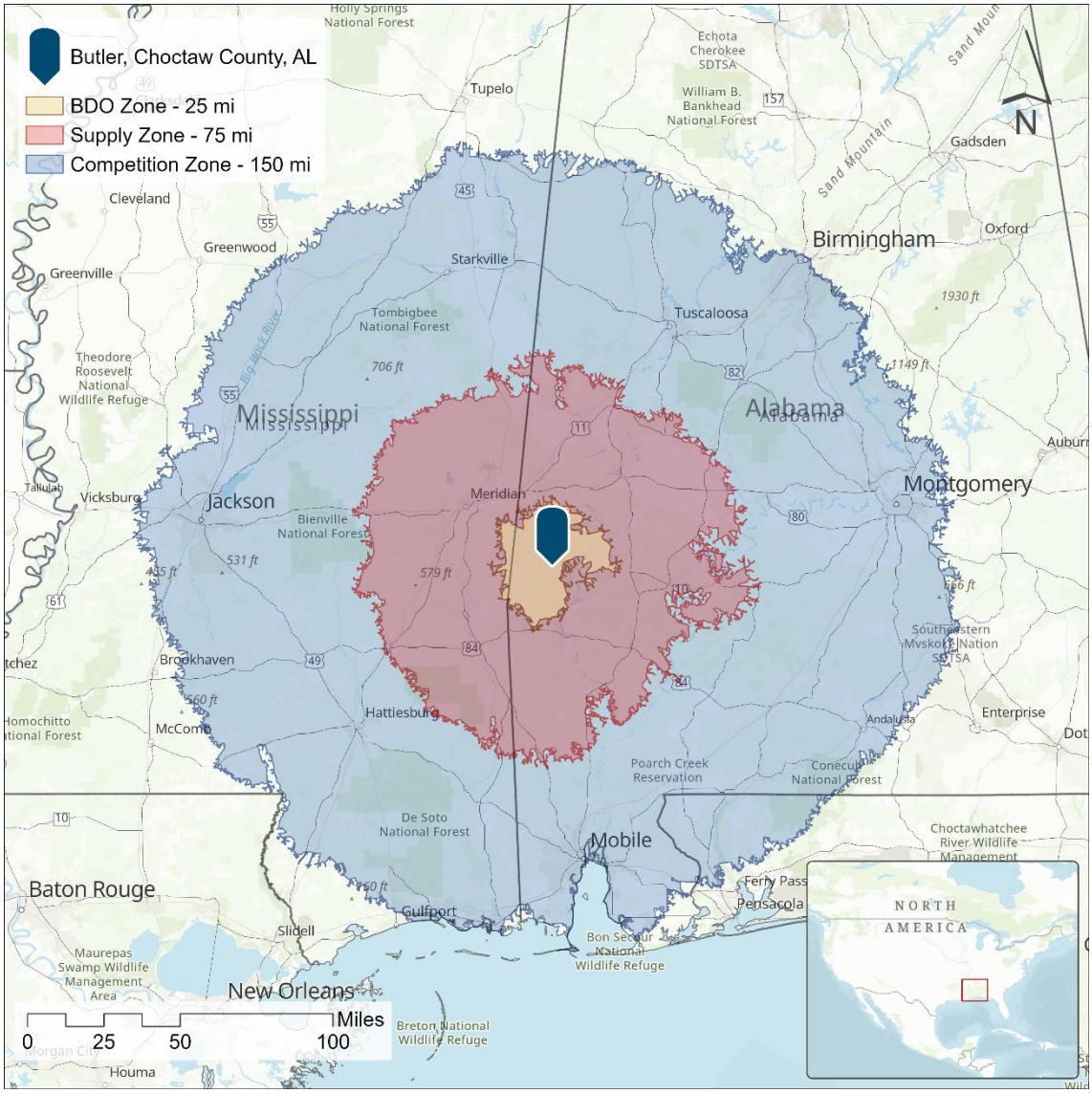
1.10.2 Risk to Soil Quality	2	2	4	NN	4
1.10.3 Risk to Surface and Groundwater	2	2	4	NN	4
1.10.4 Water Use	2	2	4	NN	4
1.10.5 Pesticide Risk to Human and Ecosystem Health	2	2	4	NN	4
1.10.6 Risk to Wildlife and Landscape	2	2	4	NN	4
Category 2.0: Infrastructure					
2.1 Risk Factor: Physical Infrastructure					
2.1.1 Land Parcel/Industrial District	2	2	4	NN	4
2.1.2 Ownership of Land	2	2	4	NN	4
2.1.3 Permitting	2	2	4	NN	4
2.1.4 Environmental Issues	6	4	24	NN	24
2.2 Risk Factor: Utilities					
2.2.1 Natural Gas Availability	4	4	16	NN	16
2.2.2 Electric Availability	4	4	16	NN	16
2.2.3 Water Availability	4	4	16	NN	16
2.2.4 Drainage, Stormwater Management, and Sewage	4	4	16	NN	16
2.2.5 Waste Disposal	2	2	4	NN	4
2.2.6 Information and Communication Technology (ICT) Services	6	6	36	NN	36
2.3 Risk Factor: Transportation/Logistics					
2.3.1 Roads/Highways Access	6	6	36	NN	36
2.3.2 Rail Access to Site	6	6	36	NN	36
2.3.3 Airport Access	6	6	36	NN	36
2.3.4 Ocean/River Freight Access	6	6	36	NN	36
2.4 Risk Factor: Social Infrastructure					
2.4.1 Healthcare (Local)	4	4	16	NN	16
2.4.2 Education (Schools)	2	2	4	NN	4
2.4.3 Local Transportation	6	4	24	NN	24
2.4.4 Public Safety (Local)	8	8	64	NN	64
2.4.5 Housing/Cost of Living	4	4	16	NN	16
2.5 Risk Factor: Labor					
2.5.1 Workforce	6	4	24	NN	24
2.5.2 Labor Costs	2	2	4	NN	4
				Average	**16.6**

SECTION B: BIOMASS AVAILABILITY AND PRICING

OVERVIEW

The assessment of available forest biomass for a prospective project in Butler, Alabama incorporates three distinct zones (Map B-1). The BDO Zone represents the area defined by a 25-mile drive distance from Butler, wherein a new biomass project could be positioned to access rated quantities of biomass. The Supply Zone encompasses the area within a 75-mile drive distance from Butler, from where biomass will be sourced. The Competition Zone is defined by a 150-mile drive distance from Butler, where biomass consumers/competitors are situated that impact biomass availability within the BDO Zone.

Map B-1. BDO, Supply, Competition Zones, and Center Point (Butler, AL)



The Supply Zone spreads over two states, Alabama and Mississippi. Of approximately 6.6 million acres of land within the Supply Zone, 4.2 million acres comprise timberland. The standing tree volume of hardwood and softwood tree species in the Supply Zone is equally distributed (50%/50%). The predominant hardwood species include oaks (19%), sweetgum (8%), yellow poplar (3%), and red maple (2%). The softwood species consist mostly of loblolly pine (44%).[1] Forestry represents a primary economic contributor within the Supply Zone with 17 operational sawmills. The total sawmilling capacity in the Supply Zone has increased in the past decade significantly and seems to maintain a strong economic influence in the Supply Zone. Also, 22 facilities in the Competition Zone compete for the biomass generated in the Supply Zone.

The Supply Zone has experienced a significant increase of total standing merchantable timber inventories by 41.7 million bdt (19%) and mostly in softwoods by 27 million bdt (29%), between 2014 and 2023. A similar trend was observed in standing pulpwood size[2] tree inventories (Figures E-1 and E-2). The vast majority of standing timber volume (97%) is located on privately owned forests (Figure E-3). All timber harvests occur in privately owned forests. Timber harvests have increased between 2020 and 2023, especially in softwoods, but have not reached the pre-pandemic levels, such as those in 2014 of 5.6 million bdt (Figure E-4).[3] Consequently, great potential exists to increase timber harvesting in the Supply Zone; however, significant investments in sawmilling and harvesting equipment would be necessary.

EVALUATED FEEDSTOCKS

The three rated biomass types are:

Pulpwood: Pulpwood Harvest consists of trees with diameters at breast height (DBH) between 5.0 inches and 10.9 inches generated during sawtimber logging. Pulpwood Logs consist of the upper-stem biomass from sawtimber trees that do not meet sawmill specifications. Also, potential harvest of pulpwood size trees during thinning operations was included.

Forest residues: Sections of tree stems that cannot be processed into merchantable logs (i.e., sawlogs or pulp logs); these include stem tops and large branches.

Sawmill residues: Byproducts of sawmill operations (wood chips, sawdust, shavings, and bark/hog fuel) generated from converting sawlogs into finished wood products, such as lumber and engineered wood.

The rated feedstock quantities presented herein were determined through estimation of potentially harvestable amounts of each biomass type in the Supply Zone, with consideration of anticipated demand for biomass in the Competition Zone. A Biomass Availability Multiple (BAM) has been applied to account for the overarching assumptions, uncertainties in underlying data, models, and future operating conditions. The resulting rated quantities represent conservative estimates of biomass availability for new bio-projects. Once supply chains are developed, additional quantities of biomass are expected. Price ranges were established through market analysis and outreach in the Competition Zone and represent current expected delivered prices that a new project will need to pay to secure the rated quantities.

[1] apps.fs.usda.gov/fiadb-api/evalidator
[2] Trees with diameters at breast height (DBH) between 5.00 in and 10.9 in
[3] Ibid.

SUPPLY ANALYSIS

Pulpwood

The Supply Zone produces mostly softwood sawlogs which are transported to 17 sawmills located within 75 miles drive distance from Butler. Full stem harvesting and transportation constitute the predominant logging practice in the region.

Figure B-1. Average Net Growth, Average Annual Removals, and Growth to Drain Ratios for All-DBH Classes (left) and Pulpwood DBH (right) Classes in the Supply Zone (2014-2023)[4]

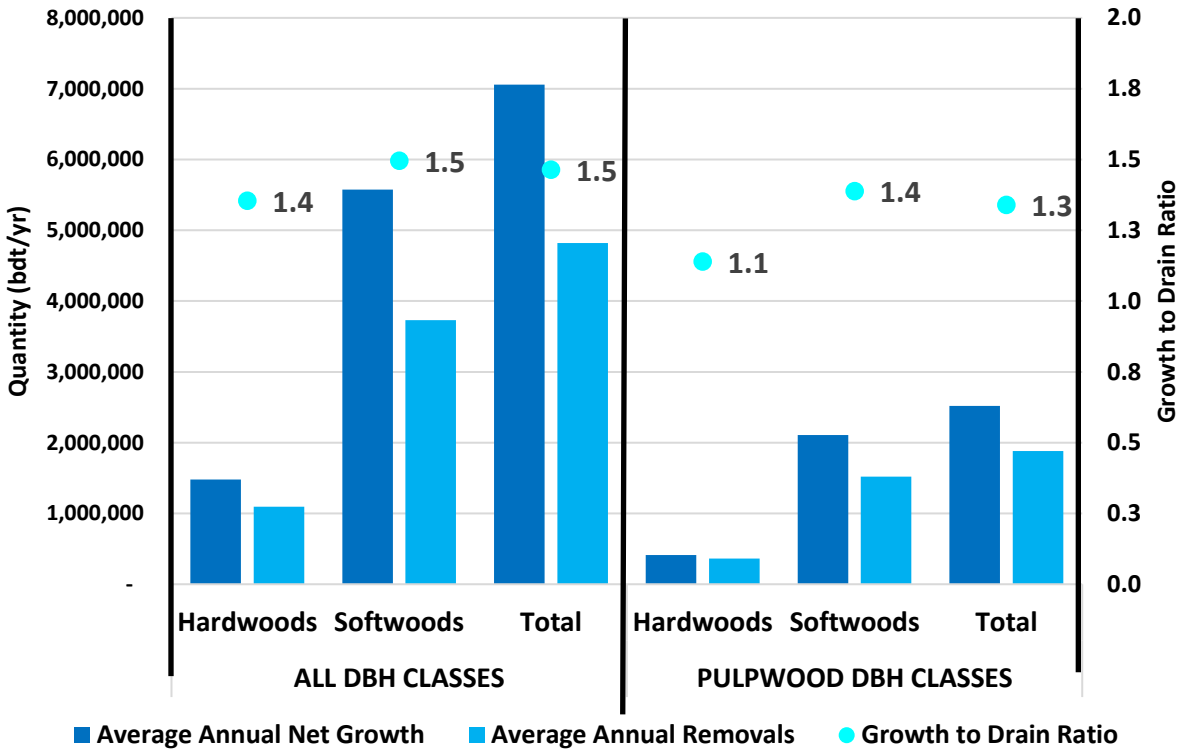


Figure B-1 illustrates the average annual net growth and removals per major species categories (hardwoods and softwoods) for all DBH classes (left) and pulpwood DBH classes (right). Overall, the forest stands in the Supply Zone exhibit substantial annual net growth (7 million bdt/yr), of which two-thirds (4.8 million bdt/yr) is harvested. The growth-to-drain (GTD) ratio[5] of 1.5 indicates a sustainable harvest level and an opportunity to increase the timber harvest in the Supply Zone. Pulpwood values suggest a similar distribution of growth and harvest values, with a sustainable GTD ratio of 1.3. This GTD ratio indicates that potentially 410,000 bdt/yr of standing pulpwood may be available to a new project.[6]

The FIA data estimated that approximately 1.9 million bdt/year of pulpwood size trees are harvested on average. Additionally, FIA data indicates that approximately 412,000 bdt/yr of pulpwood logs[7] are generated through commercial

[4] apps.fs.usda.gov/fiadb-api/evalidator. Variables 2636: Average annual net growth of aboveground biomass of trees (at least 5 inches d.b.h./d.r.c.), in dry short tons, on timberland; 574049: Average annual removals of merchantable bole bark and wood biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland; 574027: Average annual mortality of merchantable bole bark and wood biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland

[5] The ratio between the annual net growth and removals. A GTD > 1.1 indicates sustainable removals below the net growth measured in a forest area

[6] Estimated based on a potential increase in pulpwood harvesting from GTD ratio of 1.3 to a GTD ratio of 1.1.

[7] apps.fs.usda.gov/fiadb-api/evalidator, Variable 574054: Average annual removals of merchantable bole bark and wood biomass above the sawlog of sawtimber trees, in dry short tons, on timberland

harvesting operations in the Supply Zone. A pulp log is a log that is sorted during log processing operations as unsuitable for sawmilling or veneer production due to its size, straightness, knots, rot, or other defects. Table B-1 summarizes the total annual pulpwood availability in the Supply Zone and indicates that an average of 2.7 million bdt/year of pulpwood could be generated in the Supply Zone.

Table B-1. Annual Pulpwood Production Estimates

Source	Quantity (bdt/yr)
Pulpwood Harvest	1,880,800
Pulpwood Logs	412,000
Potential Thinnings	410,000
Total Pulpwood Available	**2,702,800**

Forest residues

The FIA data estimates that, on average, approximately 1,174,000 bdt/yr of forest residues[8] are generated in the Supply Zone from harvesting operations. Local forestry experts indicated that forest residues are either piled and burnt or spread throughout the harvesting area.

Sawmill residues

17 sawmills in the Supply Zone, both softwood and hardwood mills (Map B-2), range in lumber production capacity between 8 and 37 MMBF/yr for hardwood mills and 20 and 350 MMBF/yr for softwood mills. Four large sawmills (170-240 MMBF/yr) are located within 50 miles from Butler, AL. Our analysis estimated that approximately 2.5 million bdt/year of sawmill residues are generated by all 17 sawmills.[9] (Table B-2).

[8] apps.fs.usda.gov/fiadb-api/evalidator, Variables: 574065 - Average annual removals of top and limb bark and wood biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on timberland. 574040 - Average annual mortality of top and limb bark and wood biomass of growing-stock trees (at least 5 inches d.b.h.), in dry short tons, on forest land. Value rounded to the nearest 1,000 bdt

[9] Ecostrat sawmill residue calculator. Values are rounded.

Map B-2. Map of operational sawmilling facilities in the Supply Zone.

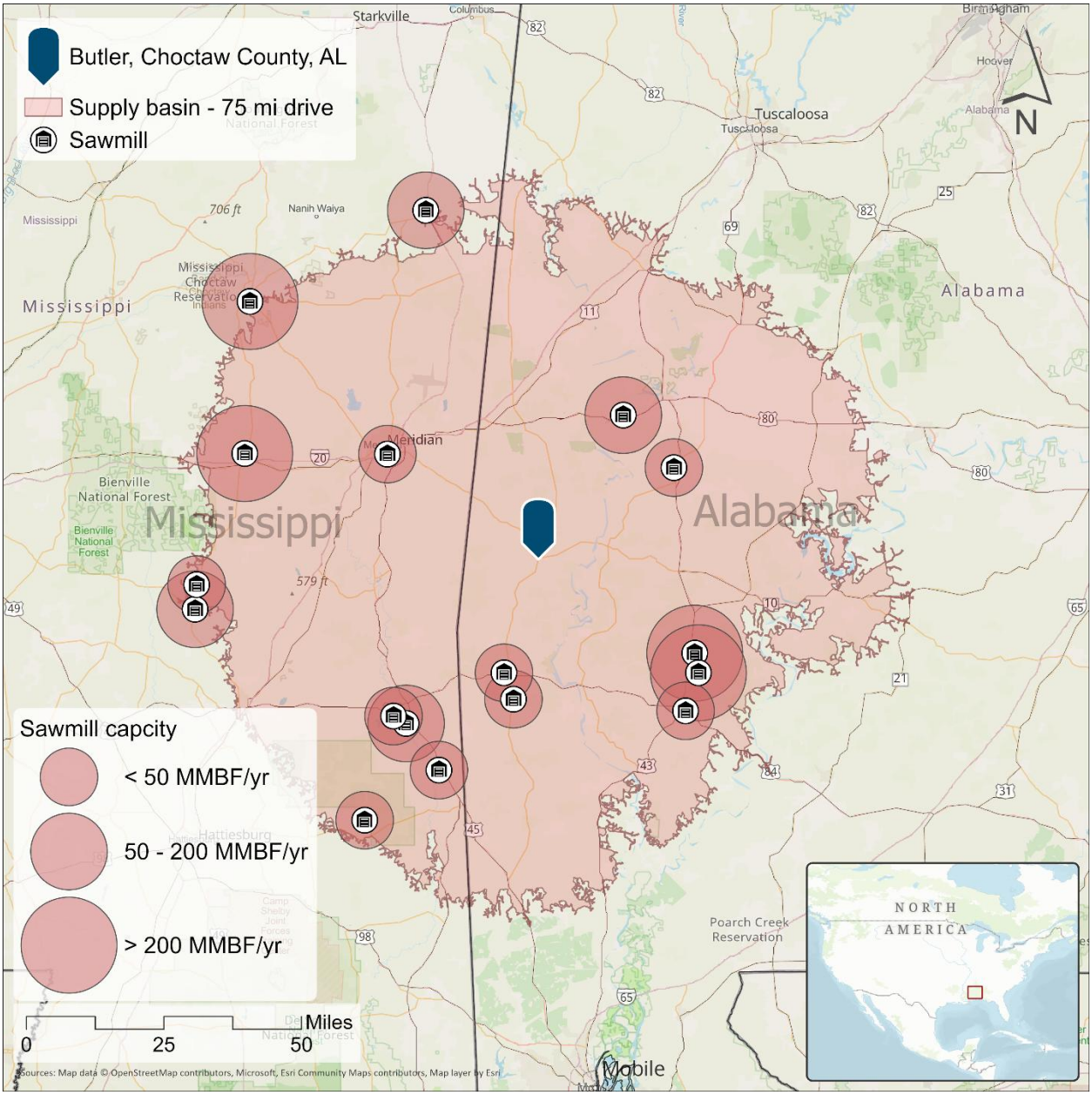
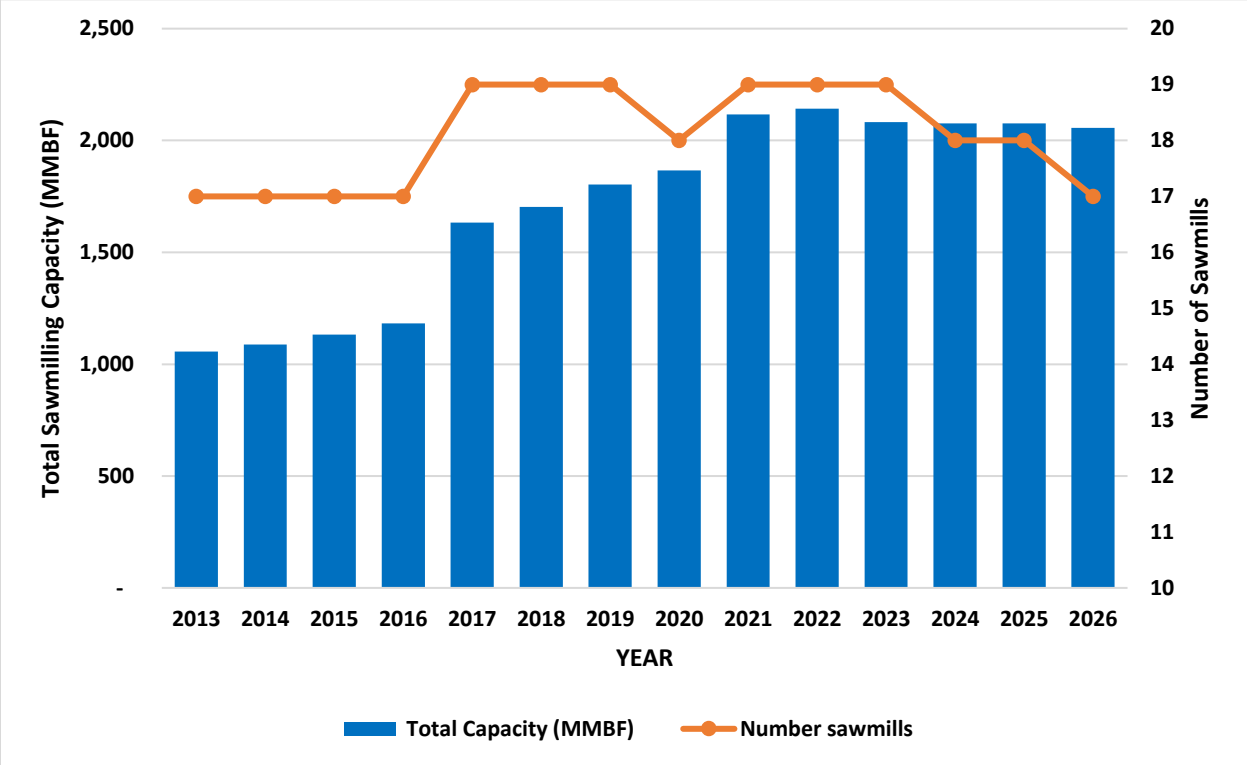


Table B-2. Sawmill Residue Production and Availability Estimates in the Supply Zone

Sawmill Residue	Chips	Sawdust	Shavings	Bark	TOTAL
Estimated Quantity (bdt/yr)	1,442,000	219,000	295,000	502,000	**2,458,000**

Figure B-2 indicates an increase of sawmilling capacity in the Supply Zone since 2013, albeit with recent sawmill closures. Outreach indicated that most of the sawmill chip is currently under 1–3-year contracts with nearby competitors (pulp mills and pellet mills). Sawdust and bark are usually traded on the spot market.

Figure B-2. Historical sawmilling capacity (MMBF) and number of sawmills in the Supply Zone.[10]



COMPETITION ANALYSIS

Twenty-two operational consumers of biomass exist inside the Competition Zone (Map B-3): 12 pulp and paper mills, 9 pellet mills, and one OSB mill. Two pellet mills closed in 2017 and 2021 and a pellet mill became operational in 2025 (Figure B-3). Two facilities (one pellet mill and one OSB mill) were announced, but only the OSB mill has been in construction for a few years. Additionally, there is a large pellet mill being constructed in Stone County, Mississippi; however, the construction is currently on hold.

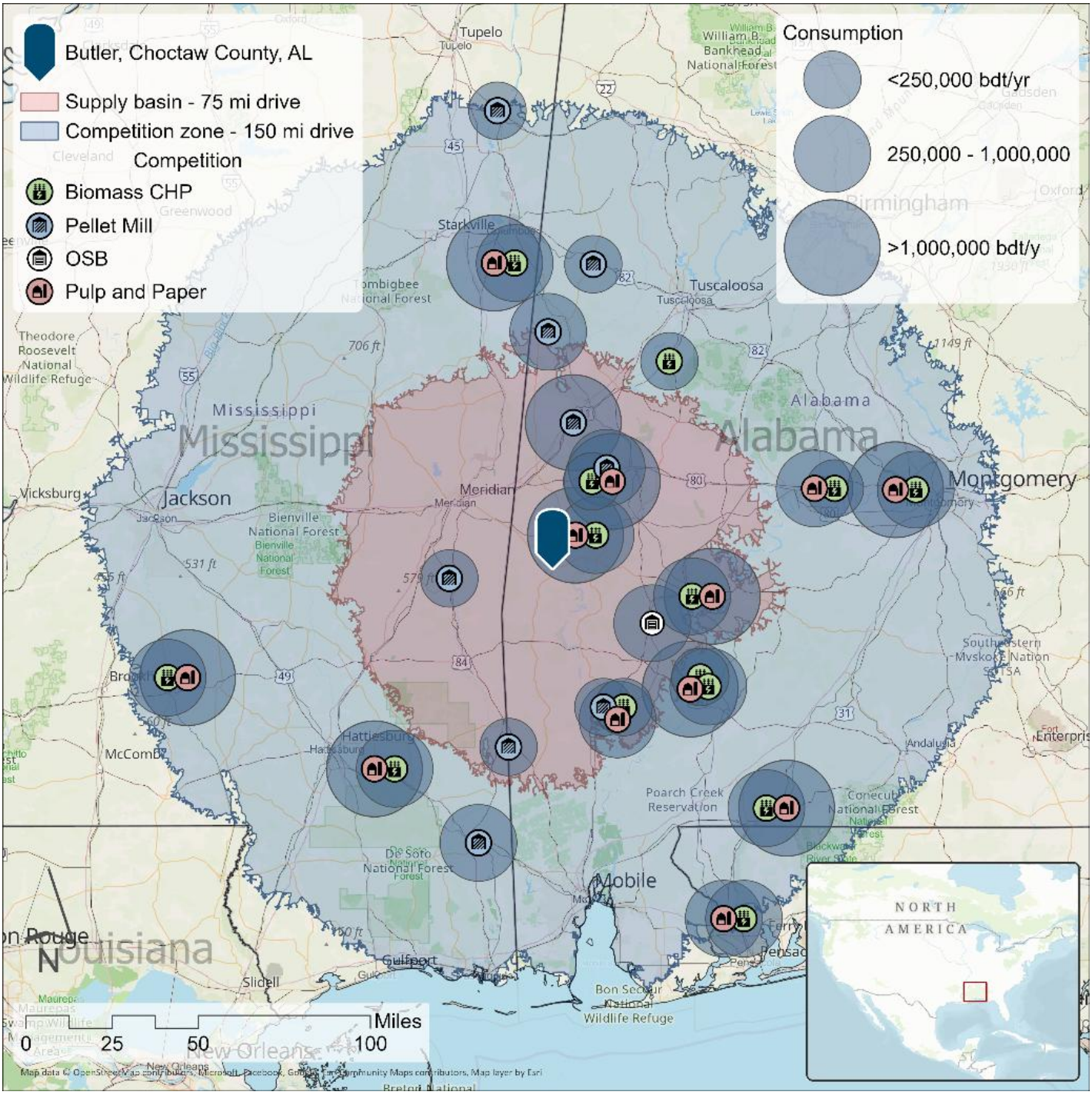
Since 2018, a steady increase in both number of competitors and wood intake has occurred in the Competition Zone (Figure B-3), mostly as a result of several pellet mills being constructed. In 2026 alone, a new pellet mill increased the total wood intake by 1.1 million bdt/yr.

The 22 competitors currently consume an estimated 19.5 million bdt of biomass per year (Table B-3), of which an estimated 3.8 million bdt/yr (20%) is potentially sourced from the Supply Zone.

Table B-4 shows that, after considering the current estimated demand, approximately 2.5 million bdt/yr of woody biomass remain potentially available to a new project.

[10] forisk.com/product/north-american-forest-industry-capacity-database/

Map B-3. Map of Biomass Competitors in the Competition Zone[11]



[11] forisk.com/product/north-american-forest-industry-capacity-database

Figure B-3. Historical Total Wood Intake and Number of Facilities in the Competition Zone[12]

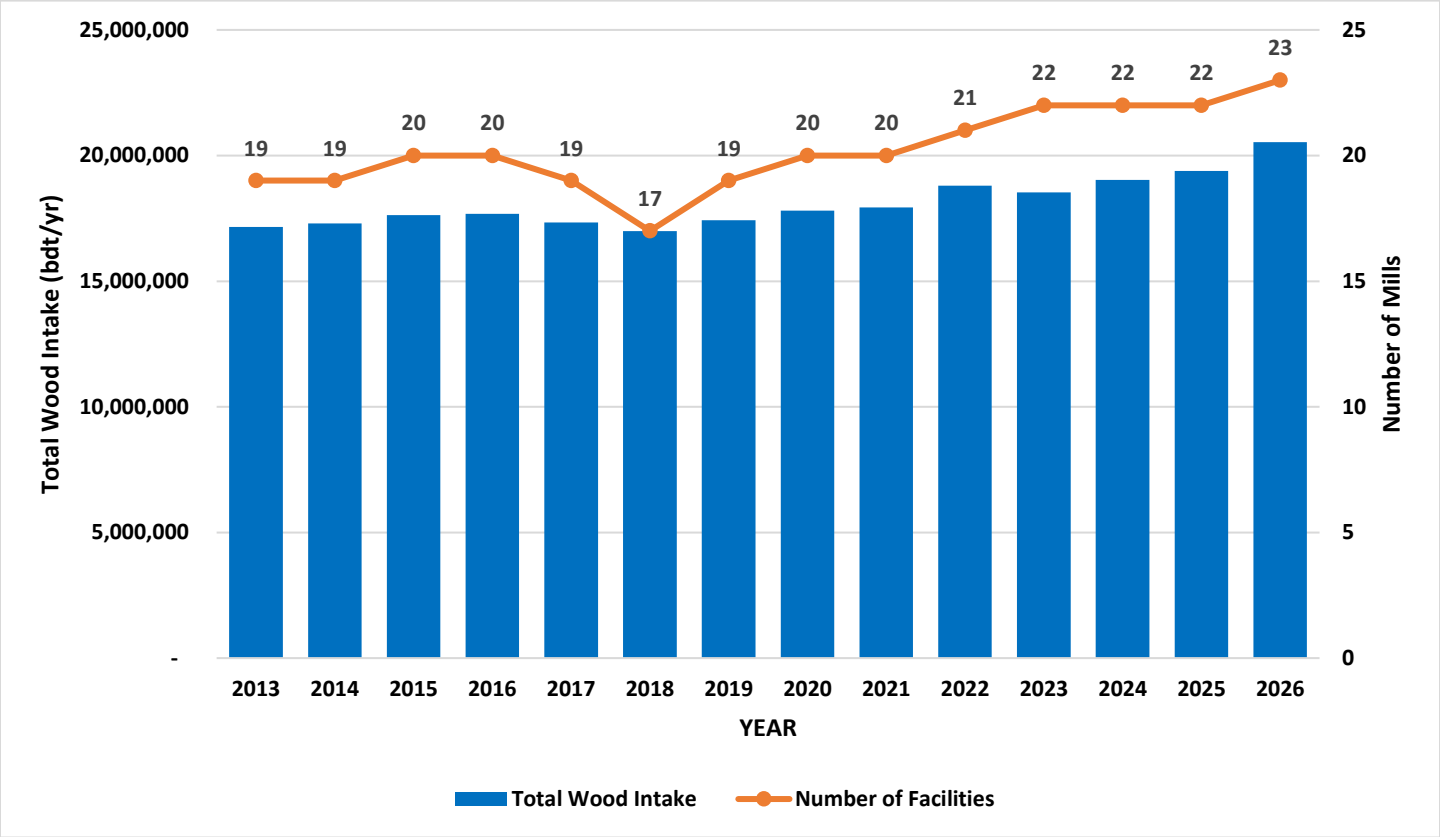


Table B-3. Biomass Demand by Competitor Category

Competitor Category	Biomass Demand (bdt/yr)	% Total Demand	Feedstock Demand from Supply Zone* (bdt/yr)	Feedstock Mix
OSB Mill	664,000	3%	320,000	100% Pulpwood Logs
Pulp and Paper Mill	15,341,000	79%	2,650,000	60% Pulpwood + 40% Sawmill Residues
Pellet Mill	3,537,000	18%	826,000	50% Pulpwood Logs + 50% Sawmill Residues
Total	**19,542,000**		**3,796,000**	

* Adjusted proportionally to the distance from Butler, AL to each competitor.

Table B-4. Woody Biomass Production, Demand, and Availability by Feedstock Type

Feedstock Type	Generation (bdt/yr)	Demand (bdt/yr)	Availability (bdt/yr)
Pulpwood	2,702,800	2,300,000	402,800
Forest residues	1,174,000	-	1,174,000
Sawmill residues	2,458,000	1,500,000	958,000
Total	**6,334,800**	**3,800,000**	**2,534,800**

[12] Forisk Database

RATED QUANTITIES AND PRICES

Rated quantities and price ranges for each feedstock type are presented in Table B-5. The rated quantity of pulpwood was determined by applying a Biomass Availability Multiple (BAM) of 1.5 to the estimated pulpwood availability. The low BAM value is justified by the potential to access additional volumes of pulpwood from thinnings, as presented above. The rated quantity of forest residue was determined using a BAM of 4.0, as there is a lack of regional forest residue supply experience. The rated quantity of sawmill residues was determined using a BAM of 2.0, reflecting the willingness of sawmill owner-operators to share generation and pricing data. Price ranges are based on cost estimates and outreach to sawmills and logging companies. Table B-6 displays price ranges based on outreach to sawmills and logging companies.

Table B-5. Rated Quantities and Delivered Price Ranges of Biomass in the Supply Zone

Biomass type	Available Quantity (bdt/yr)	Biomass Availability Multiple (BAM)	Rated Quantity (bdt/yr)	Delivered Price Range ($/bdt)
Sawmill Residues	958,000	2.0	479,000	40-80
Pulpwood	402,800	1.5	268,000	50-60
Forest residues	1,174,000	4.0	293,500	70-80
TOTAL	**2,534,800**		**1,040,500**	

Table B-6. Price Estimates from Outreach

Feedstock Type	Delivered price ($/bdt)
Sawmill residues – Chips	60-78
Sawmill residues – Chips	60-78
Sawmill residues – Chips	55
Sawmill residues – Chips	84
Sawmill residues – Sawdust	49-58
Sawmill residues – Sawdust	36
Sawmill residues – Sawdust	50
Sawmill residues – Shavings	48-66
Sawmill residues – Shavings	60
Sawmill residues – Bark	33-44
Sawmill residues – Bark	27-36
Pulpwood	50
Pulpwood	52
Pulpwood	57-59
Pulpwood	60
Pulpwood	60
Pulpwood	60

OPERATIONAL CONSIDERATIONS

To supply the rated quantity of pulpwood, seven additional logging crews and 21 logging trucks would be necessary.[13] Supplying the rated quantity of forest residue would require approximately seven chippers or grinders and 26 chip trucks.[14] While regional logging capacity is sufficient to recover the rated quantity of pulpwood, forest residue supply will require logging contractors to purchase chipping or grinding units. A scale-up period of 3-5 years will likely be required before the chipping/grinding units are operational. Because the capital investment for portable chippers and accompanying trailers often exceeds loggers' ability to finance the equipment, standard logging crews may be unable to purchase this equipment independently. A new project could mitigate this barrier by offering direct financial subsidization or equipment financing to third-party contractors, a strategy already employed by some regional pellet facilities to secure in-woods chipping capacity.

Competition for pine pulpwood is expected to intensify due to the planned OSB mill in Shuqualak, Mississippi. At the same time, most sawmill residues—particularly chips—are already committed under supply agreements with existing consumers, typically under 1–3-year contract. Operationally, labor availability represents one of the most significant long-term risks. Outreach consistently identified shortages of logging crews, truck drivers, and skilled equipment operators, compounded by an aging forestry workforce and limited participation from younger workers.

[13] Estimates assume an average of 12 truckloads/day/crew, 14 bdt/truckload, and 225 working days/year
[14] Assumes a chipping/grinding productivity of 20 bdt/hr, 225 days/year, 10 hrs/day, and 4 chip vans per grinder/chipper.

SECTION C: INFRASTRUCTURE



PROPERTY OVERVIEW

Site Name:	Choctaw Industrial Park
Address:	Industrial Site Road
City:	Butler
State:	Alabama
County:	Choctaw
Acres:	140
Pricing Note:	Negotiable
Zoning:	Light Industrial/Forestry Undeveloped

SITE CONTACTS

Economic Development Contact
Dee Ann Campbell
Choctaw County Commission, AL
choctawchamber@tds.net

ADDITIONAL NON-RATED SITES

Infrastructure Site Contact
Jaidan Hunt
Manager of Advisory Operations
jaidan@ecostrat.com

TRANSPORTATION

The Choctaw Industrial Park is located along US Highway 10, with Highway 17 located approximately 7 miles away. The nearest interstate access includes I-20 and I-59, both approximately 37 miles from the site, with the nearest interstate exit at 39 miles. The site is not rail served; however, Choctaw County has rail infrastructure in the northern portion of the county. The Butler-Choctaw County Airport is located directly across US Highway 10 from the site. The nearest commercial airport is approximately 40 miles away, and the nearest international airport is approximately 127 miles.

ELECTRIC SERVICE

Electric service is provided by Black Warrior Electric Membership Corporation (EMC), which partners with Alabama Power for generation. A 115 kV distribution substation is located directly beside the site, within a few hundred yards.

NATURAL GAS

Natural gas service is provided by Spire, with a 4-inch natural gas main located on the site.

WATER

Water is provided by the Butler Utilities board, with a 6-inch water main located on the site.

WASTEWATER

A sewer line is available within a few hundred yards of the site, currently serving the adjacent former manufacturing facility owned by the same landowner. The site has no known drainage or stormwater issues. The nearest wastewater treatment plant referenced in available documentation is the Meridian Water Treatment Plant at 47 miles.

TELECOMMUNICATIONS

Telecommunications services are provided by Pine Belt Telephone Company, which also provides internet service. There is currently no fiber optic line directly to the site; however, fiber is expanding in the area and is expected to reach the site in the near future.

SECTION D: RISK INDICATOR SCORING METRICS

CATEGORY 1.0: SUPPLY CHAIN RISK

1.1 Risk Factor: Quantity and Delivered Cost of Available Biomass Feedstock

1.1.1 Biomass Feedstock Supply Curve/Marginal Cost Curve

Rationale: The greater the feasible transport distance, the more feedstock is accessible to the Issuer, but at a higher delivered cost. The feedstock supply curve, sometimes referred to as the marginal cost curve, is a function of feedstock availability over its cost, which is primarily, but not exclusively, a function of distance. The feedstock supply curve is used to determine the availability of redundant feedstock at various price points, as well as the cost of replacing feedstock with substitutes located at different distances.

Feedstock cost curves are useful in determining supply chain resilience; they provide information about the cost of feedstock availability in times of supply disturbance. Biomass supply chains are prone to supply disturbances over time; suppliers can become insolvent, or weather events can temporarily disrupt feedstock availability. When a disturbance occurs, the Issuer may need to source replacement feedstock from different suppliers at different locations and at different costs. A biomass supply curve indicates quantities of feedstock available at various price levels from suppliers generally located further away than the core supplier.

Risk Information: Analysis of the supply curve data indicates that procuring over 50% of the total available quantity requires a procurement distance of 55 drive miles for pulpwood, forest residues, and sawmill residues. Significant increases in sawmill residue availability are observed between 45 and 50 mi, where it jumps from about 480,600 bdt/yr to 1.2 million bdt/yr. All of the rated quantity of pulpwood, forest residues, and sawmill residues is available for the rated price ranges of $50-60/bdt, $70-80/bdt and $40-80/bdt, respectively.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.1.2 Seasonal Biomass Feedstock Supply Variation

Rationale: Biomass supply can present significant seasonal variations. Seasonal supply variations, combined with limitations associated with longer-distance transportation and storage, can lead to BDO Zone biomass supply imbalances,[15] which can manifest in shortages and higher costs for Issuers.

Risk Information: In this region, heavy rainfall during the spring and winter months saturates lowland swamps, significantly slowing down logging operations due to inoperable, wet terrain. Local suppliers and operators successfully implement these mitigation strategies by shifting their harvest schedules to better-drained upland areas to substitute their feedstock sources during wet periods. Additionally, competitive mills actively stockpile large inventories of wood during the drier fall months to ensure a steady supply when weather-related access issues arise later in the year.

Raw Risk Likelihood (RRL)	**Score**

[15] Golecha & Gan, 2016.

The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
Stockpiling feedstock inventory prior to wet season should effectively mitigate against this risk.	**50%**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 8 out of 100.	**8**

1.1.3 Year-to-Year Variation in Biomass Feedstock Availability

Rationale: Biomass can have significant year-to-year supply variations due to variability in yield from biomass harvesting operations.

Risk Information: Harvesting data demonstrates diverging historic yield variability depending on the specific wood product being tracked; for all roundwood, regional volumes dropped from a high of 5.6 million bone dry tons (bdt) in 2014 down to roughly 4.2 million bdt in 2018, before experiencing a steady recovery to 4.9 million bdt by 2023. Conversely, pulpwood-specific harvests experienced a similar initial contraction—falling from 2.1 million bdt in 2014 to approximately 1.75 million bdt in 2018—but then remained relatively flat and stabilized near 1.7 million bdt through 2023. These annual variations in harvesting are due to changes in demand for timber, not constraints in timber supply, as demonstrated by the increasing volumes of standing timber (Figures E-1 and E-2). Nonetheless, since woody biomass availability is a function of sawtimber production, annual variation in demand for timber from sawmills has an effect on year-to-year variation in biomass feedstock availability. It is noted, however, that this availability is already mitigated through the BAM factor (Table B-5).

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.1.4 Historical Biomass Feedstock Price Variations

Rationale: If the historical feedstock price shows volatility, then the risk of future price fluctuation is elevated. If feedstock prices have historically exceeded the price at which the Issuer would have to cease operations or breach a financial covenant (i.e., the "red line" feedstock cost), then mitigation measures should be put in place.

Risk Information: Historical biomass feedstock price variations are influenced by shifting macroeconomic demands, localized weather disruptions, and regional facility capacity. Analyzing 10 years of historical, inflation-adjusted biomass price data provides insight into market volatility across the different feedstock types under investigation.

Over the 10-year period (2016–2026), inflation-adjusted pulpwood prices saw overall decreases when comparing the most recent values to those from a decade ago. Hardwood pulpwood reached a 10-year high of $101.03/bdt in 2022 and hit a low of $75.64/bdt in 2024. Hardwood pulpwood experienced a -17.79% change from 2016 to 2026. Pinewood

pulpwood reached a 10-year high of $81.21/bdt in 2022 and bottomed out at a low of $59.14/bdt in 2026. Pinewood pulpwood experienced a -25.41% change from 2016 to 2026.

The data for inflation-adjusted sawmill residues displays varying degrees of fluctuation, though most streams trended downward when comparing current values to 2016, with the notable exception of planer shavings: Hardwood saw chips reached a high of $81.61/bdt in 2019 and a low of $65.28/bdt in 2024. Hardwood sawmill chips saw a -17.24% change from 2016 to 2026. Pinewood saw chips reached a high of $75.84/bdt in 2016 and a low of $37.67/bdt in 2024. Pinewood sawmill chips saw a -40.22% change from 2016 to 2026. Hog fuel reached a high of $58.26/bdt in 2022 and a low of $42.30/bdt in 2026. Hog fuel saw a -10.61% change from 2016 to 2026. Pine process residues reached a high of $63.62/bdt in 2022 and a low of $49.72/bdt in 2026. Pine process residues saw a -6.58% change from 2016 to 2026. Pine in-woods chips reached a high of $81.56/bdt in 2022 and a low of $55.94/bdt in 2018. Pine in-woods chips saw a +4.58% change from 2016 to 2026. Lastly, planer shavings reached a high of $130.07/bdt in 2025 and a low of $86.46/bdt in 2016. Planer shavings saw a +38.97% change from 2016 to 2026.

Importantly, this data is regional, not local, which explains the difference in the rated price. However, using this data to assess trends revealed that pricing in the region has historically fluctuated. As a result, risk is deemed medium.

Raw Risk Likelihood (RRL) The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**Score** **6**
Raw Risk Impact (RRI) The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**Score** **6**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**Score** **36**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**Score** **36**

1.2 Risk Factor: Harvest and Collection Risk

1.2.1 Biomass Feedstock Production Experience

Rationale: Risk is higher when suppliers have limited experience with planting, growing, harvesting, processing, and/or collecting biomass. Limited experience may be common for forest residue supply chains where forestry producers may have no previous experience.

Risk Information: The regional logging industry is mature and relies heavily on experienced, family-owned companies that have supplied the local forest products sector for decades. The region is dominated by fully mechanized crews utilizing feller-bunchers and grapple skidders rather than semi-mechanized (chainsaw felling) crews, and there is a high prevalence of logging companies with multiple crews, typically operating up to five crews per business.

Raw Risk Likelihood (RRL) The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**Score** **2**
Raw Risk Impact (RRI) The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**Score** **2**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**Score** **4**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score	**Score**

The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.2.2 Primary Product and Residue (or Secondary Transformation) Risks

Rationale: If the feedstock is a new/secondary crop or a by-product, suppliers may either lack sufficient experience to mitigate risk or be unable to react to such risk. Secondary crops or by-product producers may be less likely to prioritize production. For new crop types, inexperience in planting, harvest, collection, and yield data may pose higher levels of risk. If the feedstock is a secondary transformation (i.e., forest residue), then production can be subject to variables beyond suppliers' control (e.g., changing demand for sawtimber).

Risk Information: All woody biomass types assessed here are a by-product of the sawmilling industry. Sawmill residues are a by-product of the sawmilling process. Forest residue is generated through timber harvesting. Pulpwood harvesting too depends on demand for lumber (although thinnings may be considered an exception). Therefore, the health of the lumber industry is directly correlated to the availability of woody biomass. Historical and projected demand for primary products like softwood lumber and structural panels is heavily tied to the U.S. residential construction and home improvement sectors. While the housing market has experienced recent weakness due to high mortgage rates and affordability issues, long-term projections remain positive due to an underlying national housing shortage and rising demand for emerging products like cross-laminated timber. Furthermore, increasing interest in bio-based materials is driving demand for nanocellulose and cellulose derivatives in the electronics and pharmaceutical sectors, alongside fluctuating trends in domestic upholstered furniture manufacturing. Primary feedstock supply remains robust in the region, supported by significant investments in softwood lumber mill capacity. Nonetheless, the risk is elevated by the very fact that woody biomass availability and pricing depend on the health of the sawmilling industry.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.2.3 Harvest and Collection Practices and Schedules

Rationale: Differences in harvest timing and practices used can create risk to both the quantity and quality of feedstock. For example, feedstock harvested by different suppliers in different windows can undergo varying levels of exposure to sun, wind, and moisture, leading to variations in delivered feedstock quality. For forestry biomass, unsightly clear-cuts and slash piles (even on plantation forests and especially when located near communities) can provoke unwanted public backlash even when suitable and sustainable replanting regimes are followed.

Risk Information: Supply chain practices in this region involve standard rotation schedules, with pine thinnings occurring at 12 to 15 years and clearcuts typically between 18 and 25 years. Regional harvest timing is heavily influenced by seasonal weather; logging operations frequently slow down during the wet winter and spring months, prompting harvesting crews to shift their schedules to better-drained upland tracts to maintain supply. Meanwhile, forest residues are rarely collected for secondary markets and are instead routinely piled and burned at the roadside. This risk indicator is deemed very low.

Raw Risk Likelihood (RRL)	**Score**

The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI) The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**Score** **2**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**Score** **4**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**Score** **4**

1.2.4 Harvesting and Collection Equipment

Rationale: Different types of harvesting and collection equipment used by suppliers in a BDO Zone can have a significant impact on the quality and availability of feedstock. Using different types and combinations of harvesting, collection, and processing equipment among suppliers can lead to non-homogeneous feedstock. Equipment that is not designed specifically for biomass cultivation, harvesting, and collection can increase feedstock quality risks. Relevant equipment should be specified for the sake of product consistency and risk reduction.

Risk Information: The region's harvesting operations are highly mechanized, predominantly utilizing feller-bunchers (both wheeled and tracked), grapple skidders, and knuckleboom loaders. A typical single logging crew possesses the capacity to produce between 37,800 and 50,400 tons of timber annually. Equipment is primarily owned by small, independent, family-run logging contracting businesses, which usually operate a maximum of five crews and maintain their own fleets of log trucks. However, the ability of these contractors to purchase or lease new equipment is severely constrained by high capital costs, rising insurance premiums, and a persistent shortage of skilled equipment operators and truck drivers. Because producing the rated quantity of biomass requires additional equipment (seven additional logging crews and 21 logging trucks, as discussed in Section B), this risk indicator is deemed medium.

Raw Risk Likelihood (RRL) The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**Score** **6**
Raw Risk Impact (RRI) The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**Score** **6**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**Score** **36**
Mitigation/Notching To alleviate these barriers and ensure adequate production capacity, some larger forest product facilities, such as a pellet mill in Sumter County, occasionally assist third-party contractors by providing or financing specialized equipment. A similar tactic could be used by a new entrant to mitigate this risk.	**Notch** **50%**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 18 out of 100.	**Score** **18**

1.2.5 Ownership/Control of Land

Rationale: Suppliers that own land or a production facility where feedstock is produced tend to have better control of supply chains and present lower degrees of supply risk.

Risk Information: The vast majority of the wood supply in this region (97%) is sourced from private timberlands. The ownership structure is highly consolidated among private corporate entities, including Timberland Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs), which aggressively manage pine plantations for maximum yield. Relationships between suppliers and landowners are typically facilitated by

independent consulting foresters or timber dealers who manage assets and coordinate timber sales on the open market.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.2.6 Variation in Feedstock Preparation or Densification Methods Among Different Suppliers

Rationale: The shape and density of the unit in which feedstock is supplied can impact feedstock cost and quality. Standard feedstock densification modes for biomass consist of round or square bales, pellets, cubes, chips, or grindings. The size of wood fiber processed in a grinder is less homogenous than if a chipper is used. Bales of different densities can absorb moisture at different rates. In certain cases, round bales have been viewed as problematic due to their uneven moisture content distribution.[16]

Risk Information: The regional supply chain is primarily optimized for roundwood delivery, and there is a notable lack of required densification and preparation equipment dedicated to forest residue recovery. Stationary chippers and grinders are becoming less prevalent, as dedicated chip mills are in decline due to local pulp and paper facilities increasingly preferring to source clean residual chips directly from sawmills. Furthermore, the availability of in-woods or portable chipping units is extremely low, with only a handful of specialized contractors and equipment dealers operating whole-tree chippers in the area. The capital investment required for portable chippers and accompanying trailers—often exceeding one million dollars—is economically prohibitive for most standard logging crews unless they are directly subsidized or financed by a major end-user, such as a local pellet manufacturing facility.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.3 Risk Factor: Existing Users

1.3.1 Existing User Locations

Rationale: Competitors' locations relative to siting locations within a BDO Zone can affect the viability of procuring feedstock and the cost of that feedstock. Accurate and detailed competitor mapping provides an understanding of a

[16] Huhnke, 2018.

competitor's geographical influence on new plants within a BDO Zone, including competitive advantages such as short hauling.

Risk Information: The region contains a dense concentration of existing biomass consumers across Alabama, Mississippi, and Florida, consisting of 12 pulp and paper mills, 9 pellet mills, and one OSB mill. Regarding current market dynamics, sawmill residues are highly sought after and fully utilized by existing facilities. Regional pulpwood demand is also quite high. On the other hand, the market for forest residues is virtually non-existent, leaving most residues to be piled and burned at the logging site. The risk is limited by the fact that competition has already been accounted for in rated quantities.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.3.2 Existing User Intake Quantities

Rationale: Clear understanding of feedstock consumption by key competitors for each rated feedstock type in the BDO Zone is essential to quantifying competitor risk. Understanding current consumption and historical trends of feedstock utilization can provide valuable information about feedstock price elasticity during shortages and insight into events that may impact future supply conditions. It can enable more accurate estimates of the sensitivity of feedstock availability to potential future consumption levels or the impact of external events (e.g., weather events, structural economic changes, seasonality, or policy change).

Risk Information: Based on recent operational data, the combined annual capacity of the immediate region's pulp and paper mills exceeds 15.3 million bdt/yr (of which an estimated 2.6 million bdt/yr is sourced from the Supply Zone), while the local wood pellet industry has a combined capacity of about 3.5 million bdt/yr (of which about 826,000 bdt/yr is sourced from the Supply Zone). Lastly, the OSB mill in the Competition Zone has a total capacity of 664,000 bdt/yr (of which an estimated 320,000 bdt/yr comes from the Supply Zone). Despite relatively high demand from existing users, the risk is low because this demand has already been accounted for in the rated quantities.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.3.3 Existing User Pricing and Price Sensitivity

Rationale: Understanding how much competitors pay (or receive) for different feedstock types is essential in determining the Issuer's competitiveness and accurately assessing the delivered cost range in the BDO Zone rating.

Current and historical prices paid/received by competitors provide insight into their procurement behaviors and exert pressure on suppliers in the BDO Zone, such as the ability/willingness to pay premiums for feedstock during times of feedstock shortage or reduce prices (or cut-off deliveries) during gluts. Competitors that have the ability to offer higher prices for feedstock during feedstock shortages can pose a significant risk to the Issuer.

Knowledge of competitor pricing and price sensitivity is also an essential prerequisite to formulating a feedstock cost curve, which can enable predictions of feedstock redundancy, i.e., how much feedstock could become available at different pricing levels.

Risk Information: Historical price data reveals that delivered pulpwood averaged $31.70 to $37.15 per green ton in 2024, down from a peak of $34.82 to $45.77 per green ton in 2022. Recent outreach indicates that current delivered pulpwood prices range from $26 to $30 per green ton depending on the specific facility and supply and demand dynamics. Sawmill residue pricing currently ranges from roughly $30-45 per bone dry ton for bark up to roughly $55-$80 per bone dry ton for chips. These materials are generally locked into multi-year contracts spanning one to three years, heavily limiting spot market availability; however, some material is sold on the spot market. Existing users exhibit moderate price sensitivity but frequently inflate their purchase prices slightly during wet winter periods to secure necessary wood volumes when logging access is restricted by muddy terrain. The risk is deemed medium.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.3.4 Impacts of Future Demand on Biomass Feedstock Availability and Price

Rationale: Feedstock utilization in a BDO Zone can change over time. Expansion of feedstock demand by current competitors can put additional pressure on feedstock and lead to higher prices, feedstock disruptions, shortages, supplier breaches, or other types of supply chain disruption.

If current markets for feedstock have been publicly signaling the potential for increased demand for feedstock (in the case of a sawmill adding a shift or pulp mill potentially expanding into the production of renewable chemicals, for example), high interest in a Supply Zone can make suppliers overconfident, leading to a supplier-controlled market where short-term contracting becomes the norm and supply chain reliability is compromised for the Issuer. If and when it occurs, increased demand on feedstock may decrease availability and increase cost for new plants within the BDO Zone.

Risk Information: There are two proposed facilities identified within the Competition Zone: an OSB facility in Shuqualak, MS (91 drive miles from Butler, AL), with a production capacity of 725 MMSF; and a wood pellet facility in Bond, MS (141 miles), with a production capacity of about 1.2 million tons. The OSB mill is likely to go online, with a 2025 report

noting that the facility has already started hiring staff[17]. However, its wood consumption impact on the Supply Zone is limited due to the distance from Butler, estimated at just over 15,000 bdt/yr of softwood biomass. The pellet mill is very unlikely to go online due to the developer's financial strain[18]; additionally, it is situated on the Supply Zone's edge, so its impact would have been minimal anyway.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.5 Soft Supply Influence of Existing Users

Rationale: In some cases, existing markets for feedstock may be able to exert high degrees of pressure over local suppliers, effectively enabling control of feedstock, especially during times of shortage. This control can derive from qualitative or "soft" factors, such as long previous relationships between local suppliers and existing markets for feedstock.

Risk Information: Pulp and paper mills in the region are known for pressuring sawmills to supply wood chips through "soft influence" tactics, such as a threat that they would stop buying wood chips from a particular sawmill altogether if it supplies some to a new competitor. Although outreach to sawmills did not directly indicate that this is a potential problem in the Supply Zone, a medium risk remains, given the presence of 12 pulp and paper mills in the Competition Zone.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.3.6 Temporary Externality-Driven Markets for Biomass Feedstock

Rationale: Alternative, non-traditional, externality-driven competitors for feedstock can drive feedstock demand (and cost) in unusual circumstances.

Risk Information: In this region, the primary alternative market for sawmill residues, particularly bark and sawdust, is the landscaping and mulch industry, with some sawmills selling their less-desirable byproducts to local tree nurseries and independent mulch operations or even running a top soil operation themselves. Furthermore, temporary

[17] Source: https://www.euwid-wood-products.com/news/companies/hew-starts-hiring-staff-for-the-shuqualak-osb-mill-210525/
[18] Source: https://www.clarionledger.com/story/news/2025/02/11/amory-mississippi-biomass-plant-closed/78411687007/

macroeconomic shifts in energy markets dictate residue utilization; when natural gas prices spike, regional pulp and paper mills rapidly fuel-switch and increase their consumption of dirty bark to power their cogeneration boilers. While these alternative markets exist, their overall impact remains relatively small, as the overwhelming majority of clean chips and residues are locked into traditional pulp and pellet supply chains unless catastrophic weather, such as extreme drought, forces agricultural sectors to seek out wood fibers for emergency animal bedding.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 8 out of 100.	**8**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 8 out of 100.	**8**

1.3.7 Relative Inventory Capacity of Existing Users

Rationale: The more inventory a competing biomass facility is able to store, the more competitive pressure it can exert on supply. The ability to store large inventories allows competitors to purchase inventory when the prices are low, potentially giving it an economic advantage. Additionally, the ability to store inventory during feedstock supply surpluses can enable competitors to continue to intake feedstock when the Issuer's plant (with lesser inventory capacity) may be forced to put suppliers on quota. Larger inventory capacity on the part of competing markets creates supplier loyalty and can make it more difficult for new projects to secure supply without paying a significant premium.

Risk Information: Major existing users, such as large-scale pulp and paper mills in Marengo County, Alabama, and Lowndes County, Mississippi, maintain significant inventory capacities that allow them to heavily dictate market flow.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 12 out of 100.	**12**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 12 out of 100.	**12**

1.3.8 Relative Accessibility/Delivery Hours and Wait Times

Rationale: The value attributed by suppliers to local competing markets for biomass is often directly related to the degree of flexibility the market provides in terms of delivery hours and the more efficient discharge can occur.

Risk Information: Throughout the Supply Zone, the receiving infrastructure at major existing competitors predominantly relies on truck tippers and walking floor trailers to unload biomass. While specific average wait times vary by facility, local suppliers note that delivery bottlenecks are frequently exacerbated by the strict daily delivery quotas imposed by these legacy mills, which restricts the smooth flow of trucks and forces suppliers to cut their daily loads. Furthermore, transportation routes to these facilities often involve a mix of high-quality state highways and poorly maintained county roads that suffer from potholes, which can slow down accessibility and increase wear on

logging trucks. By offering industry-accepted discharge times of 30 to 45 minutes and highly flexible receiving hours, a new facility could significantly incentivize local haulers to redirect their deliveries. The risk is deemed very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.3.9 Relative Specification Advantages

Rationale: When choosing a market for biomass feedstock, suppliers not only look at price but also at relative quality requirements or specifications. It is important to understand feedstock quality specifications for competing markets within the BDO Zone in order to accurately quantify the risk that competitors can exert on the Issuer's supply chain.

Risk Information: Existing competitors in the region enforce highly restrictive specifications, strongly preferring clean, uniform wood chips and generally refusing to purchase scrap lumber, dirty bark, or materials contaminated with dirt from touching the ground. Because every regional sawmill generates a consistent volume of challenging scrap lumber and bark that is difficult to market, a new entrant could secure a massive supply advantage simply by accepting lower-specification materials, such as bark mixed with vines, unground scrap blocks, and ground trimmings. Since local sawmills are desperate for reliable outlets to clear these specific waste streams, a facility with the equipment to internally hog and process dirty, mixed-residue loads would be highly attractive to regional suppliers.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.4 Risk Factor: Transportation

1.4.1 Biomass Feedstock Transportation Costs

Rationale: Transportation can be one of the most significant cost components of biomass supply chains. The average transport cost and percentage of total feedstock cost attributable to transport should be known.

Transport distances of 50-75 miles for biomass feedstocks are typical, but larger distances can be common. Where the average transport distance from suppliers to Issuers is high, the supply chain is subject to greater sensitivities to risks, such as increases in diesel cost, weather impacts, mechanical breakdown, and the demand for scarce feedstock from competitors closer to the source.

Understanding average transport distance can help flag higher-risk BDO Zones where transport distance materially exceeds the average.

Risk Information: State weight regulations, which allow up to 88,000 pounds for agricultural and forestry products in Alabama and Mississippi with specific tolerances or harvest permits, support reported payload capacities. Research and local outreach in the region indicate that the typical transportation cost is about $0.38/bdt/loaded mile for a standard 50-mile haul distance. So, the transport cost to haul biomass 50 miles is $19/bdt. Compared to the delivered price of $40 - $80/bdt, the transport cost makes up 24 – 48% of the total biomass cost. Transport cost therefore is a significant component of the delivered price.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

1.4.2 Ownership/Control of Transportation/Logistics

Rationale: In most cases, suppliers that own or lease transportation equipment necessary to transport biomass from forests or fields are at lower risk than those that do not. However, in some circumstances, reliance on third parties to transport biomass is common practice and does not contribute to risk.

Risk Information: In evaluating the ownership and control of transportation within the region, the supply chain exhibits a strong foundation of vertical integration among harvesting operations. The majority of local logging contractors own and operate their own fleets of log trucks, which significantly reduces the risk associated with relying entirely on third-party logistics providers. However, to supplement this capacity, some dedicated third-party trucking companies—including large, national freight carriers—are also actively involved in transporting roundwood and processed chips across the Supply Zone. This combination of owner-operator fleets and supplementary third-party transportation creates a reasonably redundant logistics network, ensuring that biomass feedstock can be consistently delivered to regional facilities. The risk is deemed very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.4.3 Transportation of Biomass Feedstock Requires Specialized Equipment and Specialized Operator Training

Rationale: Requirements for specialized transport equipment (e.g., walking-floor trailers) can increase supply chain risk. Where there is low availability of required transportation equipment, equipment owners have increased leverage over transportation prices, and supply chain resiliency can be lower.

Risk Information: The delivery of biomass feedstock in this region primarily utilizes standard log trailers and chip vans that are compatible with the truck tippers commonly installed at existing pulp and paper facilities, minimizing the need for highly specialized transport equipment. The risk is deemed very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.4.4 Delivery Routes Through Local Communities

Rationale: Transportation of biomass can become a nuisance to local communities, especially if a large number of trucks pass through residential and school areas. Local communities often have the power to force regulations regarding truck transport, impeding the ability of BDO Zone suppliers to transport feedstock.

Risk Information: The risk of public opposition to biomass delivery routes through local communities is exceptionally low in this region due to the deep historical and economic integration of the forest products sector. The Supply Zone already hosts a dense concentration of large wood-intaking facilities, including major pulp and paper mills, multiple pellet manufacturing plants, and high-capacity sawmills distributed across the local counties. Consequently, local residents are highly accustomed to heavy log truck traffic navigating through their municipalities. Furthermore, the regional forestry sector enjoys robust support from state governments, local citizens, and indigenous groups, meaning that while some environmental non-governmental organizations may voice opposition to the industry at a macro level, day-to-day transportation routes do not face material community backlash or local regulatory obstruction.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.4.5 Transportation Regulations and Local Weight Limits

Rationale: In many BDO Zones, transportation is regulated based on seasonal road conditions. These regulations (e.g., "frost laws") often take the form of weight restrictions or limits on the number of trucks allowed on roads. Such

regulations can impede the project's ability to source sufficient feedstock or increase the cost of doing so at certain times of the year.

Risk Information: Current trucking regulations present a complex logistical landscape, as federal limits restrict vehicles on the Interstate Highway System to a strict maximum gross vehicle weight of 80,000 pounds, forcing many heavy log trucks to detour onto secondary routes. To better support the agricultural and forestry sectors, state-maintained, non-Interstate highways offer more permissive weight limits; for example, Alabama applies a 10 percent enforcement tolerance that allows commercial vehicles to legally haul up to 88,000 pounds (or higher for certain axle configurations), while Mississippi utilizes an annual Harvest Permit system allowing up to 88,000 pounds on approved non-Interstate roads. Unlike northern jurisdictions, these southeastern states do not implement seasonal "frost laws" or spring thaw weight reductions, though they do actively monitor and manage pavement degradation caused by extreme summer heat and lowland flooding. Additionally, regional transportation authorities frequently issue temporary weight and hours-of-service waivers during severe weather emergencies, such as winter storms and hurricanes, to ensure the continuous flow of essential relief and forestry supplies. The risk is deemed low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.4.6 Road Infrastructure

Rationale: Feedstock cost and availability can be a function of road infrastructure, in particular the accessibility the infrastructure provides to feedstock. Issues with road networks will translate directly to risks to feedstock supply.

Risk Information: The overall condition of the region's road infrastructure presents specific localized risks, particularly because the disparity between Interstate and state weight limits heavily diverts log truck traffic onto secondary and rural routes. While state-maintained highways are generally of good quality, many rural county roads suffer from poor maintenance, narrower lanes, and persistent issues like potholes. Furthermore, a significant constraint on the supply chain is the presence of aging bridges on these secondary roadways that were not designed to support the 80,000-plus pound gross vehicle weights of fully loaded log trucks. Posted weight limitations or closures on these inadequate bridges frequently create logistical hurdles, forcing drivers to detour onto longer alternative routes, which subsequently increases fuel consumption, transportation costs, and safety risks.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	**8**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 32 out of 100.	**32**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**

The Loaded RI Score ((1-Total Notch) X GRI Score) is 32 out of 100.	**32**

1.4.7 Transportation Redundancy

Rationale: Transport equipment redundancy is important for dealing with seasonally variable feedstock supplies as well as the risk of equipment breakdowns.

Risk Information: The regional supply chain relies heavily on standard log trailers and chip vans, which are widely available and regularly utilized by the area's robust network of owner-operator logging fleets and third-party freight carriers. For processed biomass, the use of specialized walking floor trailers is present but less critical because regional pulp and paper facilities commonly employ on-site truck tippers to unload standard chip vans. Outreach found that the regional market possesses sufficient baseline trucking equipment capacity to avoid serving as a bottleneck for moving wood. Therefore, a new facility could minimize its reliance on scarce specialized transportation by installing its own truck tippers, establishing a highly redundant logistics network capable of scaling to meet the rated feedstock quantities.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.5 Risk Factor: Risks Related to Supply Chain Resiliency

1.5.1 Size, Number, and Location of Suppliers

Rationale: In general, a supply portfolio involving multiple suppliers of various sizes (and from multiple BDO Zones) is important for ensuring steady and uninterrupted feedstock supply with minimal price fluctuations. If a small number of large suppliers provides a high proportion of total feedstock, a disruption or supplier breach will have greater impact on the supply chain. In such cases the risk of disruption is lower, but the impact of those disruptions is higher. Conversely, many small suppliers are less likely to have the capacity to withstand internal disruptions and thus may be more likely to breach. Here, risk of disruption is higher, but their likely impact is lower. The number of suppliers as well as the ratio of small to large suppliers should be optimized. There is no pre-determined number or optimal ratio of suppliers, although having too many or too few can both pose higher degrees of risk.

Risk Information: The region contains an expected network of 17 prominent sawmills, alongside numerous independent logging contractors. The largest potential suppliers of sawmill residues include high-capacity softwood sawmills located in Clarke County, Alabama, Newton County, Mississippi, and Neshoba County, Mississippi, each possessing the capacity to produce hundreds of millions of board feet annually. Conversely, the timber harvesting sector is highly decentralized, consisting predominantly of smaller, family-owned logging contracting businesses. While the sector lacks massive corporate logging entities, a significant number of these independent logging companies manage multiple logging crews, typically operating up to five separate crews per business.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**

Gross Risk Indicator (GRI)	Score
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.5.2 Suppliers Subject to Same External Risk Factors

Rationale: When a single risk event can impact the feedstock production ability of all (or most) suppliers, then feedstock risk is higher and supply chain resiliency is lower. Resilience is maximized when biomass supply chains exhibit diversity in spatial location (i.e., geography), production practices, and other elements of supply chain structures such that the impact of single high-risk events has varying impacts on suppliers.

Risk Information: The most significant shared risk among regional suppliers is a decline in primary product markets, as the overwhelming majority of sawmill residues and harvested timber depend entirely on the strength of the residential construction and housing sectors, which are highly sensitive to fluctuating mortgage rates and macroeconomic cycles. Furthermore, regional hardwood and veneer suppliers face shared downward pressures from the long-term decline of the domestic furniture manufacturing industry, which continues to lose market share to low-cost international imports. Ecologically, all regional suppliers are subject to identical seasonal weather disruptions—specifically heavy winter and spring rainfall that restricts lowland logging access—as well as the escalating threat of southern pine beetle outbreaks that currently plague over-mature timber stands across the state.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	6
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	8
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 48 out of 100.	48
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	48

1.6 Risk Factor: Biomass Feedstock Scale-up

1.6.1 Capacity of Supply Chain Components and Infrastructure to Scale

Rationale: Scale-up risk increases if supply chain components or underlying feedstock infrastructure necessary for these components cannot scale to handle Issuer feedstock requirements and throughput capacity. Capacity to scale should be demonstrated.

Risk Information: Regional forestry associations indicate that while there is currently a sufficient baseline capacity of standard logging equipment—such as wheeled feller-bunchers, grapple skidders, and knuckleboom loaders—scaling up operations presents significant financial challenges. The high capital cost of new machinery prevents many independent contractors from easily expanding their fleets to meet new demand. Additionally, specialized supply chain equipment required for forest residue recovery, such as in-woods whole-tree chippers and grinders, is extremely scarce due to prohibitive million-dollar price tags, meaning scale-up in this specific area would likely require direct financial subsidization from a major end-user. Furthermore, the capacity to scale transportation infrastructure is constrained by high commercial trucking insurance premiums, which severely limits the ability of contractors to put new log trucks on the road.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	6
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	6
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	36
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	36

1.6.2 Availability of Labor for Biomass Feedstock Production

Rationale: Skilled labor shortages can be difficult to remedy in the short term. The availability of suitable labor in an area can impact the ability to procure sufficient feedstock quantities on required schedules. Labor risks are higher where supply chains are not yet active or for Issuers for whom large feedstock requirements or the development of new (or expanded) supply chains demand significant additions to the local labor force.

Risk Information: There is a severe and worsening shortage of trained logging equipment operators and qualified log truck drivers throughout the Supply Zone, driven largely by an aging workforce that is steadily retiring without sufficient younger replacements. While state-backed workforce development initiatives and local industry partnerships—such as an equipment operator training school recently established in Macon County, Alabama, and community college logger programs in Mississippi—are actively attempting to recruit and train new forestry workers, these niche programs currently graduate relatively small cohorts that are insufficient to rapidly scale the local labor pool.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	6
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	8
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 48 out of 100.	48
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	48

1.6.3 Low Historical Demand for Biomass Feedstock in the Supply Zone

Rationale: If Issuer BDO Zone does not have a history of developed large-scale feedstock procurement, suppliers may not have sufficient expertise in feedstock production to ensure reliable supply, especially in the early years. This can be particularly true for forest residues, where, typically, the infrastructure for collection, processing, and delivery is immature.

Where supply chains are not well-established, risk can be mitigated when new bio-based plants control a higher degree of feedstock processing. For example, if a BDO Zone rating is issued for clean wood chips and the historical demand in the Zone has been exclusively for pulpwood, then supply chain risk will be decreased for new bio-based plants that intake pulpwood and manage log debarking and chipping internally, rather than requiring inexperienced suppliers to deliver debarked wood chips.

Risk Information: Historically, the area has maintained a robust forest products industry. Since 2018, there has been a relatively steady increase in the number of wood fiber utilizing facilities and total intake capacity. These sites prefer to source cleaner residual chips directly from sawmills. While clean sawmill residues are heavily contracted and well-utilized, the historical market for secondary residues like bark and green sawdust can be low unless alternative fuel markets like natural gas experience significant price spikes. An issuer should consider internally controlling processing operations, like debarking and chipping, to mitigate risks associated with historically undeveloped residue supply chains.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.7 Risk Factor: Climate and Natural Risks

1.7.1 Seasonal Weather Impacts on Biomass Feedstock Supply

Rationale: Seasonal weather impacts are defined as those deriving from natural weather variations (e.g., spring thaws, rainy seasons, or dry seasons—as opposed to singular weather events like fires, droughts, or hurricanes). Seasonal weather changes can be a significant risk factor affecting feedstock availability, quality, and price.

Given the significant influence that weather has on multiple aspects of growing, harvesting, and transporting biomass, it is difficult to predict the availability of biomass at a specific location at different points in the future with a high degree of certainty. However, it is still possible, using past data and statistical models, to generate reasonable upper/lower bound estimates of biomass production in any given year in a wider Supply Zone. Such estimates are essential in assessing feedstock risk and enable accurate assessment of the efficacy of the Issuer's mitigation methods.

Risk Information: The region routinely experiences heavy rainfall and localized flooding during the spring and winter months, which creates wet, inoperable terrain in the lowlands and swamps. This seasonal weather significantly slows down logging operations and limits the amount of ground that can be actively harvested. To mitigate these predictable seasonal disruptions, local logging crews adapt by shifting their harvest schedules to better-drained upland areas during wet periods.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
This risk is effectively mitigated through seasonal inventory build-up.	**50%**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 8 out of 100.	**8**

1.7.2 Long-Term Weather and Climate Trends

Rationale: In certain BDO Zones, climatic trends and significant potential changes to future weather patterns can create feedstock risk.

Risk Information: While overall temperatures in Alabama have remained relatively stable over the past century, recent years have been exceptionally warm, and climate models project historically unprecedented warming under higher emissions pathways, which could accelerate soil moisture loss and intensify naturally occurring droughts. The region is also highly vulnerable to the long-term threat of powerful tropical cyclones and hurricanes, which periodically cause massive damage to standing timber inventories and flood local infrastructure. For example, the lingering impacts of catastrophic storms can suddenly flood the market with salvaged timber, depressing prices temporarily before causing long-term sawtimber shortages in devastated counties. Furthermore, shifting climate conditions, including warmer winters and extended droughts, are expected to expand the geographic range and severity of forest pest infestations, presenting a compounded, long-term ecological threat to the region's pine feedstock reliability. Nonetheless, from the perspective of the entire Supply Zone, the risk is deemed low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.3 Forest/Crop Fire

Rationale: Forest/crop fires, especially when occurring on a large scale, destroy feedstock and create shortages.

Fire-prone conditions are predicted to increase across North America. This could potentially result in a doubling of the amount of area burned by the end of this century compared with amounts burned in recent decades. Boreal forests, which have been historically greatly influenced by fire, will likely be especially affected by this change.

Other climate change impacts that could add damaged or dead wood to the forest fuel load (e.g., as a result of insect outbreaks, ice storms, or high winds) may increase the risk of fire activity. New research is aimed at refining these climate change estimates of fire activity and investigating adaptation strategies and options to deal with future fire occurrences. There is growing consensus that as wildfire activity increases, fire agency suppression efforts will be increasingly strained. However, analyses of fire history suggest that the effect of climate variability on precipitation regimes is the primary reason for the decreasing fire activity.

Risk Information: Due to the state's high annual rainfall and humid subtropical climate, large-scale, catastrophic wildfires are relatively uncommon in this specific region, and local outreach confirms that wildfires are not currently viewed as a major operational hurdle by local forestry professionals. However, the state still averages approximately 1,600 smaller wildfires per year, a number that can spike dramatically to over 4,000 fires during periods of severe, multi-year droughts. The majority of these fires occur during the fall when soil moisture drops and fallen leaves provide abundant fuel. To mitigate the risk of explosive fire growth and protect the standing biomass feedstock, state agencies and private landowners actively employ extensive prescribed burning programs, treating hundreds of thousands of

acres annually to reduce hazardous fuel accumulations and plant competition. Although minor fires may occur, from the Supply Zone perspective the risk is deemed low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.4 Risk of Infestation

Rationale: Risk of future infestation, including its estimated consequences on feedstock supply, should be calculated into the overall risk profile.

Since forest insect populations are influenced by environmental conditions, future changes in climate can be expected to significantly alter the outbreak dynamics of certain forest insect species. In some cases, larger and more frequent insect outbreaks may occur, but in other cases, recurring outbreaks may be disrupted or diminished. As the climate continues to change, we can expect more situations, particularly at the margins of tree ranges, where sub-optimal conditions for tree growth and reduced tree vigor can lead to outbreaks of forest insects.

Risk Information: Recently, Alabama has experienced its most severe outbreak in over two decades, with state forestry officials identifying nearly 5,000 active infestation spots in 2024, resulting in significant mortality across tens of thousands of acres of loblolly pine plantations. This elevated risk has been compounded by drought conditions and stand-level factors that can increase susceptibility to infestation, including the presence of dense or over-mature timber in certain areas. To mitigate these impacts, local forest management programs emphasize proactive silvicultural practices, offering incentives for landowners to conduct commercial thinning, harvest over-mature stands, and rapidly remove and salvage infested trees to help limit the spread of beetles. These prescriptions can, in fact, increase the amount of biomass in the market in the short-term. Risk is deemed low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.5 Risk of Hail

Rationale: There is much uncertainty about the effects of anthropogenic climate change on the frequency and severity of extreme weather events like hailstorms and their subsequent economic losses. Some studies indicate a strong positive relationship between hailstorm activity and hailstorm damage, as predicted by minimum temperatures using

simple correlations. This relationship suggests that hailstorm damage may increase in the future if global warming leads to further temperature increases.

Risk Information: While hail may occur in the BDO Zone, it is rare and does not significantly impact woody biomass feedstock or supply chains.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.7.6 Risk of Flood

Rationale: Floods can cause catastrophic disruption and delay in feedstock supply. Where there is a high risk of flood and thus a negative impact on feedstock supply, the BDO Zone rating should account for this risk.

Risk Information: Regional weather patterns regularly bring heavy rainfall and seasonal flooding, rendering bottomlands and swamps too wet for logging equipment and forcing timber harvesting crews to migrate to better-drained upland tracts during the winter and spring months. The state has a long history of catastrophic riverine and flash flooding, often triggered by slow-moving frontal boundaries or the remnants of tropical storms. Notable historical examples include the flooding from Tropical Storm Alberto in 1994, which dumped up to twenty inches of rain and destroyed numerous businesses and homes along the local river basins. Furthermore, major river arteries used for regional logistics have experienced massive overflows that wash out bridges, close major highways, and damage commercial structures, directly obstructing the transportation of goods. Although the likelihood of significant flood is very low, the impact can be significant.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	**8**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.7 Risk of Drought

Rationale: Droughts can cause significant disruptions to feedstock supplies across entire BDO Zones for extended periods of time. Tree species are adapted to specific moisture conditions. Having less water available through drought has a range of negative impacts on the health of forest ecosystems. Direct impacts include reduced growth, increased tree mortality, and failure to regenerate. Indirect impacts include reduced ability to defend against insects and disease and increased fire risk. These impacts can affect the availability of wood fiber for an Issuer.

Risk Information: While the region typically enjoys a water-rich climate, the area has endured several exceptional drought periods, most notably the historic drought of 2007, which was the worst statewide growing-season drought since official records began. During this period, streamflows dropped to record lows, major reservoirs fell significantly below normal pool levels, and commercial shipping on major rivers became nearly impassable. That said, the impact of drought on the biomass supply chain is limited. Generally, therefore, the risk is considered low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds

Rationale: Hurricanes, tornadoes, and strong winds can destroy timber stands, crops, and feedstock piles. They can also delay forestry operations. Hurricanes and tornadoes can indirectly cause temporary shortages of available transportation as available trucking moves to handle higher-value disaster-related contracts. For example, Katrina cleanup limited the availability of live-bottom trailers in the North and South East of the US for several months as truckers shifted operations to handle more lucrative government contracts.

Although scientists are uncertain whether climate change will lead to an increase in the number of hurricanes, warmer ocean temperatures and higher sea levels are expected to intensify their impacts. Recent analyses conclude that the strongest hurricanes occurring in some BDO Zones, including the North Atlantic, have increased in intensity over the past two to three decades.

Risk Information: The state's proximity to the Gulf of Mexico exposes it to devastating tropical cyclones like Hurricane Frederic in 1979, Hurricane Ivan in 2004, and Hurricane Katrina in 2005, which brought immense storm surges, extreme wind gusts up to 145 miles per hour, and widespread infrastructure damage. Inland, the area sits within a highly volatile corridor for severe thunderstorms and holds records for massive tornado outbreaks, such as the unprecedented 2011 Super Outbreak. During the 2011 event, violent tornadoes carved immense, lasting scars into the landscape, fundamentally altering soil stability, flattening forests, and leaving behind billions of dollars in damage. That said, from the perspective of the entire Supply Zone, hurricanes and tornadoes usually leave localized damage.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**24**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**24**

1.7.9 Low Temperatures

Rationale: Low temperatures can have adverse impacts on the operations of feedstock processing equipment in Northern BDO Zones.

Risk Information: Although the Supply Zone can experience significant temperature drops, they are relatively infrequent and limited in time. Risk is deemed low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 8 out of 100.	**8**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 8 out of 100.	**8**

1.8 Risk Factor: Non-Weather Based Externalities

1.8.1 Diesel Price, Oil Price, and Producer Price Index (PPI)

Rationale: CPI and PPI can impact feedstock cost of harvest and collection over time. Sensitivities to worst-case scenarios should be run.

Risk Information: Historical diesel and oil prices heavily dictate the financial stability of the biomass supply chain, as transportation constitutes a major portion of overall feedstock costs. As recent oil market disturbances – such as COVID-19 and Iran War – demonstrated, diesel prices are very volatile. Because logging and hauling rates are highly sensitive to these fuel price fluctuations, prolonged spikes in oil prices can rapidly inflate the delivered cost of biomass. Furthermore, tracking the Producer Price Index (PPI) for related commodities—such as wood pulp, which registered at 155.766 in June 2025—provides insight into inflationary pressures that can increase the cost of labor, harvesting materials, and processing equipment. To mitigate these inherent fuel and inflationary risks, biomanufacturing facilities and local suppliers frequently rely on fuel surcharges or long-term hedging strategies to stabilize operational budgets.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	**8**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 48 out of 100.	**48**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	**48**

1.8.2 Currency Risk

Rationale: Where feedstock is purchased in a currency different than that which a new bio-based plant will locate in a BDO Zone, currency exchange rates and volatility can constitute risk exposure. BDO Zones that cross the US-Canada border, for example, which intake feedstock from both countries, are exposed to such currency risk.

Risk Information: N/A

Raw Risk Likelihood (RRL)	**Score**

The risk likelihood is deemed not relevant, therefore the RRL is not rated (NR).	**NR**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed not relevant, therefore the RRI is not rated (NR).	**NR**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is not rated (NR).	**NR**
Mitigation/Notching	**Notch**
Not rated.	**NR**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is not rated (NR).	**NR**

1.8.3 Border Risk

Rationale: Where feedstock is transported cross-border to another country, risk exposure to border closures and crossing delays becomes present. The availability of trucks willing to do cross-border runs is limited, which can decrease supply chain flexibility and resilience. Plants near the US-Canada border, which intake feedstock from both countries, are exposed to these risks.

Risk Information: N/A

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed not relevant, therefore the RRL is not rated (NR).	**NR**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed not relevant, therefore the RRI is not rated (NR).	**NR**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is not rated (NR).	**NR**
Mitigation/Notching	**Notch**
Not rated.	**NR**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is not rated (NR).	**NR**

1.9 Risk Factor: Political and Social

1.9.1 Government Subsidies for Biomass Feedstock Production or Utilization

Rationale: Feedstock that is directly subsidized through government programs can pose greater long-term risk than feedstock that is not. Subsidies may be subject to amendment or repeal, sometimes with minimal notice.

NOTE: This risk indicator refers to direct feedstock subsidies only; it does not apply to government subsidies that pertain indirectly to the Issuer's operations, such as Loan Guarantees, or to the markets for products produced by the Issuer.

Risk Information: In this region, the direct production, planting, and harvesting of raw woody biomass feedstock operates primarily on a free-market basis without heavy reliance on direct government production subsidies. This free-market foundation minimizes the risk of a sudden supply collapse that could occur if a specific forestry subsidy were unexpectedly repealed. Risk is deemed very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**

No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.9.2 Local, Provincial, and National Laws, Regulations, and Permitting Pertaining to Biomass Feedstock

Rationale: Feedstock whose production is directly dependent on local, provincial, or national laws or government regulations can pose greater long-term risk than feedstock which is not, since laws and regulations may be subject to amendment or repeal.

If biomass utilization requires specific permits (e.g., percentage removal of forest residues, allowable cut limits, air emission, storage permits, rights-of-way, overweight permits for trucks, cross-border permitting for shipment of biomass, chain of custody, or certification of sustainability), the likelihood of obtaining such permits and/or complying with permitting requirements should be examined.

Risk Information: The regional supply chain benefits from a stable, industry-friendly regulatory environment that actively supports forestry operations. Because 97% of the timberland in this Supply Zone is privately owned by individuals or corporate entities, local suppliers easily bypass the complicated, time-consuming procurement regulations and stringent allowable cut limits that strictly govern harvesting on federal or state-owned public lands. Environmental compliance is primarily achieved through voluntary state-specific Best Management Practices (BMPs) to protect water quality and soil health, alongside widespread participation in third-party sustainability certification programs like the Sustainable Forestry Initiative (SFI). Risk is deemed very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.9.3 Backlash Against Biomass Feedstock Development, Procurement, or Usage in the BDO Zone

Rationale: Public backlash against biomass development in the Issuer BDO Zone can directly impact the Issuer's ability to procure, transport, trans-load, store, or utilize feedstock by affecting local policies, regulations, and the Issuer's ability to obtain necessary permitting.

Risk Information: In this region, the risk of broad public opposition to routine forestry operations is minimal because the forest products sector enjoys widespread support from local citizens and state organizations. However, environmental non-governmental organizations maintain a presence in the broader area and actively oppose the biomass and wood pellet export industries. These organizations regularly publish reports arguing that wood pellets produced at regional bioenergy facilities increase carbon emissions over critical timeframes, highlighting their ongoing campaigns against large-scale biomass energy developments. Despite this targeted activism against specific bioenergy end-uses, local forestry outreach confirms that day-to-day community-level anti-forestry sentiment remains negligible across the Supply Zone.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**

Raw Risk Impact (RRI)	Score
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 8 out of 100.	8
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 8 out of 100.	8

1.9.4 Consent of, and Cooperation with, Indigenous Communities

Rationale: Where new project development on or near Indigenous land, or where near Indigenous communities exert influence over feedstock producing areas, consent of, and cooperation with, Indigenous communities decrease Issuer risk.

Risk Information: Within this Supply Zone, the risk of conflict with First Nations or Indigenous communities regarding routine timber harvesting is extremely low. The vast majority of the regional wood supply is sourced from private, corporate-owned, or family-owned timberlands rather than lands subject to Indigenous disputes. Furthermore, major Indigenous groups in the area, such as a prominent Native American tribe operating in the region, are deeply integrated into the local economy and actively support the regional forestry sector. Consequently, a new biomanufacturing entrant is highly unlikely to encounter Indigenous opposition, provided standard environmental and water management protections are maintained.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.9.5 Food Security Concerns

Rationale: Despite the fact that any significant correlation between food prices and biofuel production is unclear, claims that biofuel production has driven up food prices, taken food from communities or had a negative impact on land use can fuel public backlash. For example, the removal of biomass may raise public concerns relating to food security if Issuer feedstock requires the use of land that would otherwise be used for growing food.

Risk Information: N/A

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed not relevant, therefore the RRL is not rated (NR).	NR
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed not relevant, therefore the RRI is not rated (NR).	NR
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is not rated (NR).	NR
Mitigation/Notching	**Notch**
Not rated.	NR

Loaded RI Score	Score
The Loaded RI Score ((1-Total Notch) X GRI Score) is not rated (NR).	NR

1.10 Risk Factor: Sustainability and Environmental Concern

1.10.1 Biomass Feedstock Sustainability

Rationale: Public concerns about the sustainability of feedstock production can jeopardize biomass feedstock operations. Sustainability certification schemes should be utilized where applicable to ensure that feedstock comes from sustainable sources.

Risk Information: The regional supply chain is deeply integrated with major third-party sustainability certification programs, with the Sustainable Forestry Initiative widely recognized as the dominant industry standard. Many regional facilities operate under strict Sustainable Forestry Initiative certifications, while various local pulp and paper mills also maintain certifications from the Forest Stewardship Council and the Programme for the Endorsement of Forest Certification. Furthermore, regional logging contractors actively participate in state-sponsored logger training and certification programs, which ensures adherence to state-specific voluntary best management practices to protect water quality and soil health. The presence of these robust certification schemes on both private timberlands and corporate-managed lands minimizes the risk of unsustainable harvesting practices within the basin. Another aspect of sustainability is the fact that pulpwood is generated either through thinning practices or when sawlogs are harvested. As such, it can be regarded as a byproduct of sawlog operations. Sawmill residues are also a byproduct of lumber production.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.10.2 Risk to Soil Quality

Rationale: Soil sustainability can be defined as the management of soil in a way that does not exert any negative or irreparable effects either on the soil itself or any other systems. There is a diversity of approaches to soil sustainability in jurisdictional guidelines for forest biomass harvesting and production. For different feedstock types, there are also different thresholds at which feedstock removal causes significant negative consequences on the soil.

Poor soil quality that negatively impacts the long-term sustainability of the feedstock can entail long-term feedstock risk. Sub-optimal soil management can leave exposed soil post residue-harvest, which can lead to soil wash-off and soil carbon loss from precipitation and wind. Over-harvesting of biomass also depletes the carbon stock in the soil and creates a negative feedback loop that can degrade the soil and its nutrients.

Risk Information: Intensive whole-tree harvesting and the removal of forest residues can interrupt natural nutrient cycling, exposing soils to erosion and long-term degradation if not managed properly. However, in this Supply Zone, the widespread adoption of forestry best management practices mitigates much of this risk by guiding how operations should be conducted to protect soil integrity. Additionally, local landowners and loggers are highly protective of their soil assets; during periods of heavy winter and spring rainfall, landowners frequently halt logging operations in lowlands

and wet areas entirely to prevent heavy machinery from causing severe rutting, compaction, and physical damage to the soil. By shifting harvest schedules to better-drained upland tracts during wet conditions, the regional supply chain effectively minimizes the physical risk to soil quality.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.10.3 Risk to Surface and Groundwater

Rationale: Excessive nutrient runoff from biomass feedstock production can accumulate in surface waters and result in algal blooms and hypoxia, which can lead to habitat loss for aquatic species higher up the food chain and alter aquatic ecosystem food webs. Damage to aquatic ecosystems can cause social and regulatory backlash. Water intake issues can also increase risk.

Risk Information: State agencies, such as the Alabama Forestry Commission, actively monitor and promote water quality protection through their Best Management Practices programs, which guide forest management practices to protect soil and water quality, ensuring that timber harvesting does not contribute to excessive nutrient runoff or aquatic ecosystem degradation. Risk pertaining to surface and groundwater quality is minimal. In fact, forest biomass production improves water quality by maintaining trees and their root systems on land; an alternative is conversion to agricultural land, which happens when prices for sawlog and pulpwood drop.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

1.10.4 Water Use

Rationale: Biomass feedstock operations can have significant impacts on the hydrological flux (infiltration, groundwater recharge, interception, and transpiration) of ecosystems. This can lead to water shortages, lower yields, and backlash from regulatory bodies if management plans are not properly instituted.

Risk Information: Forest systems management in the Supply Zone poses risk to the hydrological flux.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**

Gross Risk Indicator (GRI)	Score
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.10.5 Pesticide Risk to Human and Ecosystem Health

Rationale: Application of pesticides (i.e., herbicides, fungicides, and insecticides) on forest landscapes can result in adverse health effects for humans and ecosystems. If pesticide application is required in feedstock production, the impact must be considered in the BDO Zone rating.

Risk Information: Local forestry outreach confirms that pesticide use does not present a problem or material risk in the region's day-to-day forestry operations. While forest managers may occasionally apply targeted chemical treatments—such as using herbicides to control unwanted hardwood competition in pine stands or treating tree stumps with borax to prevent root rot—these are localized silvicultural practices rather than broad applications. The broader regional biomass supply chain does not rely on heavy, widespread pesticide or insecticide applications that would threaten local water quality, beneficial insects, or community health.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

1.10.6 Risk to Wildlife and Landscape

Rationale: Biomass production and supply chain operations with negative impacts on wildlife and landscape are at a greater long-term risk of encountering project setbacks and disruptions.

Risk Information: Routine harvesting practices, such as clearcutting pine plantations between 18 and 25 years of age and piling and burning forest residues at the roadside, can create unsightly landscapes that might typically draw criticism. However, these operations are widely accepted locally and are essential for maintaining overall forest health, particularly because active management and commercial thinning prevent devastating Southern Pine Beetle outbreaks that would otherwise decimate large swaths of the pine landscape. Furthermore, adherence to state Best Management Practices and third-party certifications ensures that critical wildlife habitats are protected and that the ecological balance is maintained during and after timber extraction.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**

No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

CATEGORY 2.0: INFRASTRUCTURE RISKS

2.1 Risk Factor: Physical Infrastructure

2.1.1 Land Parcel/Industrial District

Risk Information: The Former Choctaw Industrial Park comprises approximately 140 acres of available, expandable land located on Industrial Site Road in Butler, Choctaw County, Alabama. The property is zoned Light Industrial/Forestry Undeveloped and is designated within a Federal Opportunity Zone. The terrain is flat and predominantly forested, with a portion of the property previously cleared and more developed than the remainder. Adjacent land uses include transportation infrastructure to the north (Butler-Choctaw County Airport directly across US Highway 10), forestry/undeveloped land to the south and west, and light industrial to the east. The site is located directly on US Highway 10 with the Butler-Choctaw County Airport immediately adjacent. An adjacent property, owned by the same landowner, includes a closed manufacturing facility with a large existing structure that is also being marketed for industrial use, providing potential for combined development. While no formal environmental or geotechnical assessments have been completed, local officials confirm no known wetlands, floodplain exposure, or historical concerns on the property. The risk is assessed as very low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.1.2 Ownership of Land

Risk Information: The property was recently sold by the Choctaw County Commission to a private individual landowner who remains actively interested in industrial development on the site. The same owner also holds an adjacent property featuring a closed manufacturing facility with a large structure, which is listed on the Alabama EDPA site for industrial development purposes. The owner prefers a long-term lease arrangement but would consider sale under the right circumstances. Pricing is negotiable. The private ownership with a motivated, development-oriented owner and flexible lease/purchase options positions this as a very low risk factor.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**

Loaded RI Score	Score
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

2.1.3 Permitting Description

Risk Information: Choctaw County does not have a formal permitting structure. The site is located outside the town limits of Butler, and there are no local obstacles when it comes to permits for construction. In past industrial development interest, construction permitting timelines have been approximately 2–3 months. State-level permits would be obtained through the Alabama Department of Environmental Management (ADEM) for environmental compliance. Alabama is consistently ranked among the most business-friendly states in the nation. The absence of local permitting requirements and the short 2–3 month timeline for construction permits position this as a very low risk factor.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

2.1.4 Environmental Issues

Risk Information: No formal environmental assessments (Phase I ESA, Phase II, wetlands delineation, geotechnical investigation, endangered species survey) have been completed on the property. However, local officials confirm that the site is not in a floodplain, contains no known wetlands, and has no historical or archaeological concerns. The terrain is flat and forested, and there are no indigenous land designations in the immediate area of the site. The absence of completed environmental assessments is a notable information gap. While the local knowledge is encouraging, prospective developers would need to commission formal Phase I ESA and potentially Phase II testing to confirm the site's environmental status. The risk is assessed as medium due to the lack of documented environmental data, despite the favorable local indicators.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	6
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	4
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	24
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	24

2.2 Risk Factor: Utilities

2.2.1 Natural Gas Availability

Risk Information: Natural gas service is provided by Spire, with a 4-inch natural gas main located on the site. The on-site presence of the gas main is favorable, though the 4-inch size may need evaluation for capacity adequacy depending on the demands of a biofuel or industrial facility. The risk is assessed as low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.2.2 Electric Availability

Risk Information: Electric service is provided by Black Warrior Electric Membership Corporation (EMC), which partners with Alabama Power for generation. A 115 kV distribution substation is located directly beside the site, within a few hundred yards. The adjacent property (same owner) previously operated an industrial facility and has industrial-grade electrical service within a few hundred feet of the industrial park site. The proximity of a 115 kV substation directly beside the site is a significant electrical infrastructure asset that can support substantial industrial loads. While the current on-site service is limited to basic distribution, the nearby substation and adjacent industrial-grade service provide a clear pathway to upgraded power. The risk is assessed as low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.2.3 Water Availability

Risk Information: Water service is provided by the Butler Utilities Board via a 6-inch water main located on the site. The 6-inch on-site main provides basic water service, though capacity may need evaluation for water-intensive industrial operations. The risk is assessed as low pending capacity confirmation.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**

Mitigation/Notching	Notch
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	16

2.2.4 Drainage, Stormwater Management, and Sewage

Risk Information: Butler Utilities Board provides water and sewer services in the area. A sewer line is available within a few hundred yards of the site, currently serving the adjacent former manufacturing facility owned by the same landowner. The site has no known drainage or stormwater issues. The terrain is flat, which facilitates standard stormwater management. The nearest wastewater treatment plant is the Meridian Water Treatment Plant at 47 miles, though Butler Utilities Board operates local sewer infrastructure serving the immediate area. The close proximity of existing sewer service to the adjacent property and the absence of drainage issues are favorable. The risk is assessed as low pending capacity confirmation.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	4
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	4
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	16
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	16

2.2.5 Waste Disposal

Risk Information: The Choctaw County Landfill is located approximately 12–14 miles south of the site near Butler. It is a county-owned facility. Industrial tenants would need to contract directly with the landfill for waste disposal services. The county-owned landfill within reasonable proximity provides adequate waste disposal access. The risk is assessed as very low.

Raw Risk Likelihood (RRL)	Score
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	2
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	2
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	4
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

2.2.6 Information and Communication Technology (ICT) Services

Risk Information: Telecommunications services are provided by Pine Belt Telephone Company, which also provides internet service. There is currently no fiber optic line directly to the site; however, fiber is expanding in the area and is expected to reach the site in the near future. Other high-speed internet options are available in the area beyond Pine Belt's offerings. The absence of on-site fiber is a limitation for modern industrial operations, though the planned

expansion and availability of alternative internet providers partially mitigate the gap. The risk is assessed as medium pending fiber expansion completion.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

2.3 Risk Factor: Transportation/Logistics

2.3.1 Road/Highway Access

Risk Information: The site is located directly on US Highway 10, with US Highway 17 approximately 7 miles away. The nearest interstate access includes I-20 and I-59, both approximately 37 miles from the site, with the nearest interstate exit at 39 miles. Additionally, a new I-43 interstate corridor is under construction approximately 35 miles to the west, which will provide closer interstate access when completed. While the direct US Highway 10 frontage is a positive, the 37–39-mile distance to existing interstate highways is a notable limitation for freight logistics. The upcoming I-43 corridor will partially mitigate this gap once completed. Choctaw County does not currently have four-lane highway access within its boundaries, which has been identified locally as a perceived barrier to industrial attraction. The risk is assessed as medium.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

2.3.2 Rail Access

Risk Information: Choctaw County has rail infrastructure in the northern portion of the county, recently purchased by Kansas City Rail Service (now part of CPKC). However, there is currently no transfer station or upload facility for loading products onto rail. The railroad operator is in the process of determining locations for transfer stations, and the county is actively working on securing rail loading capabilities. While rail infrastructure exists in the county, the absence of a current transfer station or loading facility means the site is not functionally rail-served at this time. The ongoing CPKC reorganization and county efforts to establish transfer stations may improve rail access in the future, but the current lack of functional rail service results in a medium risk assessment for rail-dependent operations.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**

The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

2.3.3 Airport Access

Risk Information: The Butler-Choctaw County Airport is located directly across US Highway 10 from the industrial park site, within a few hundred yards, providing immediate general aviation access. The nearest commercial airport with limited service is in Meridian, Mississippi, approximately 40 miles west. The nearest international airport is in Birmingham, approximately 127 miles from the site. The immediately adjacent general aviation airport is a notable asset. However, the 127-mile distance to the nearest international airport in Birmingham is a significant challenge for business travel. The Meridian airport at 40 miles provides a closer, though limited, commercial option. The risk is assessed as medium.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

2.3.4 Water Freight Access

Risk Information: The Tombigbee River borders Choctaw County and is located within a few miles of the site. The Tombigbee connects to the Tennessee-Tombigbee Waterway and ultimately to the Port of Mobile on the Gulf of Mexico. However, Choctaw County does not currently have a county-owned port facility. The county is actively working on developing port access, though this is described as a significant undertaking. The nearest existing port is in Demopolis, Alabama, approximately 55 miles from the site. The proximity of the Tombigbee River (a few miles) is a potential long-term asset for bulk commodity transport, and the Demopolis port at 55 miles provides a current alternative. The absence of a local port facility currently limits practical water freight access. The risk is assessed as medium.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 36 out of 100.	**36**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**

The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

2.4 Risk Factor: Social Infrastructure

2.4.1 Healthcare (Local)

Risk Information: Healthcare services in the Butler area include the Ochsner Choctaw General Hospital, a critical access facility located approximately 5–6 miles from the site. The hospital is owned by the Ochsner Medical Group (Louisiana-based healthcare system) and is a relatively new facility, approximately 12–15 years old. The Ochsner Health Center in Butler is also approximately 5 miles from the site, providing primary and outpatient care. For more comprehensive medical services, Baptist Anderson Regional Medical Center is located approximately 43 miles from the site. The nearby critical access hospital under Ochsner's management provides adequate basic healthcare coverage. The 43-mile distance to a larger regional medical center is typical for rural Alabama. The risk is assessed as low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**16**

2.4.2 Education (Schools)

Risk Information: The Choctaw County High School and Choctaw County Elementary School are located within 6 miles of the site. Patrician Academy, a well-attended private college-preparatory school, is located within 7 miles. Coastal Alabama Community College operates a Gilbertown campus within Choctaw County, offering dual enrollment and career-technical education programs. Notably, Coastal Alabama's Skills for Success program currently offers free training for CDL (commercial driver's license), heavy equipment operation, and skid steer operation, directly relevant to industrial and logistics workforce needs. The University of West Alabama in Livingston is approximately 44 miles northeast. Additionally, the Town of Butler is currently developing a new workforce development center approximately 6 miles from the site, in partnership with Coastal Alabama Community College and the University of West Alabama. This center is expected to be operational within 1–2 years and will address basic skills and industrial workforce training needs. The combination of local K-12 schools, an in-county community college with free industrial skills training, and the planned workforce development center positions education as a very low risk factor despite the rural location.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**2**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**2**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**4**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	**4**

2.4.3 Local Transportation

Risk Information: Personal vehicle travel is the predominant transportation mode in Choctaw County. The average commute time for county residents is approximately 33.6 minutes, significantly above the national average of approximately 26 minutes. West Alabama Transportation provides limited transit services, primarily for medical visits (dialysis, etc.) and lower-income residents, but does not function as a general-purpose commuting service. The workforce is almost entirely dependent on personal vehicles. The risk is assessed as medium-low.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**6**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**24**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**24**

2.4.4 Public Safety (Local)

Risk Information: The Choctaw Industrial site is served by the Choctaw County Sheriff's Department which provides primary law enforcement coverage for the site area, as well as the Butler Volunteer Fire Department, which is the primary fire response agency for the district. The Butler Fire Department has an ISO Class 4 rating, indicating good response times. Choctaw County ranks in the 19th percentile for safety, meaning it is less safe than 81% of counties in the US. While the area has a low ISO rating, the high crime rate results in a high-risk score.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	**8**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed high, therefore the RRI is 8 out of 10.	**8**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 64 out of 100.	**64**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 64 out of 100.	**64**

2.4.5 Housing/Cost of Living

Risk Information: The BDO Zone overlaps six counties, the most significant being Choctaw County (73% of the BDO Zone) and Marengo County (11% of the BDO Zone). Choctaw County has a low rental vacancy rate of 0.7%, however, it has a good homeowner vacancy rate of 1%. Additionally, Choctaw County has a great affordability ratio (3), based on median household income of $47,813 and median home value of $123,400. This represents a low-risk score for new development.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed low, therefore the RRL is 4 out of 10.	**4**
Raw Risk Impact (RRI)	**Score**
The risk impact is deemed low, therefore the RRI is 4 out of 10.	**4**
Gross Risk Indicator (GRI)	**Score**

The Gross Risk Indicator (RRL X RRI) is 16 out of 100.	**16**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 16 out of 100.	**Score** **16**

2.5 Risk Factor: Labor

2.5.1 Workforce

Risk Information: In 2025, the BDO Zone had a population of approximately 11,500 people, with an average unemployment rate of 4.4%, compared to the national average of 4.1%. In Choctaw County, the prime age (25-54) employment rate is 72%, and the median age is 47. Approximately 84% of individuals over 25 years of age in Choctaw County have a high school degree or higher, and approximately 14% have a bachelor's degree or higher. This compares to state averages of 88% and 28%, and national averages of 89% and 35%, respectively. The county has acknowledged workforce skills challenges and is actively addressing them through multiple initiatives: the Coastal Alabama Community College Skills for Success program (free CDL, heavy equipment, and skid steer training), a planned workforce development center in Butler (6 miles from site, operational within 1–2 years) in partnership with Coastal Alabama CC and the University of West Alabama, and Alabama's AIDT (Alabama Industrial Development Training) program, which provides free, customized training for qualifying industrial employers. While the small population base and low labor force participation present challenges, the aggressive workforce development investments partially mitigate these concerns. The risk is assessed as medium to low.

Raw Risk Likelihood (RRL) The risk likelihood is deemed medium, therefore the RRL is 6 out of 10.	**Score** **6**
Raw Risk Impact (RRI) The risk impact is deemed low, therefore the RRI is 4 out of 10.	**Score** **4**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**Score** **24**
Mitigation/Notching No adjustment.	**Notch** **NN**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 24 out of 100.	**Score** **24**

2.5.2 Labor Costs

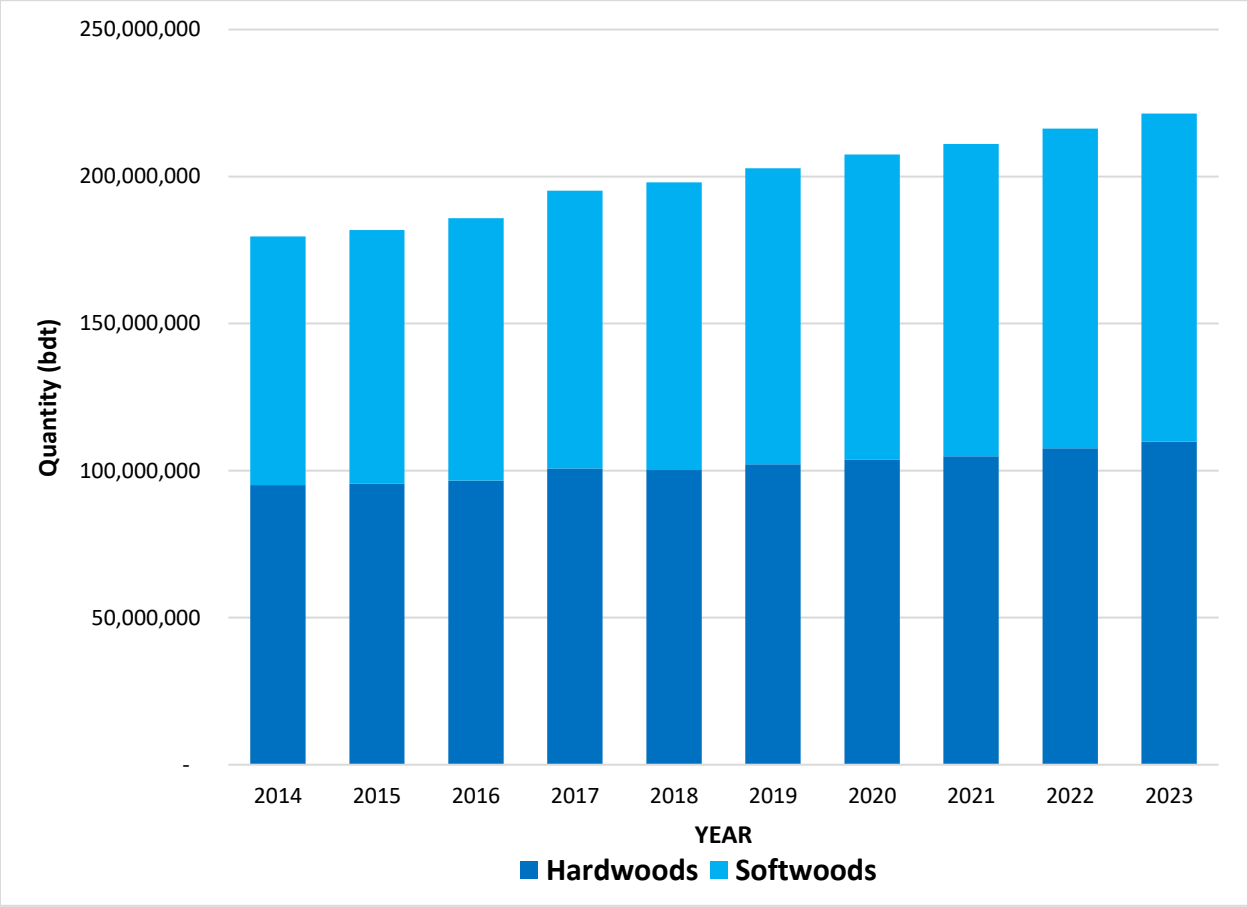
Risk Information: As of 2026, Alabama does not have a minimum wage law, and therefore follows the federal minimum wage of $7.25/hour. Choctaw County's average weekly wage for Q3 2025 was $1,185, which is among the highest in the state, but lower than the national average of $1,459. The median household income in Choctaw County (in 2024 dollars) is $47,813, which is lower than the state median of $63,999, and the national median of $80,734. The exceptionally low labor cost structure positions this as a very low risk factor.

Raw Risk Likelihood (RRL) The risk likelihood is deemed very low, therefore the RRL is 2 out of 10.	**Score** **2**
Raw Risk Impact (RRI) The risk impact is deemed very low, therefore the RRI is 2 out of 10.	**Score** **2**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 4 out of 100.	**Score** **4**
Mitigation/Notching No adjustment.	**Notch** **NN**

Loaded RI Score	Score
The Loaded RI Score ((1-Total Notch) X GRI Score) is 4 out of 100.	4

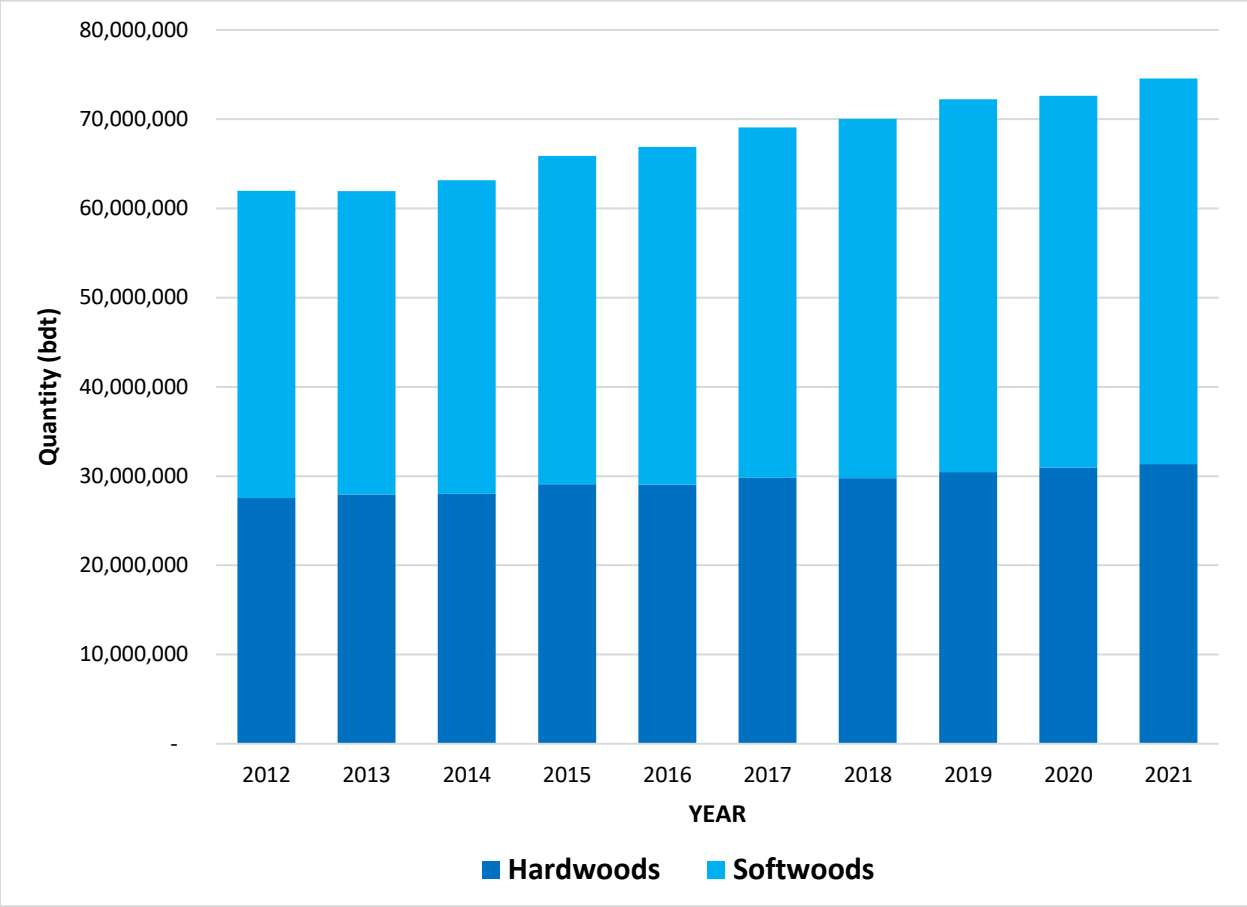
SECTION E: TABLES AND FIGURES

Figure E-1. Merchantable Biomass of All Live Trees in the Supply Zone (2014-2023)[19]



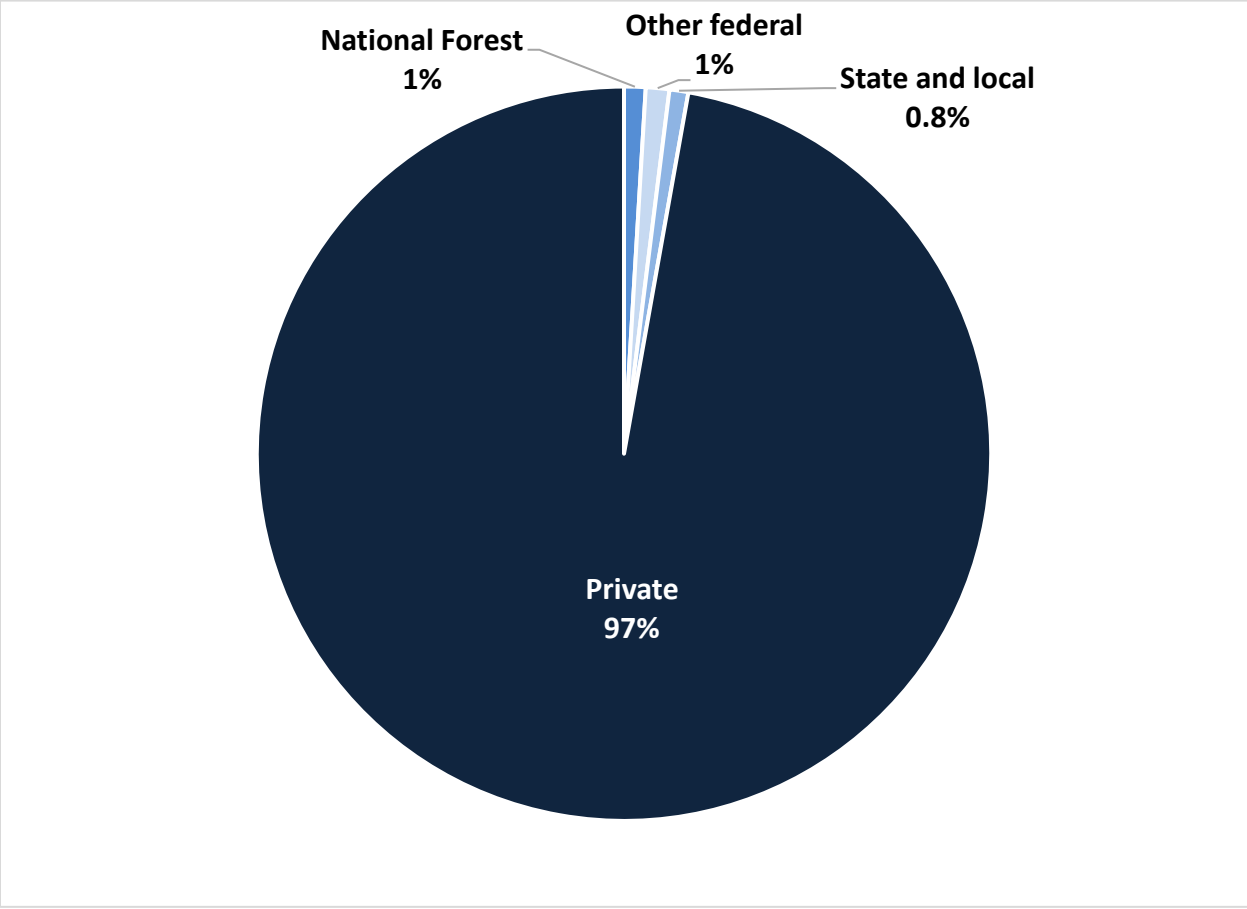
[19] apps.fs.usda.gov/fiadb-api/evalidator

Figure E-2. Merchantable Biomass of Live Pulpwood Size Trees in the Supply Zone (2014-2023)[20]



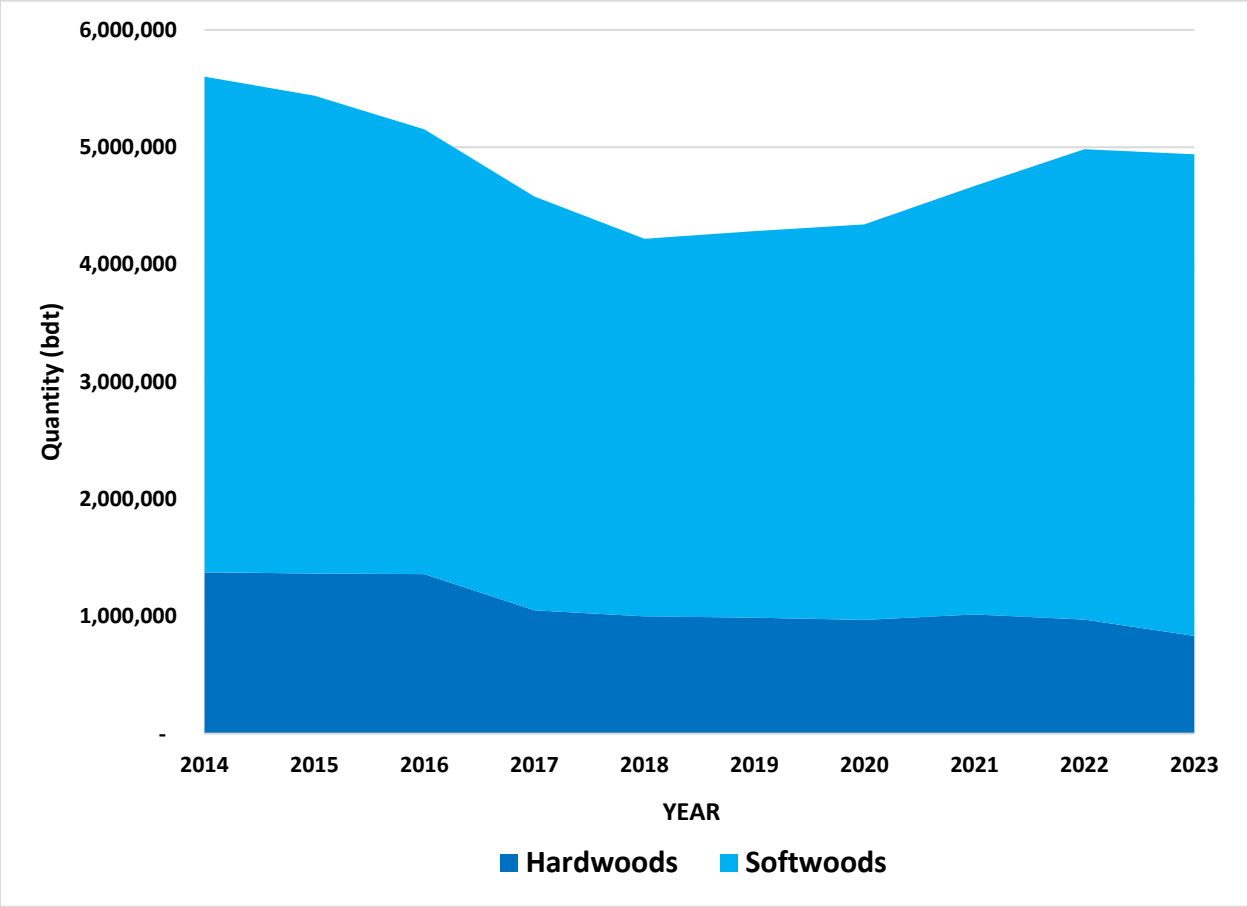
[20] Ibid.

Figure E-3. Percent Merchantable Biomass of Standing Live Trees by Ownership[21]



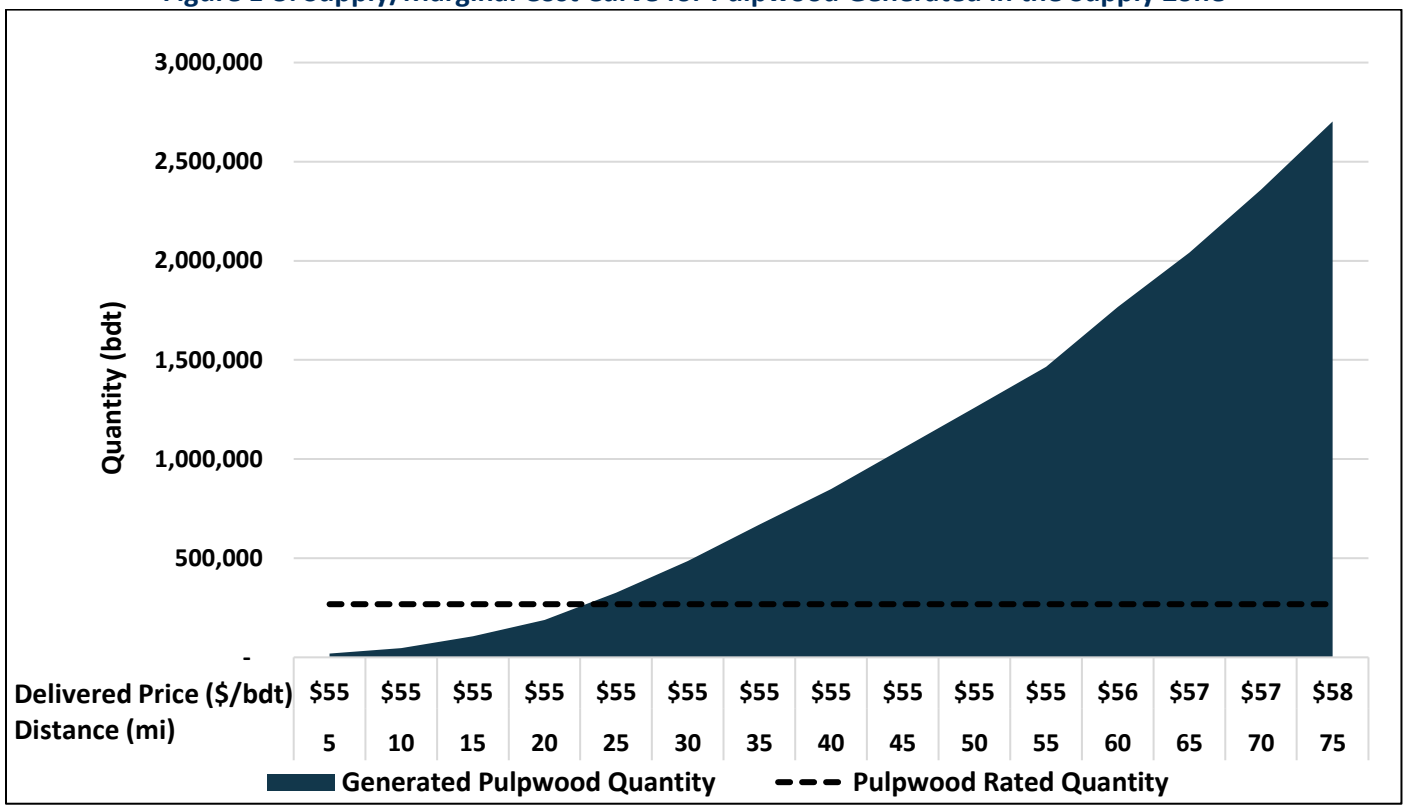
[21] Ibid.

Figure E-4. Historical Harvest in the Supply Zone[22]



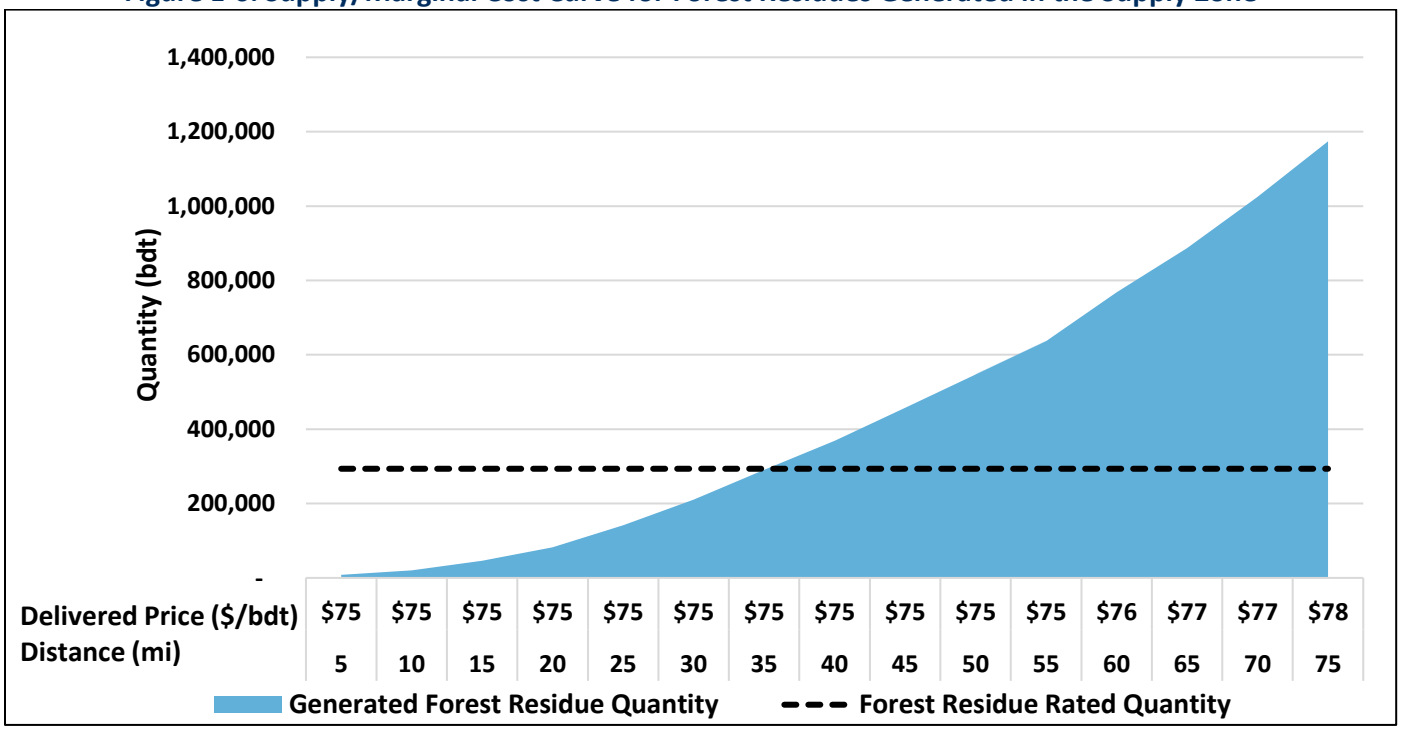
[22] Ibid.

Figure E-5. Supply/Marginal Cost Curve for Pulpwood Generated in the Supply Zone[23]



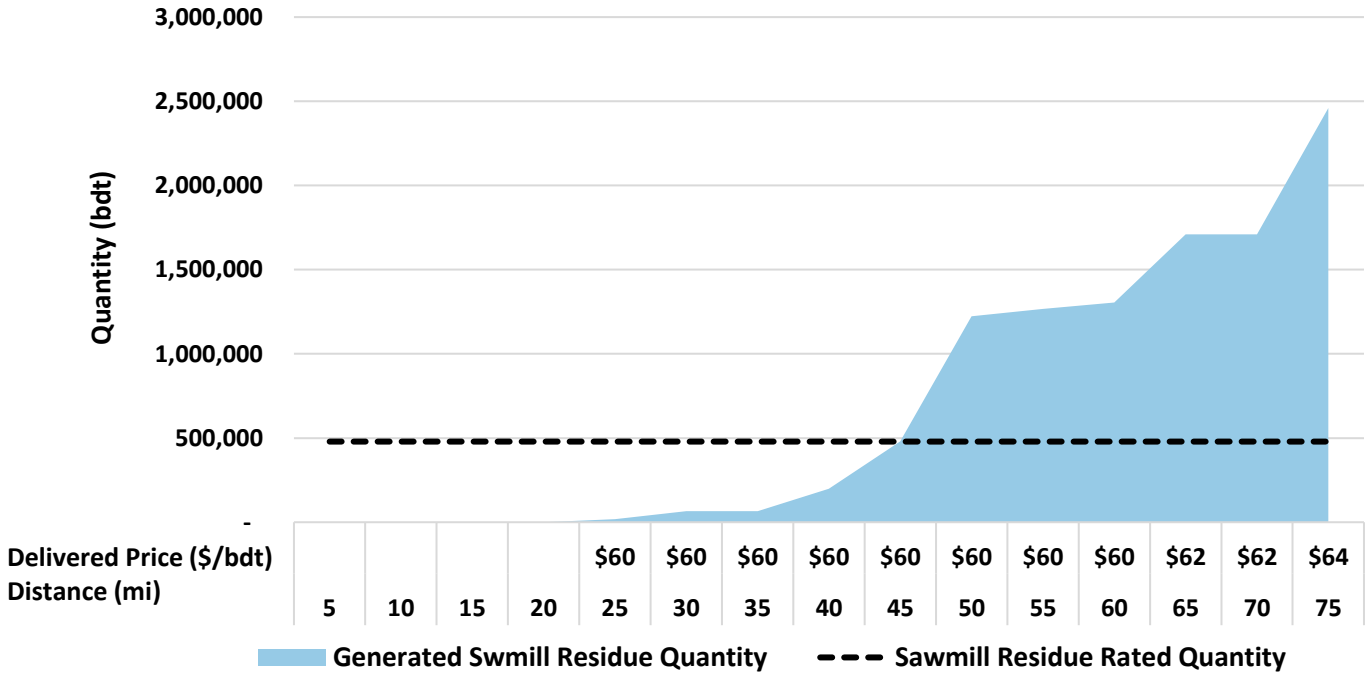
[23] Ibid.

Figure E-6. Supply/Marginal Cost Curve for Forest Residues Generated in the Supply Zone[24]



[24] Ibid.

Figure E-7. Supply/Marginal Cost Curve for Sawmill Residues Generated in the Supply Zone[25]



[25] Ibid.

SECTION F: LEGAL DISCLAIMER

This BDO Zone Rating (the "Rating") is prepared for and provided to Choctaw County Chamber of Commerce and is intended to be read and used in its entirety and not in parts. Separation or alteration of any section or page from the main body of this Rating is expressly forbidden. In preparing this Rating, Ecostrat has used information obtained from third parties or otherwise publicly available. All such information has not been independently validated, verified, or confirmed by Ecostrat (except where otherwise specifically indicated) and Ecostrat makes no representation or warranty as to the accuracy or completeness of any information provided by third parties or otherwise publicly available.

Neither Ecostrat nor the members of the BDO Zone Advisory Committee make any representation or warranty as to the accuracy or completeness of the information and content in this Rating and shall have and accept no liability for any statements, opinions, information, or matters (expressed or implied) arising out of, contained in or derived from this Rating or any omissions from this Rating, or any other written or oral communication transmitted or made available to any other party in relation to the subject matter of this Rating. Any use which a third party makes of this Rating, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Decisions made, or actions taken based on or resulting from Ecostrat's work product shall be the responsibility of the parties directly involved in those decisions or actions. There are no third-party beneficiaries with respect to this Rating, and Ecostrat expressly disclaims any liability whatsoever (whether in contract, tort, or otherwise) to any third party. Ecostrat makes no representation or warranty (express or implied) to any third party in relation to this Rating. A decision by any entity to disclose this Rating to the public or privately to a limited number of potential institutional accredited investors or other qualified investors shall not constitute any permission, waiver, or consent from Ecostrat for any third party to rely on this Rating except for informational purposes, and as such, is provided on such basis. Access to this Rating and its use by any third party implies acceptance by the third party of the terms and conditions contained in this section and other parts of this Rating.

All information included is based on information available on the date hereof and neither Ecostrat nor the members of the BDO Zone Advisory Committee are under any obligation to update the information herein. No investor, security holder, or other person should rely on the content of this report in any way in connection with the purchase or sale of any security.