NOBLE COUNTY, IN

Biofuel Development Opportunity Zone

RATING GRADE: 'A'

Date of Issue: July 9, 2026

A
High Quality

Rating Parameters:

Category	Rated Quantity	Delivered Price	Supply Zone Size
Corn Stover	**475,000 bdt/yr**	**$103-$121/bdt**	**75-mi drive distance from Ligonier, IN**

BDO ZONE ASSETS

- Very low current demand for corn stover.
- Large supply redundancy indicates that haul distances could be minimized.
- Consistent regional demand for corn grain from network of ethanol production facilities and livestock operations.
- Parcels at Ligonier Industrial Park available with electric, natural gas, water, wastewater, and fiber-optic connections and services.

BDO ZONE LIABILITIES

- Time window for baling operations is typically less than 25 days.
- Baling is unlikely to occur on many farms during years with high fall precipitation.
- Potential competition for regional trucking capacity during fall harvest period.
- Significant CAPEX investment required for baling, trucking, and storage, unless a third-party baling and trucking company engaged.

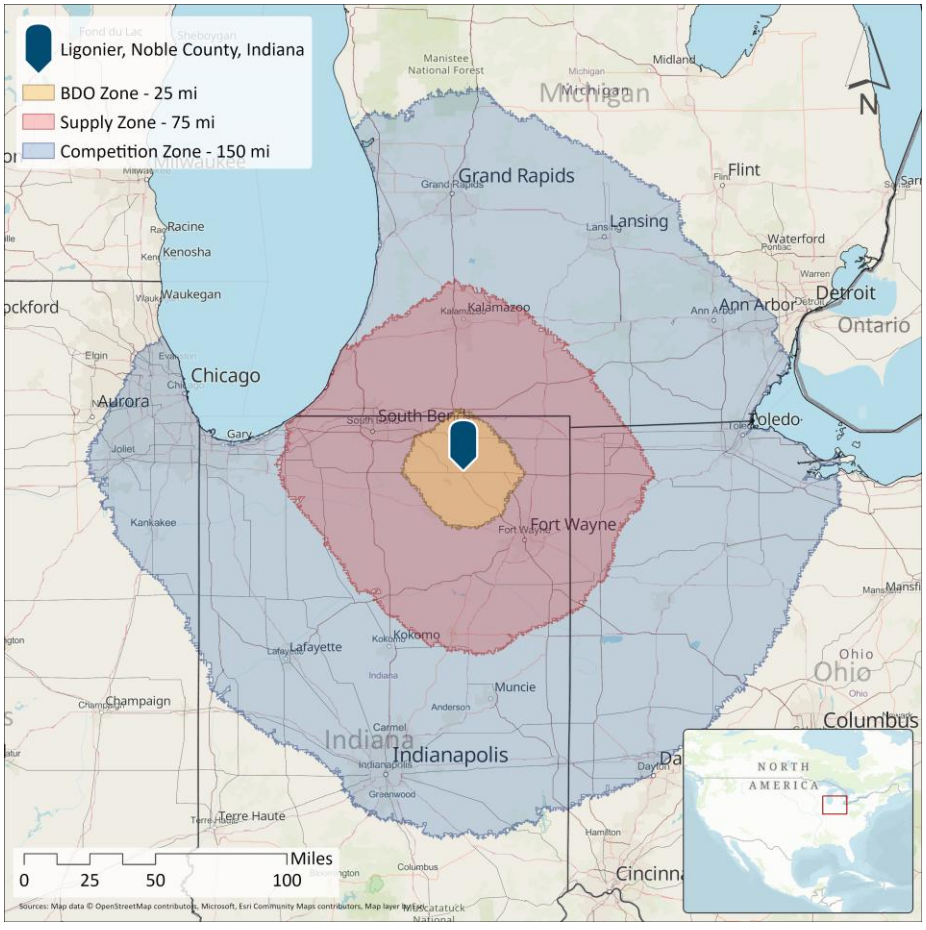
RATING GRADE

The Noble County, IN, Biofuel 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.

NOBLE COUNTY, IN BDO ZONE



ANALYST NOTES

Northern Indiana has some of the most productive cropland in the Midwest. Corn acreage in the Supply Zone has averaged 1.7 million acres over the 2015-2024 period, resulting in a theoretical availability of 6.0 million bone dry tons per year (bdt/yr) of corn stover. Farmers in the region tend to plant corn every other year and many are likely willing to sell stover under the right conditions.

A total of 475,000 bdt/yr of corn stover is estimated to be available for new projects within a 75-mile drive distance of Ligonier at low risk. The delivered price at an average transport distance of 50 miles is estimated to range from $103-$121/bdt, depending on farmers' valuation of the nutrient replacement value of stover and baling costs. A description of the methods used to estimate the rated quantities and prices is presented in Section B.

Risks were assessed using 75 Risk Indicators from the US Standard for Biomass Supply Chain Risk (BSCR). Details of the risk assessment are presented in Section C. The following is a summary of the most significant assets and liabilities of the region, as inferred from the risk assessment.

BDO ZONE ASSETS

The rated quantity of 475,000 bdt/yr represents less than 10% of the total theoretically available corn stover in the Supply Zone. This large feedstock supply redundancy buffers many of the identified risks to stover supply, including a large portion (estimated 60%) of generated stover used as soil supplement, seasonal supply variation, interannual supply variation, and any potential negative environmental impacts. The large supply redundancy may also provide the opportunity for project developers to maintain delivered costs near the lower end of the rated price range by procuring from lower-cost suppliers.

The lack of current demand for corn stover is another significant BDO Zone asset. It is estimated that only ~1% of all corn stover generated in the Supply Zone is chopped, baled, and utilized. Current stover markets are restricted to animal bedding and to a lesser extent animal feed supplements. Baled stover is typically used within 5 miles of where it is generated. Two potential stover-based projects are located within 100 miles of Ligonier but both projects are in very early stages of development.

The stability of the regional corn grain industry and the lack of significant interannual variation in corn planted and harvested area are other notable advantages.

BDO ZONE LIABILITIES

The short time window for baling operations represents one of the most significant risks for corn stover-based bioprojects. Stover baling ideally occurs within no more than two weeks following corn grain combine harvesting, as this minimizes moisture and soil contamination. In northern Indiana, corn harvesting runs from mid-October to late-November. Depending on rainfall levels, the number of days per year suitable for baling operations to occur could range from less than ten days (in particularly wet years) to up to 25 days (during falls with below average precipitation). The short window imposes significant logistical challenges related to baler scheduling and bale hauling and storage.

Year-to-year variation in the availability of corn stover is a related risk factor. Corn stover supply is likely to drop considerably in years when rainfall levels are high, as additional machine traffic can damage soils and negatively impact planting operations (particularly on clay soils). For farms where stover baling is allowed despite wet conditions, there is significant risk that bale moisture content will exceed acceptable levels (e.g., >20%). In addition to the risk that above-average precipitation in the fall poses, stover availability will also vary in response to interannual variation in corn grain yield and related precipitation and temperature regimes.

Scale-up requirements for the rated quantity also represent a significant risk factor. There are fewer than ten large square balers currently in the Supply Zone (although there is a far greater number of round balers) and the rated quantity is estimated to require over 100 balers. A mitigator would be an engagement of third-party baling companies that could conduct baling and collection during the harvesting season; availability of such services in the region is uncertain. Flatbed trucking and long-term storage infrastructure represent more modest investment demands.

INFRASTRUCTURE PROFILE

The evaluated property is the Ligonier Industrial Park, a 10-acre developable parcel located along US Highway 6 and Indiana State Road 5 in Noble County, IN. The site is zoned Industrial (I-2), is Indiana Shovel Ready certified, and is owned by the Ligonier Industrial Development Corporation at a list price of $17,500 per acre. The site benefits from in-park utility infrastructure across all categories: electric service is provided by Noble REMC via 12.47 kV three-phase distribution with a substation five miles away; natural gas is provided by NIPSCO through a 4-inch distribution line; water and wastewater are both provided by the City of Ligonier, with a 10-inch water main on site; and fiber-optic telecommunications with 1 Gbps symmetric service are provided by Lig-Tel. Norfolk Southern rail runs along the industrial park corridor; however, no active rail spur currently serves the 10-acre parcel. Fort Wayne International Airport is 35 miles from the site, and Goshen Municipal Airport (general aviation) is approximately 12 to 14 miles away.

SCORING & RATING METHODOLOGY

In assessing the biomass supply chain risk for the Biofuel 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 (Ligonier, IN).

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 Noble County, IN is ***21.13 out of 100, resulting in an 'A' designation.***

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

PROJECT TEAM

PROJECT DIRECTOR
Peter Wolf, PhD
Ecostrat Inc.
peter@ecostrat.com

INFRASTRUCTURE ANALYST
Jaidan Hunt
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

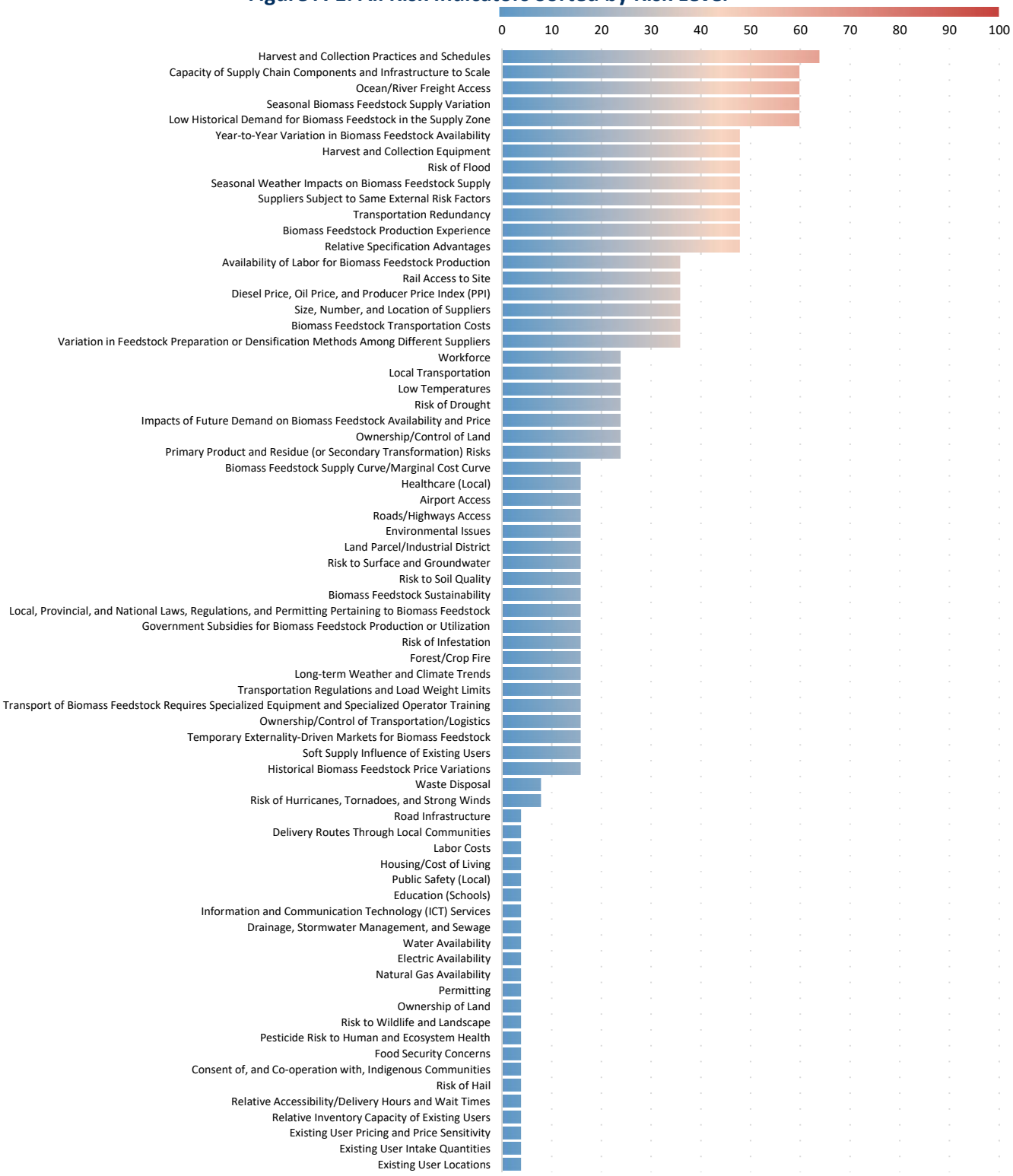


Table A-1. Risk Indicators and Associated Scores

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	4	4	16	NN	16
1.1.2 Seasonal Biomass Feedstock Supply Variation	8	10	80	25%	60
1.1.3 Year-to-Year Variation in Biomass Feedstock Availability	8	8	64	25%	48
1.1.4 Historical Biomass Feedstock Price Variations	4	4	16	NN	16
1.2 Risk Factor: Harvest and Collection Risk					
1.2.1 Biomass Feedstock Production Experience	6	8	48	NN	48
1.2.2 Primary Product and Residue (or Secondary Transformation) Risks	4	6	24	NN	24
1.2.3 Harvest and Collection Practices and Schedules	8	8	64	NN	64
1.2.4 Harvest and Collection Equipment	8	8	64	25%	48
1.2.5 Ownership/Control of Land	6	4	24	NN	24
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	2	2	4	NN	4
1.3.2 Existing User Intake Quantities	2	2	4	NN	4
1.3.3 Existing User Pricing and Price Sensitivity	2	2	4	NN	4
1.3.4 Impacts of Future Demand on Biomass Feedstock Availability and Price	4	6	24	NN	24
1.3.5 Soft Supply Influence of Existing Users	4	4	16	NN	16
1.3.6 Temporary Externality-Driven Markets for Biomass Feedstock	4	4	16	NN	16
1.3.7 Relative Inventory Capacity of Existing Users	2	2	4	NN	4
1.3.8 Relative Accessibility/Delivery Hours and Wait Times	2	2	4	NN	4
1.3.9 Relative Specification Advantages	8	8	64	25%	48
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	4	4	16	NN	16
1.4.3 Transport of Biomass Feedstock Requires Specialized Equipment and Specialized Operator Training	4	4	16	NN	16
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	2	2	4	NN	4
1.4.7 Transportation Redundancy	6	8	48	NN	48
1.5 Risk Factor: Risks Related to Supply Chain Resiliency					
1.5.1 Size, Number, and Location of Suppliers	6	6	36	NN	36
1.5.2 Suppliers Subject to Same External Risk Factors	8	8	64	25%	48
1.6 Risk Factor: Biomass Feedstock Scale-up					
1.6.1 Capacity of Supply Chain Components and Infrastructure to Scale	10	8	80	25%	60
1.6.2 Availability of Labor for Biomass Feedstock Production	8	6	48	25%	36
1.6.3 Low Historical Demand for Biomass Feedstock in the Supply Zone	10	6	60	NN	60
1.7 Risk Factor: Climate and Natural Risks					
1.7.1 Seasonal Weather Impacts on Biomass Feedstock Supply	6	8	48	NN	48
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	6	8	48	NN	48
1.7.7 Risk of Drought	6	4	24	NN	24
1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds	4	2	8	NN	8
1.7.9 Low Temperatures	4	6	24	NN	24
1.8 Risk Factor: Non-Weather Based Externalities					
1.8.1 Diesel Price, Oil Price, and Producer Price Index (PPI)	6	6	36	NN	36
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	4	4	16	NN	16
1.9.2 Local, Provincial, and National Laws, Regulations, and Permitting Pertaining to Biomass Feedstock	4	4	16	NN	16
1.9.3 Backlash Against Biomass Feedstock Development, Procurement, or Usage in the BDO Zone	2	2	4	NN	4
1.9.4 Consent of, and Co-operation with, Indigenous Communities	2	2	4	NN	4
1.9.5 Food Security Concerns	2	2	4	NN	4
1.10 Risk Factor: Sustainability and Environmental Concern					
1.10.1 Biomass Feedstock Sustainability	4	4	16	NN	16

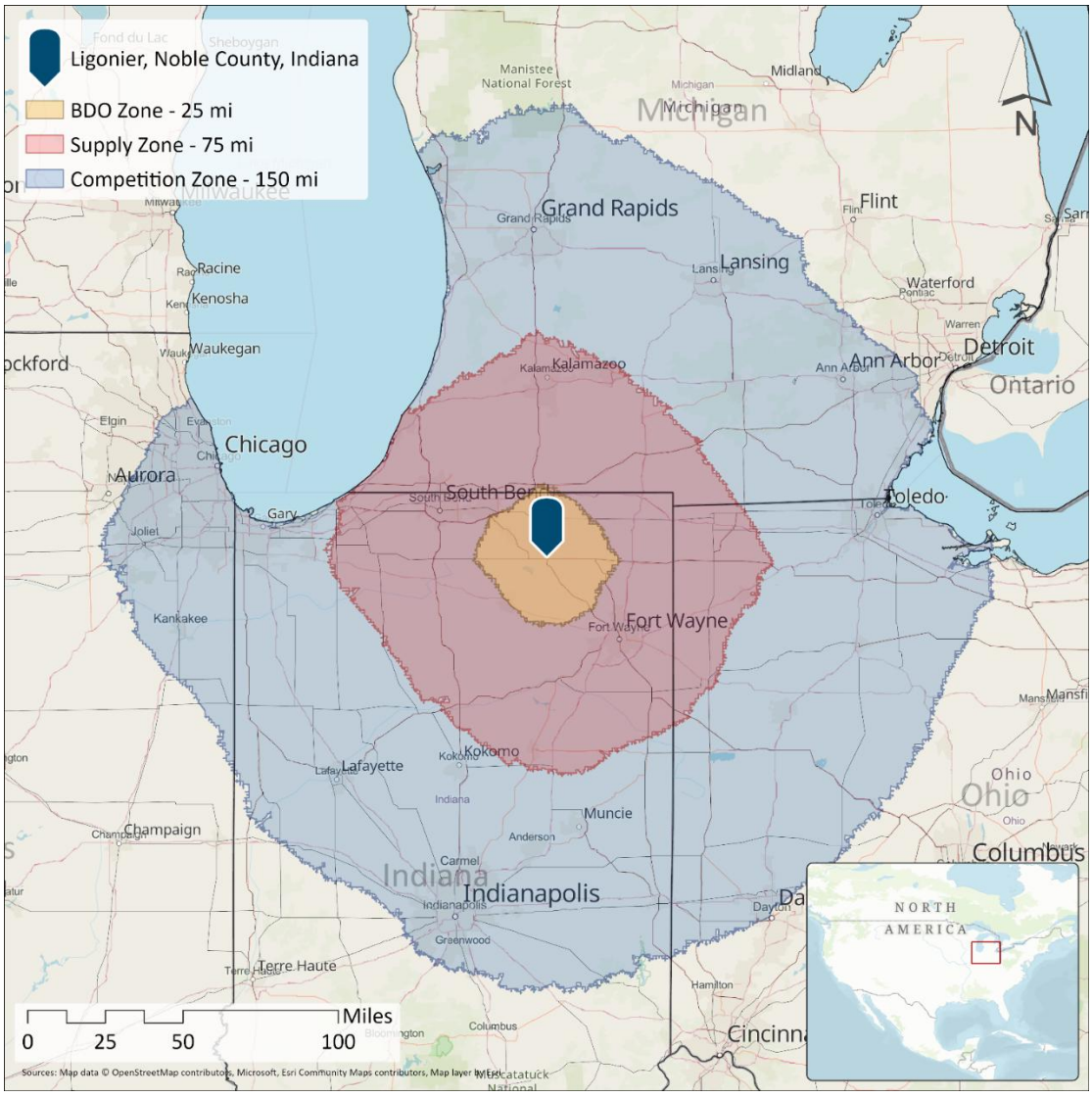
1.10.2 Risk to Soil Quality	4	4	16	NN	16
1.10.3 Risk to Surface and Groundwater	4	4	16	NN	16
1.10.4 Water Use	2	2	4	NN	4
1.10.5 Pesticide Risk to Human and Ecosystem Health	2	2	4	NN	4
1.10.6 Risk to Wildlife and Landscape	2	2	4	NN	4
Category 2.0: Infrastructure					
2.1 Risk Factor: Physical Infrastructure					
2.1.1 Land Parcel/Industrial District	4	4	16	NN	16
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	4	4	16	NN	16
2.2 Risk Factor: Utilities					
2.2.1 Natural Gas Availability	2	2	4	NN	4
2.2.2 Electric Availability	2	2	4	NN	4
2.2.3 Water Availability	2	2	4	NN	4
2.2.4 Drainage, Stormwater Management, and Sewage	2	2	4	NN	4
2.2.5 Waste Disposal	2	4	8	NN	8
2.2.6 Information and Communication Technology (ICT) Services	2	2	4	NN	4
2.3 Risk Factor: Transportation/Logistics					
2.3.1 Roads/Highways Access	4	4	16	NN	16
2.3.2 Rail Access to Site	6	6	36	NN	36
2.3.3 Airport Access	4	4	16	NN	16
2.3.4 Ocean/River Freight Access	10	6	60	NN	60
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)	2	2	4	NN	4
2.4.5 Housing/Cost of Living	2	2	4	NN	4
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	**21.13**

SECTION B: BIOMASS AVAILABILITY AND PRICING

OVERVIEW

The objective of the assessment is to determine the quantity and delivered price of feedstock that could be available to new projects located within the BDO Zone, defined by a 25-mile drive distance from Ligonier, IN (Map B-1). The quantity of biomass that could be available for new projects is determined by subtracting current and anticipated biomass demand within the Competition Zone (150-mile drive distance from Ligonier) from total annual biomass generation within the Supply Zone (75-mile drive distance from Ligonier). The resulting estimate of availability is then divided by a factor of between 1.5 and 4.0 (the Biomass Availability Multiple (BAM)) to account for uncertainty in data, models, assumptions, and future operating conditions. The resulting rated feedstock quantities are conservative estimates of availability for new projects. The price range associated with each rated quantity is determined through outreach and market analysis in the Competition Zone and reflects the anticipated price that a new project would have to pay to secure the rated quantity of biomass.

Map B-1. Map of BDO Zone and Competition Zone



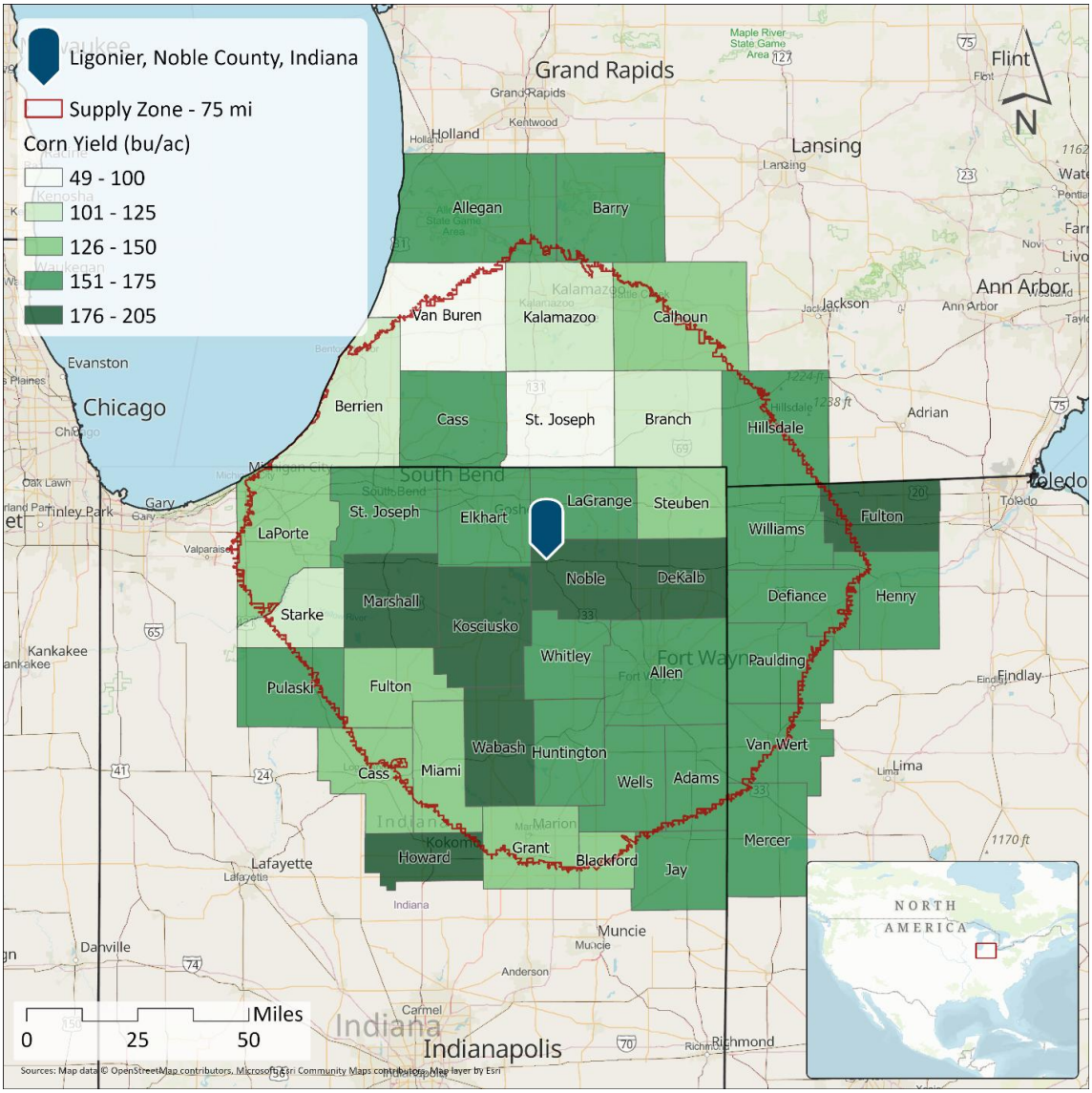
EVALUATED FEEDSTOCKS

Corn stover: The leaves and stalks of corn plants that remain in the field following combine harvesting of corn grain.

SUPPLY ANALYSIS

Map B-2 shows corn yields by county in the Supply Zone. According to the latest 2022 USDA Census data,[1] there were approximately 20,000 cropland farms in the Supply Zone with a total cropland area of 4.85 million acres and an average size of 240 acres. 90% of farms are <500 acres, 5% between 500-1,000 acres, and 5% >1,000 acres. Crop rotations typically involve corn-soybean, with some planting of winter wheat and other cover crops. Cropland area in the Supply Zone has not significantly changed since 1997, with the latest 2022 USDA Census showing a total cropland area of 4,851,000 acres compared to 4,881,000 acres in 1997.

Map B-2. Corn Yield by County in Supply Zone



[1] quickstats.nass.usda.gov

Figure B-3 shows that over the period 2015-2024 interannual variation in the planted and harvested area of corn was relatively modest, averaging +/- 10%. However, there was significant volatility in planted and harvested area over the years 2018-2019 (-31%), 2019-2020 (+64%), and 2020-2021 (-23%). The 31% decline in corn planted area over the 2018-2019 period can be attributed to repeated rainfall events during the spring of 2019, which significantly reduced the time window for planting. Over the 2015-2024 period, corn yields in the Supply Zone have averaged 172 bu/acre and have been increasing. The only year-to-year decline over this period occurred during the 2018-2019 period (-8%), coincidental with the excessively wet spring.

Figure B-3. Historical Planted and Harvested Area and Grain Yield

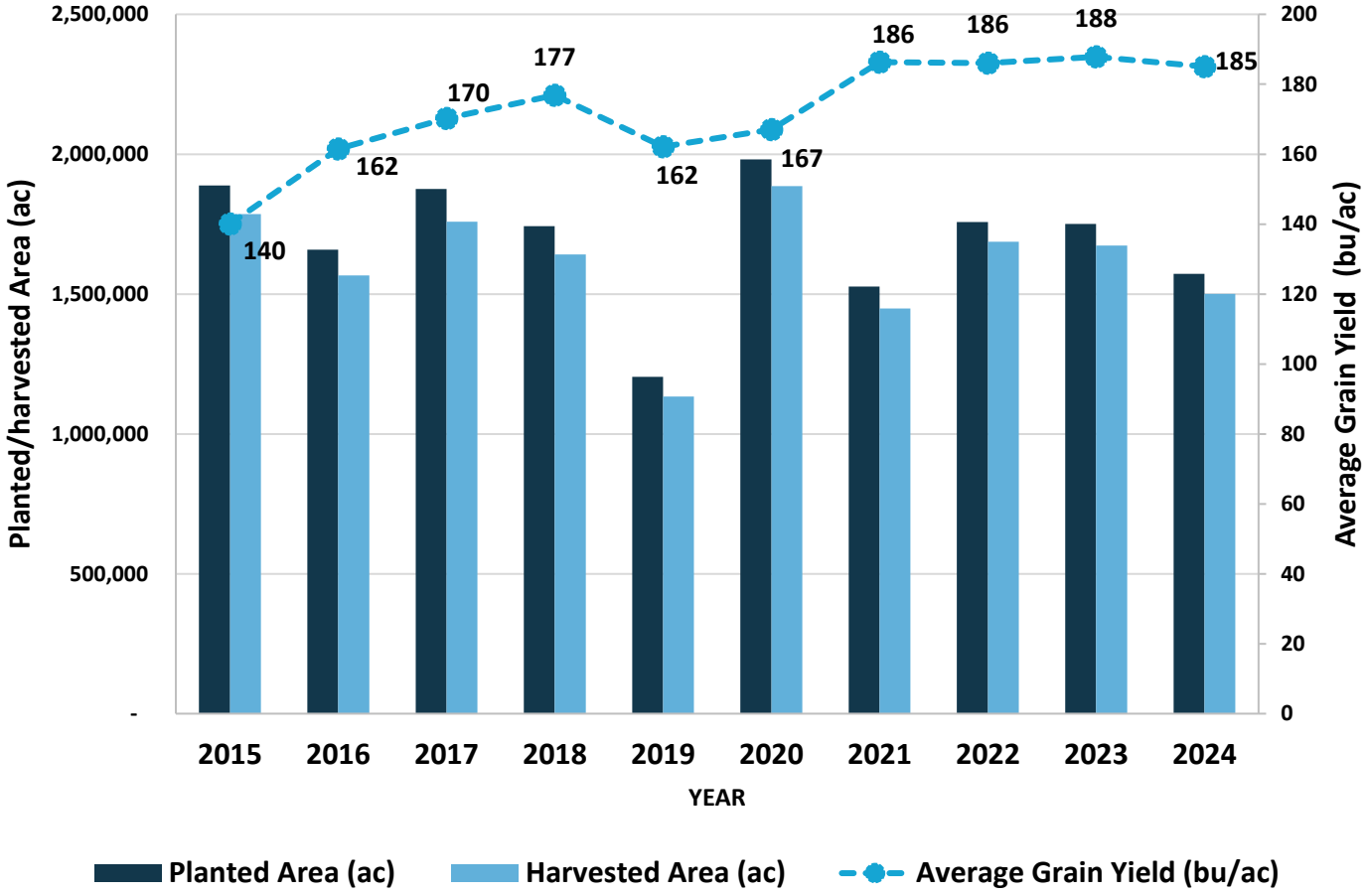


Table B-1 presents how the average corn stover generation was calculated from the total average area and average grain yield. According to our estimates, an average quantity of **6.0 million bdt of corn stover** can be generated annually in the Supply Zone.

Table B-1. Average Annual Stover Generation

Corn Stover Generation Factors	Values
Average annual harvested area (ac)	1,608,000
Average annual grain yield (bu/ac)	172
Average annual grain production (tons)[2]	7,700,000
Stover/Grain Ratio[3]	1.0
Average stover moisture content (wet basis)[4]	22%
Average annual silage generation (bdt)[5]	--
Average annual stover generation (bdt)	**6,000,000**

COMPETITION ANALYSIS

Expected average annual demand for corn stover by demand source is shown in Table B-2. The majority of corn stover generated in the Supply Zone is expected to be unavailable due to farmers' preferences to leave stover in the field so as to maintain soil health for future crops (e.g., to supply nutrients and organic matter to the soil, to protect against soil loss and erosion, etc.). For purposes of the BDO Zone rating, we assume that 60% of all stover generated annually in the Supply Zone will be left in the fields following combine harvesting and therefore will not be available for new projects. This is within the range of sustainable corn stover removal rates published in the literature.[6] Additionally, a maximum of about 1% of all generated stover is expected to be baled and sold to the livestock industry in future years for use as bedding and as a supplemental food source. Therefore, the total amount of corn stover that is estimated to be used for purposes of soil health/protection and the livestock industry in future years is approximately 3.6 million bdt/yr (61% of the generated quantity).

Table B-2. Average Annual Demand for Corn Stover

Demand Source	Percentage of Generated Stover Used
Soil quality management/protection	60%
Livestock bedding and feed	1%
Potential competitors/proposed projects	0%
Average annual use	**61%**

Although current off-farm market demand for corn stover is negligible, two potential industrial competitors were identified through online research. FiberX Products operates a pilot-scale facility in Merrillville, IN (100 miles from Ligonier) but they do not purchase stover from distances greater than 50 miles. There is some risk that this facility could increase

[2] A conversion factor of 35.71 bu/ton was applied (www.farmbooks.ca/Converter.html)
[3] www.sciencedirect.com/science/article/abs/pii/S1364032112001062
[4] Ebadian, M.; Sokhansanj, S.; Lee, D.; Klein, A.; Townley-Smith, L. Evaluating the Economic Viability of Agricultural Pellets to Supplement the Current Global Wood Pellets Supply for Bioenergy Production. Energies 2021, 14, 2263. https://doi.org/10.3390/en14082263).
[5] quickstats.nass.usda.gov (historical survey data for silage harvested area and yield)
[6] Rees, J. et al. (2017). Corn stover removal: Nutrient value of stover and impacts on soil properties. CropWatch. University of Nebraska–Lincoln, Institute of Agriculture and Natural Resources. https://cropwatch.unl.edu/2017/corn-stover-removal-nutrient-value-stover-and-impacts-soil-properties; Karlen, D.L. et al. (2021). Science-based maize stover removal can be sustainable. Agronomy Journal, 113(4), 3796–3811. https://doi.org/10.1002/agj2.20724; Battaglia, M. et al. (2021). The broad impacts of corn stover and wheat straw removal for biofuel production on crop productivity, soil health and greenhouse gas emissions: A review. GCB Bioenergy, 13, 45–57. https://doi.org/10.1111/gcbb.12774; Bayer Crop Science. (2024, January 30). *Effects of corn stover removal on nutrient management*. Crop Science United States. https://www.cropscience.bayer.us/articles/bayer/effects-of-corn-stover-removal-on-nutrient-management

its procurement radius through scale-up, but this is regarded as unlikely. The other potential competitor is the Verbio South Bend Ethanol plant in South Bend, IN, approximately 50 miles from Ligonier. The facility currently operates as a conventional corn grain ethanol plant but Verbio is investing in an RNG production system at the site. The system would use by-products of corn grain-to-ethanol processes ('stillage") as a primary feedstock, with agricultural residue such as corn stover being used as a supplementary feedstock.

RATED QUANTITIES AND PRICING

It is estimated that a total of 1.9 million bdt/yr of corn stover could be available for new projects at low risk. A Biomass Availability Multiple (BAM) of 4.0 was selected to account for uncertainty in the accuracy of existing data, scale-up readiness, historical harvesting practices and volumes, farmer participation, and annual changes in stover generation and demand. Among these factors, farmer participation is the most challenging to estimate and quantify. Several factors are known to impact producers' decision to participate in a new biomass project, including: stover price, contract terms, stover harvesting experience, stover removal rate, nutrient loss, soil erosion risk, distance to the biomass processing facility, harvest timeliness, crop rotation, and others.[7, 8, 9, 10, 11] Literature suggests that, among these factors, removal rate and price appear to have the highest impact on producers' participation.

Table B-3. Annual Stover Availability and Rated Quantity Calculation

Availability Factors	Values
Average annual stover generation (bdt)	6,000,000
Average annual demand (bdt)	3,600,000
Collection efficiency[12]	80%
Annual stover availability	1,900,000
Biomass Availability Multiple (BAM)	4.0
Rated Quantity (bdt) [13]	**475,000**
Removal % from total	**8%**

Table B-4 shows the various cost/price components used to estimate the delivered price range. Note that **the farm gate price ranges of $74-$92/bdt**, or **$39-$45/bale** are lower than current hay prices of $106-$154/bdt, or $54-$78/bale.[14] While hay prices are not necessarily an accurate indicator of corn stover prices, their historical fluctuations presented in Figures E-1 and E-2 could provide a relevant picture of the seasonal demand from the cattle sector. A stover project would most likely stabilize any corn stover price fluctuations by securing quantities at a set price that included the nutrient replacement value and producer markup, as presented in Table B-4.

[7] Corn stover as a biofuel feedstock in Iowa's bio-economy: An Iowa farmer survey
[8] Corn stover for bioenergy production: Cost estimates and farmer supply response
[9] Is Corn Stover Harvest Predictable Using Farm Operation, Technology, and Management Variables?
[10] Survey indicates farmers can supply corn stover biomass, but questions remain
[11] The "Stover Availability versus Supply" Puzzle and Contracting Options for Cellulosic Biomass
[12] Optimal stover collection ensures a high-quality stover for vast majority of stover projects (e.g., biofuels, bioenergy, etc.).
[13] Rounded value
[14] quickstats.nass.usda.gov

Table B-4. Farm Gate and Delivered Price Ranges

Price/Cost Component	$/bdt	$/bale[15]
Chopping, Windrowing, Baling, Moving Cost[16]	$40 - $50	$22 - $24
Nutrient Replacement Value (paid to producer)[17]	$25 - $30	$12 - $15
Overhead/Markup (15%)[18]	$10 - $12	$5 - $6
Price at farm gate	$74 - $92	$39 - $45
Av. Transportation Cost (50-mi) [19]	$29	$15
Delivered Price	**$103 - $121**	**$53 - $60**

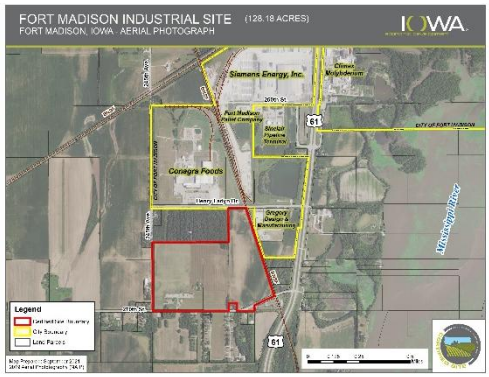
The estimated price range at the farm gate is corroborated by bale price information published by Iowa State University (ISU).[20] The ISU reports a price range of $31-$62/bale, with the lower end of the range representing the minimum value a farmer would accept given nutrient content and baling costs, and the higher end of the range representing the value of stover as a feed supplement. The same report indicated a corn stover auction price range of $30-$45/bale.

OPERATIONAL CONSIDERATIONS

If a new project located in the vicinity of Ligonier, IN utilized the rated quantity of corn stover, it is estimated that approximately **116 balers, 232 tractors,[21]** and **30 trucks with 53-ft flatbed trailers[22]** would be required. Outreach indicates that there are not many square balers that operate in the Supply Zone. Consequently, a new project proponent will be required to invest in high-density square baling equipment or outsource baling and collection to a large third-party baling company. The limited time window for baling operations should also be considered. To optimize feedstock quality, baling operations will ideally occur immediately following combine harvesting of corn. Combine harvesting of corn typically occurs from mid-October to late-November but in most years the window is less than 25 days due to intermittent wet weather during this period.

[15] Assumes large round or square bales with an average weight of 1,300 lbs or 0.51 bdt (22% moisture content)
[16] www.extension.iastate.edu/agdm/crops/html/a3-10.html
[17] This is a cost paid by project proponents to producers. It includes a 15% producer markup. Nutrient replacement value was calculated using an in-house calculator with current fertilizer prices for Illinois, as data for Indiana is not available (www.ams.usda.gov/mnreports/ams_2863.pdf) and nutrient contents (isuaamncus122stg.blob.core.windows.net/shop/PM1688.pdf)
[18] Includes compensation for temporary bale storage at producers' site
[19] Assumes $0.25/bdt/loaded mile, 53 ft flatbed trailer, 39 bales/load, 22% stover moisture content, loading/unloading cost.
[20] https://www.extension.iastate.edu/agdm/crops/html/a1-70.html
[21] Assuming 2 tractors: one for the baler and one for the bale collector at 10-hr day x 40 harvest days per year x 25 bales/hr (www.extension.iastate.edu/agdm/crops/pdf/a3-24.pdf)
[22] Assuming 4 trips/day for 240 days/year

SECTION C: INFRASTRUCTURE



PROPERTY OVERVIEW

Site Name:	Ligonier Industrial Park
Address:	West Perry Rd
City:	Ligonier
State:	IN
County:	Noble
Acres:	10
Pricing Note:	$17,500/acre
Topography:	Gently rolling
Zoning:	Industrial

SITE CONTACTS

Economic Development Contact
Melanie Kellogg
Be Noble
260-636-3800
melanie@noblecountyedc.com

ADDITIONAL NON-RATED SITES

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

TRANSPORTATION

The Ligonier Industrial Park is served directly by US Highway 6 and Indiana State Road 5. The nearest interstate access is approximately 22 miles to I-80/I-90 (the Indiana Toll Road), and approximately 37 miles to I-69. Rail access is provided to the Ligonier Industrial Park by Norfolk Southern Corporation, a Class I carrier. An active freight rail runs just north of Ligonier and cuts through the Ligonier Industrial Park; however, the site does not currently have an active rail spur and is not functionally rail-served at this time. Fort Wayne International Airport (FWA) is located approximately 35 miles southeast of the site and Goshen Municipal Airport is approximately 12 to 14 miles from the site.

ELECTRIC SERVICE

Electric service is provided by Noble REMC, with the nearest substation located 5 miles from the site. The existing infrastructure includes 12.47 kV three phase power. **Contact:** Kevin Dreibelbis, kevin.dreibelbis@nobleremc.com

NATURAL GAS

Natural gas is provided by NIPSCO, with a 4" natural gas line. **Contact:** Dana Berkes, dberkes@nisource.com

WATER

Water is provided by the City of Ligonier, with a 10" water line. **Contact:** Jeff Boyle, water@ligonier-in.gov

WASTEWATER

Wastewater treatment is provided by the City of Ligonier, with a 10" sewer line to site. **Contact:** Jeff Boyle, water@ligonier-in.gov

TELECOMMUNICATIONS

Telecommunication services are provided by Lig-Tel, with Telecom accessible in the park. The Park has fiberoptic internet service, with a maximum bandwidth of 1 gig symmetrical. **Contact:** Mike Troup, mike@ligtel.net

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: Delivered costs are flat up to a distance of 50 miles, reflecting the assumption that trucking companies will bill on an hourly basis, that average travel speed is 50 miles per hour, and that loading/unloading time will total one hour. After travelling 50 miles, delivered costs increase by approximately $2/bdt for every 5-mile increment. There is significant supply redundancy in the Supply Zone: at a distance of 50 miles, 4x the rated quantity is generated (Figure E-4, Appendix E). While actual project-available quantities and pricing will depend on negotiating with corn growers, this information indicates that risk associated with excessive transport distances is 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**

1.1.2 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,[23] which can manifest in shortages and higher costs for Issuers.

Risk Information: Corn stover availability in the Supply Zone is tightly constrained by seasonal weather, with the window for baling operations typically running from mid-October through late November following grain combine operations. The region's heavy clay soils can become saturated in wet falls, making field entry by baling equipment highly damaging and sometimes impossible. Minimizing stover bale moisture content and soil contamination requires that baling operations closely follow combine harvesting (e.g., within one week). Stover above approximately 20% moisture risks

[23] Golecha & Gan, 2016.

mold, spontaneous combustion, and dry matter loss in storage. There are also significant logistical challenges and uncertainties related to scheduling the ~100 baling units required for the rated quantity so that they closely follow combine harvesting operations.

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 very high, therefore the RRI is 10 out of 10.	**10**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 80 out of 100.	**80**
Mitigation/Notching	**Notch**
RRL Mitigation (Notch) No adjustment. *RRI Mitigation (Notch)* The impact of low stover availability during wet falls can be mitigated by stockpiling during good-weather years. The Total Notch (RRL Notch) X (RRI Notch) is 25%.	**25%**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 60 out of 100.	**60**

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, particularly with agricultural biomass.

Risk Information: Interannual variation in corn stover availability is significant and is mainly a product of interannual variation in corn yield, crop rotations, and weather. Corn grain yields in the Supply Zone varied from a low of 140 bushels per acre in 2015 to a high of 188 bushels per acre in 2023; because stover production is allometric to grain production, interannual variation in stover production over this period would have been of a similar magnitude. Year-to-year variation in weather will also play a significant role in stover availability. Baling operations will ideally occur immediately following corn grain harvesting during this period, as this serves to reduce the moisture content and soil contamination of stover bales. In optimal conditions, there are about 25 days during this period when it is sufficiently dry to bale stover (typically during the afternoon and evening). However, in particularly wet years, the number of days when baling can occur is significantly reduced (e.g., 14 days). Alternatively, baling can continue in wet conditions but with significantly increased bale moisture content. If conditions are persistently wet, many farmers will not allow baling to occur at any time during this period to minimize soil disturbance. Risk is assessed as high.

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**
RRL Mitigation (Notch) No adjustment. *RRI Mitigation (Notch)*	**25%**

The impact of low stover availability during wet falls can be mitigated by stockpiling during good-weather years. The Total Notch (RRL Notch) X (RRI Notch) is 25%.
Loaded RI Score — **Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100. — **48**

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: Although historical price series for baled stover are not available, it can be concluded that historical price variation has not been significant due to lack of demand. There is some indication that stover demand and pricing can increase in drought years, but the extent of this increase is unknown. 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**

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 stover or other agricultural residue supply chains where farmers or producers may have no previous experience.
Risk Information: Outreach identified a small number of custom baling operations with one to two large square balers each, primarily serving the local livestock bedding market. A fiber-extraction company in a neighboring Indiana county, founded in 2022 and licensing Purdue University technology, has procured approximately 4 million pounds of corn stover to date and represents the most advanced commercial-stage operation with relevant regional experience. Overall, the lack of regional experience in corn stover supply at scale is assessed as a medium-to-high risk. While farmers and custom agricultural service providers in the region are specialists in cropland management and machine operation, there are significant logistical challenges associated with scheduling baling operations to closely follow combine harvesting, coordinating the simultaneous operation of over 100 baling units over a baling window of less than 25 days, and trucking and storing the bales so as to minimize moisture content.
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

1.2.2 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., wheat straw, corn stover), then production can be subject to variables beyond suppliers' control (e.g., changing demand for primary crop prices).

Risk Information: Corn grain is the primary agricultural product in the region, consumed principally by ethanol production facilities and the poultry and hog farming industries. Ethanol manufacturers use approximately 40% of the U.S. corn crop for ethanol and related co-products, with demand driven primarily by the domestic transportation fuel market. US sales of E15 reached a record 1.24 billion gallons in 2024, an increase of 11% over 2023, signaling continued near-term demand for corn as a primary feedstock. High rainfall levels can also impact the planted acreage of corn, reducing the amount of stover available in that year (see RI 1.1.2). Due to the strength of the US corn industry, risk is assessed as low to moderate.

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 medium, therefore the RRI is 6 out of 10.	6
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

1.2.3 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 example, agricultural feedstocks and energy crops have optimal harvesting windows to ensure minimal moisture content. In certain BDO Zones, these harvesting windows may coincide with heightened weather risks, such as frost or rain.

Risk Information: Corn stover baling operations will closely follow grain combining operations from mid-October through late November. Baling is preceded by chopping and windrowing stover, usually during or immediately following combining. Some combine operators can windrow stover in a single pass using rear spreader attachments configured for rowing, eliminating a separate raking operation and reducing costly field traffic. Baling runs most productively from early afternoon into evening to avoid morning dew, with effective daily windows of roughly five to eight hours under favorable conditions, and production rates of 50–60 large square bales per hour under ideal circumstances. During a relatively dry fall, there is a window of about 25 days for baling operations to occur. During wetter years, this window is significantly reduced. Due to the large number of baling units that must be coordinated simultaneously over this narrow window to ensure an adequate supply and quality of feedstock, risk is assessed as high.

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

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: Large square balers in 3×3×8 and 3×4×8 configurations are preferred for industrial supply due to payload density and handling efficiency. There are a limited number of large square balers in the region, with most being round balers. Tractors required for stacking bales are ubiquitous. Risk is assessed as medium due to the likelihood that a mix of round and square bales will be used in the early years of the Project. The supply chain is expected to shift to large square bales only as the project scales and potential suppliers become confident in the reliability of offtake. Custom agriculture companies contacted during outreach indicated that they would be willing to invest in baling equipment under multi-year procurement agreements. Due to the need to purchase over 100 large square balers to attain the rated quantity, risk is assessed as high.

Raw Risk Likelihood (RRL) The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	**Score** **8**
Raw Risk Impact (RRI) The risk impact is deemed high, therefore the RRI is 8 out of 10.	**Score** **8**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 64 out of 100.	**Score** **64**
Mitigation/Notching Risk can be effectively mitigated through an engagement of a third-party baling company. The largest custom baling company in the country has 40 – 50 balers.	**Notch** **25%**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	**Score** **48**

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: Cropland in the region is cultivated by a mix of private landowners and leasing farmers. No public land is relevant to corn stover procurement, and no cooperative or institutional land ownership structures were identified. Overall, the mixed tenure structure could complicate stover procurement: a project developer may need to secure separate agreements with the farming operator – who controls harvest logistics – and the non-operating landowner.

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**

1.2.6 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. 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.[24]

Risk Information: As described in Risk Indicator 1.2.4, it is likely that a mix of square and round bales of varying dimensions will be supplied to a future project in initial years due to the lack of available large square baling units in the region. Varying baler model types and bale dimensions will lead to variance in baled fiber length and moisture absorption and mass loss resulting from long-term storage. Once the project is proven and confidence in sustained offtake increases, broad investment in large high-efficiency balers could follow. Alternatively, the project could involve the vertical integration of baling activities or could provide incentives for third parties to make the required investment.

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

Risk Information: The current market for corn stover is limited and local, driven almost entirely by livestock operations, including dairies, feedlots, poultry farms, and other farm types. The baled stover is used for bedding and supplemental

[24] Huhnke, 2018.

feed. Outreach contacts confirmed that dairies typically source stover from within a few miles of their facilities. Most stover is left unutilized each year.

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**

1.3.2 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: Current demand for corn stover in the Noble County supply zone is very limited. Outreach interviews consistently estimated that fewer than 1% of stover generated in the region is baled in a typical year, with the vast majority left on fields. Existing users procure stover in small volumes, typically measured in dozens to a few hundred bales per season, and only from nearby fields within a short trucking radius. No systematic data on regional stover offtake volumes is publicly reported, reflecting the absence of any formal market structure.

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**

1.3.3 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: Corn stover prices are not formally tracked, as stover is not highly valued by the livestock industries. Iowa State University research estimates the negotiated price range for a 1,500-pound corn stover bale to be between approximately $31 and $62 per bale, with the lower bound representing the producer's cost of harvest and nutrient replacement and the upper bound representing its feed value to a livestock buyer. The same source indicates a stover auction price of $30-$45/bale.[25] Given the limited demand in the area, it is unlikely that prices paid by a new project for stover would be affected by price competition.

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**

1.3.4 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, 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: Within and adjacent to the Noble County BDO Zone, custom balers reported that the dairy sector has been consolidating — small operations of under 100 cows have largely closed, leaving mid-size dairies of 100–300 cows as the dominant stover consumers. A fiber-processing company in a neighboring Indiana county has recently emerged as the only known industrial-scale stover user in the broader region, operating at a pilot/early-commercial stage. No ethanol plants currently procuring corn stover are located within the 75-mile supply zone, though an integrated biorefinery under construction in St. Joseph County represents a potential future competitor for regional corn grain and potentially stover.

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 medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 24 out of 100.	**24**

[25] https://www.extension.iastate.edu/agdm/crops/html/a1-70.html

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

1.3.5 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: Business relationships between existing stover users and corn farmers are informal, transactional, and short-term. Local dairies that have historically sourced stover from nearby farmers benefit from these relationships and can exert soft supply influence simply by being known, trusted, and geographically proximate buyers. Local custom balers who currently serve both the hay and stover markets also act as informal brokers with pre-existing relationships across the farming community. A new industrial stover buyer entering the market would need to establish credibility and trust with farmers who are accustomed to doing business locally and informally. However, overall there is low risk of soft supply influence from existing users due to low demand.

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

1.3.6 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. For example, an Issuer using corn stover as a feedstock would not typically compete with the higher-end animal feed market. However, in times of significant hay shortage (e.g., during drought), farmers may use corn stover as hay replacement, driving the price of stover feedstock and decreasing its availability for bio-projects.[26]

Risk Information: The most significant externality-driven market for corn stover is the drought or hay-shortage emergency market, in which livestock operators who normally rely on hay for winter feed turn to stover as a lower-cost substitute when hay supplies tighten or prices spike. Corn stover demand for feed and bedding increases markedly during drought years, when reduced forage and corn production drive both hay and dried distillers grain prices to elevated levels, causing stover to become comparatively more attractive to livestock buyers. Outreach contacts described several recent seasons in which local dairies and beef operators sought stover more aggressively due to hay shortfalls. A secondary externality-driven use is stover for erosion control and mulching on construction sites and disturbed soils, though this market is limited in scale and sporadic. Seasonal demand from equestrian operations — which use straw and stover interchangeably for bedding — provides a small but consistent outlet, particularly in the

[26] Bergtold, 2018.

Noble and Lagrange county areas, where Amish and hobby farms are prevalent. None of these alternative markets are large enough to materially tighten supply for an industrial offtake program.

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**

1.3.7 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: Existing stover users are primarily small-to-mid-size dairies, feeder cattle operations, poultry farmers, and horse facilities. These operations have very limited on-site inventory capacity relative to what an industrial supply program would require. Livestock operations typically store only what they need for the immediate feeding season, usually a few dozen to a few hundred bales under cover in pole barns or stacked outside with tarp protection. Very few operations maintain covered, weather-controlled storage suitable for preserving bale moisture quality over a multi-month period. The fiber-processing company operating in the neighboring Indiana county is the only regional user known to be developing more systematic intermediate storage capacity. The risk associated with the aggregate stockpiling potential of existing users 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**

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: Existing stover users are overwhelmingly farm-based livestock operations rather than commercial receiving facilities, meaning that delivery logistics are informal and highly variable. Dairies and cattle operations typically accept bale deliveries during daylight hours with no formal scheduling system, and wait times are negligible. There are

no dedicated receiving docks, tipper trailer systems, or walking-floor trailer unloading infrastructure at existing users' facilities. The fiber-processing company in the neighboring Indiana county represents a more structured receiving operation with defined delivery windows, but outreach contacts indicated that scheduling flexibility remained limited and that the company's intake infrastructure was still being refined as the operation scales up.

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: Livestock operations impose minimal feedstock specifications: dairies and cattle operators accept stover at relatively high moisture levels (up to 25–30%), tolerate significant variation in bale weight and density, and have no requirement for particle size reduction or chemical composition analysis. This low specification threshold is a disadvantage for a competing industrial user: suppliers are accustomed to selling to buyers who impose few requirements, meaning that introducing stricter moisture, density, or ash content specifications for industrial use may require farmer education and additional field management steps. Risk is deemed high.

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**
Risk could be mitigated through an engagement of a large-scale third-party custom baler with experience baling stover for industrial users. Ideally, a contractual arrangement is achieved where a third-party baling company commits to feedstock specifications.	**25%**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	**48**

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: Regional agricultural trucking rates for flatbed service in northern Indiana range from approximately $130–$180 per hour. Modeled transportation costs for corn stover are estimated at approximately $25/bdt for hauls up to 50 miles, rising to approximately $37/bdt at 75 miles (Figure E-3, Appendix E). For an average transportation distance of 50 miles, transportation costs comprise about 20% of total delivered costs. Despite having some of the highest state fuel taxes in the country, transportation costs – as inferred from trucking rates – are low compared to other parts of the USA. Risk is assessed as medium due to the uncertain long-term effect of the 2026 Iran War on diesel prices in the US Midwest.

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 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: Flatbed trucking capacity in northern Indiana is fragmented and not purpose-built for agricultural residue transport. Outreach interviews identified a small number of regional trucking companies offering flatbed services. A trucking equipment dealer in Noble County indicated awareness of several individuals and small operations — including a farm-based operator with four flatbed trucks — with flatbed capacity in the area. Most regional flatbed operators primarily haul steel, piping, and industrial materials rather than agricultural residue. Nearly all grain farmers own semi tractor power units, but dedicated flatbed trailer ownership among farmers is limited. Since flatbed trailers do not represent a significant up-front investment barrier, and since there are a number of larger companies that offer flatbed trucking services in the region, 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**

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: Corn stover transport does not require specialized equipment – standard 48- or 53-foot flatbed semi-trailers are appropriate. Outreach contacts noted that flatbed drivers hauling baled stover must be familiar with proper load securement using strapping or netting, and that bale stacking configurations affect both payload and stability. The regional trucking market has limited bale-hauling experience: the dominant flatbed operators in the area serve the steel and manufacturing industries and are not accustomed to the seasonal, harvest-driven scheduling that stover procurement requires. However, load securement is a standard operating practice and therefore the unique load securement requirements of agricultural bales are not expected to lead to difficulties.

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**

1.4.4 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: Northern Indiana is served by a grid of state highways and county roads typical of the Indiana Corn Belt, with no significant urban chokepoints between primary production areas and the proposed facility site in Ligonier. Outreach contacts and regional trucking operators did not identify any history of public opposition to agricultural trucking in the area, and corn harvest-related truck traffic is a well-established seasonal norm in the region. 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**

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: Indiana enforces a standard maximum gross vehicle weight of 80,000 lbs for commercial trucks, consistent with federal limits, with maximums of 20,000 lbs per single axle and 34,000 lbs per tandem axle. Agriculture permits in Indiana allow gross vehicle weights up to 97,000 lbs for loads transported from the point of harvest to the first point of delivery. A flatbed semi loaded with 33–35 large square bales of corn stover at 1,000–1,200 lbs per bale can approach or exceed 80,000 lbs GVW, meaning weight management will be relevant for full loads. Indiana's spring frost law window is shorter than neighboring northern states, and because corn stover is harvested in the fall rather than spring, frost law restrictions – which tend to be in place from February to April – are not a meaningful operational constraint for this supply chain. One flatbed operator contacted during outreach noted no seasonal road problems in the area, citing effective snow clearing as sufficient to maintain year-round access on state and county routes.

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: Road infrastructure in the Supply Zone is generally adequate for heavy agricultural truck traffic, though county roads vary in condition and load-bearing capacity. In 2024, INDOT awarded approximately $18.2 million in federal infrastructure funding to northeast Indiana counties including Noble County, targeting local road and bridge improvements. Noble County specifically received $5.12 million in federal grants for the replacement of two county bridges over the Elkhart River, indicating that some rural bridge infrastructure is at or near end of useful life and subject to ongoing replacement. A regional flatbed carrier contacted during outreach described Indiana roads generally as being in good condition, contrasting them favorably with neighboring Michigan. 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**

1.4.7 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: Flatbed trailer availability in the Supply Zone is present but not purpose-built for agricultural residue, creating meaningful redundancy risk during the critical fall harvest window. Outreach identified one regional flatbed carrier with approximately 20 trailers and a smaller operator. A grain services contact also noted the presence of nearby trucking companies with fleets of 25–30 flatbed trucks, most serving the regional steel and manufacturing industries. Nearly all grain farmers in the region own semi tractor power units, but dedicated flatbed trailers among farm operators are limited — most farmers own grain hopper trailers, not flatbeds, and would need to invest in flatbed trailers to participate in stover transport.

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**

1.5 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 potential supplier base for corn stover consists of farmers operating within the 75-drive-mile Supply Zone, as well as custom baling companies. Outreach interviews identified farm operations ranging from a few hundred acres to 3,000–10,000 acres, with Purdue Extension contacts estimating an average row crop farm size of approximately 1,000–1,500 acres in the region, and a small number of very large operators at 5,000–10,000 acres. On a corn-soybean rotation, a 1,500-acre farm would have roughly 750 corn acres in any given year, yielding approximately 2,250–3,750 harvestable stover bales annually at 3–5 bales per acre — enough to fill two to four truckloads. The largest potential suppliers are the handful of 5,000–10,000 acre operators, who could individually supply 15,000–50,000 large square bales in a good year. Currently, only one Noble County custom baling operation with two large square balers and a fiber-processing company in a neighboring Indiana county are meaningfully active in stover procurement; the broader supplier base remains latent and would need to be activated through outreach and contracting.

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

1.5.2 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: All potential corn stover suppliers are subject to the same set of external risk factors. The most significant shared risk is weather: a wet fall – which is historically more likely than not in this region – affects all farmers simultaneously. Other shared risks such as corn grain commodity market conditions (which affect planted area and potential corn stover availability) and baling equipment scarcity are low-risk items. Risk is assessed as high due to the significant negative impact wet falls are likely to have on baling operations. Mitigation of this risk is possible through stockpiling additional volumes during good-weather years.

Raw Risk Likelihood (RRL) The risk likelihood is deemed high, therefore the RRL is 8 out of 10.	**Score** **8**
Raw Risk Impact (RRI) The risk impact is deemed high, therefore the RRI is 8 out of 10.	**Score** **8**
Gross Risk Indicator (GRI) The Gross Risk Indicator (RRL X RRI) is 64 out of 100.	**Score** **64**
Mitigation/Notching The impact of low stover availability during wet falls can be mitigated by stockpiling during good-weather years.	**Notch** **25%**
Loaded RI Score The Loaded RI Score ((1-Total Notch) X GRI Score) is 48 out of 100.	**Score** **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: Baling capacity is the most significant scale-up bottleneck, as the Supply Zone currently has less than ten large square baling units. Outreach contacts noted that new high-efficiency large square balers cost between $120,000–$150,000 and would only be purchased with reliable multi-year offtake contracts. To a lesser extent, flatbed trailer capacity is also constrained. Long-term storage infrastructure for bales would also need to be developed. A grain services retailer in Noble County noted that farmers would invest in necessary equipment if economics were right, and that tractor power units – the one component farmers already universally own – are not a constraint. Overall, supply

chain scale-up is feasible but requires coordinated capital investment across baling, trucking, and storage, none of which will occur without committed offtake agreements in place first.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very high, therefore the RRL is 10 out of 10.	**10**
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 80 out of 100.	**80**
Mitigation/Notching	**Notch**
Engagement with an experienced large-scale third-party baler would partly mitigate the risk. The largest third-party baler in the country has 40 – 50 balers, potentially providing for about half of necessary baling infrastructure.	**25%**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 60 out of 100.	**60**

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: Labor availability for corn stover harvesting in the Supply Zone is constrained by the same structural pressures affecting rural Indiana agriculture broadly. A regional flatbed carrier noted that driver shortages are a persistent problem in the area, with larger companies actively recruiting drivers from smaller operators. Recruitment of machine operators required for large-scale baling during the ~25-day baling window will likely be similarly constrained. Competition for labor with incumbent industries (e.g., steel) is likely.

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 medium, therefore the RRI is 6 out of 10.	**6**
Gross Risk Indicator (GRI)	**Score**
The Gross Risk Indicator (RRL X RRI) is 48 out of 100.	**48**
Mitigation/Notching	**Notch**
Engagement with an experienced large-scale third-party baler would partly mitigate the risk.	**25%**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 36 out of 100.	**36**

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. Where supply chains are not well-established, risk can be mitigated when new bio-based plants control a higher degree of feedstock processing.

Risk Information: Historical demand for corn stover as an industrial biomass feedstock in the region has been negligible. There has been no prior history of industrial-scale stover procurement. The only pre-existing demand for stover has come from small-scale livestock operations, primarily dairies and feeder cattle operations using stover for bedding, representing well under 1% of available material. This low baseline demand means there is no established supply

infrastructure, no farmer experience with industrial-quality specifications, and no precedent for the pricing or contracting structures that industrial procurement would require.

Raw Risk Likelihood (RRL)	**Score**
The risk likelihood is deemed very high, therefore the RRL is 10 out of 10.	**10**
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 60 out of 100.	**60**
Mitigation/Notching	**Notch**
No adjustment.	**NN**
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 60 out of 100.	**60**

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: Seasonal weather is the most significant and consistent risk factor for corn stover feedstock supply, with the region's heavy clay soils and compressed fall harvest window creating conditions where a single wet season can eliminate most or all of the year's collectible stover. In 2019, heavy spring rain resulted in record prevented plantings in the Supply Zone and across the Midwest. Similarly, wet fall conditions narrowed the baling window and increased the probability that baled material will exceed moisture quality thresholds.

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**

1.7.2 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: Long-term climate trends in northern Indiana present a mixed and uncertain picture for corn stover feedstock supply. Over the past century, precipitation trends in the Midwest have shifted toward wetter conditions and

fewer droughts than in the early 20th century; however, the region has still experienced significant adverse drought impacts in recent decades. Wetter long-term trends have positive and negative effects on corn stover supply potential: increased annual precipitation supports higher corn yields and therefore greater potential stover biomass but also increases the frequency of wet fall harvest windows that prevent stover collection. Risk is assessed as low due to uncertainty in the rate and magnitude of seasonal changes in weather due to climate change.

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 Crop Fire

Rationale: 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.

Risk Information: Crop fires are a low-frequency risk to corn stover feedstock supply in the area. A September 2024 barn fire in rural Noble County spread to nearby hay bale stacks, producing smoke visible across the county and into southern Michigan, illustrating the fire propagation potential of densely stacked baled biomass in the region. A large cornfield fire was reported in neighboring LaGrange County in October 2024, coinciding with dry and gusty conditions that prompted burn bans across multiple northeast Indiana counties including DeKalb, Kosciusko, and Wabash, indicating that the broader Supply Zone experiences dry, fire-conducive fall conditions in some years. The primary fire risks for baled stover feedstock supply are ignition during field operations – from equipment sparks or escaped burns – and spontaneous combustion in storage when bales are stacked at elevated moisture content.

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 insect populations are influenced by environmental conditions, future changes in climate can be expected to significantly alter the outbreak dynamics of certain insect species. In some cases, larger and more frequent insect outbreaks may occur, but in other cases, recurring outbreaks may be disrupted or diminished.

Risk Information: The primary pest and disease risks affecting corn grain and stover availability in the region are tar spot fungal disease and corn rootworm. Tar spot of corn was first confirmed in the United States in Illinois and Indiana in 2015 and has since spread to more than 20 states; severe outbreaks in 2018 resulted in yield losses in some parts of Illinois, Indiana, Wisconsin, Iowa, Ohio, and Michigan. Annual tracking of tar spot in Indiana has shown variable but persistent presence across the state. Corn rootworm activity was reported in Indiana in 2023. Both pests reduce grain and stover yield. Risk is assessed as low due to the limited impact of past infestations on long-term corn yield, as evidenced in Figure B-3 (Section B).

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: Hail is one of the principal destroyers of agricultural crops in North America. 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: Hail is a recurring seasonal hazard in northern Indiana, as the region experiences active severe convective weather during the summer growing season. Hail damage to corn is assessed by degree of leaf area loss, with total yield impact largely dictated by growth stage at the time of damage; late-season hail after pollination causes the most severe economic injury. The impact of hail events on corn grain and stover yield is best characterized as localized and rare, and therefore 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**

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: Flooding is a recurrent risk in the region, driven by poorly drained glacial soils, flat topography, and the Elkhart and Pigeon River drainage networks. In July 2024, remnants of Tropical Storm Beryl caused major flooding

in the adjacent Elkhart County, submerging roads and crop fields completely. In spring 2019, historic Corn Belt rainfall resulted in over 11 million prevented corn acres, with foregone crop revenues exceeding $6 billion, illustrating the severity of flood-driven supply disruption in this region. While flooding is intermittent and has not impacted the long-term trend of increased corn grain (and stover) yield, years with significant rainfall will lead to a significant decline in baling 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 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**

1.7.7 Risk of Drought

Rationale: Droughts can cause significant disruptions to feedstock supplies across entire BDO Zones for extended periods of time, especially in the case of agricultural residues and energy crops.

Risk Information: Drought is a moderate but periodic risk to corn stover supply in the Noble County zone. The summer of 2023 brought the most challenging dry conditions for Indiana corn production in years. Despite those conditions, Indiana outperformed the western Corn Belt, topping its yield trend by more than 5%, aided by drought-tolerant hybrids and reduced fungal disease pressure.

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**

1.7.8 Risk of Hurricanes, Tornadoes, and Strong Winds

Rationale: Hurricanes, tornadoes, and strong winds can destroy crops and feedstock piles. They can also delay agricultural 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 Supply Zone lies within a recognized corridor for severe convective wind events. On September 24, 2024, a confirmed tornado tracked through Noble County, destroying a barn and severely damaging multiple farm structures near the Noble-LaGrange county line. A major derecho on July 15, 2024 produced widespread winds of 60 to locally 100 mph across northeastern Illinois and northwestern Indiana. While such events cause localized corn stalk breakage, they do not pose risks to annual stover supply at scale.

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**

1.7.9 Low Temperatures

Rationale: Low temperatures can cause crop failure, leading to shortages of biomass. Additionally, low temperatures can have adverse impacts on the operations of feedstock processing equipment in Northern BDO Zones.
Risk Information: Northern Indiana typically experiences freezing temperatures through the end of April, with late-spring cold snaps capable of delaying crop establishment and compressing the effective growing season. Early fall freezes – possible as soon as mid-October – rarely arrive before grain harvest. When it does, however, it can have a meaningful impact on the availability of corn stover. Risk is assessed as low-to-medium.

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 medium, therefore the RRI is 6 out of 10.	**6**
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**

1.8 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: PADD 2 (Midwest District) diesel prices reached a record high of $5.66 per gallon in June 2022, driven by post-pandemic demand recovery, the Russian invasion of Ukraine, and global refinery capacity constraints, before declining to an annual average of approximately $3.62 per gallon in 2025 (Figure E-5, Appendix E). More recently, prices have increased again following the 2026 Iran War and associated blockade on oil exports from the Persian Gulf. Risk is assessed as medium due to uncertainty over the duration of the blockade and magnitude of continued diesel price inflation.

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**

1.8.2 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: Not relevant.

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**
No adjustment.	**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: Not relevant.

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**
No adjustment.	**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: Corn stover feedstock production benefits indirectly from federal support programs targeting corn grain rather than stover specifically. In March 2025, USDA announced up to $10 billion in direct relief payments to producers for the 2024 crop year through the Emergency Commodity Assistance Program, designed to offset elevated input costs and falling commodity prices. The USDA Biomass Crop Assistance Program previously offered matching payments of up to $20 per dry ton for collection, harvest, storage, and transportation of eligible biomass feedstocks to qualified advanced biofuel facilities, but the future of this program is uncertain.

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**

1.9.2 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 corn stover, 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: Corn stover harvesting in the Supply Zone requires no state or federal permits, as it is treated as an agricultural management practice. The primary regulatory constraint is indirect: farmers in USDA programs must comply with Highly Erodible Land conservation provisions that can limit residue removal rates on erosion-prone soils. On most croplands, however, residue removal rates will be determined by the preferences of the private landowner (the farmer).

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

1.9.3 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: No public opposition to corn stover harvesting or biomass feedstock development was identified in the Supply Zone during outreach and online research. The transportation of agricultural products, steel, and other products is commonplace in the region.

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

1.9.4 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: No federally recognized tribal lands are located within the Supply Zone, and no active tribal consultation requirements apply to corn stover procurement in the region.

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: Corn stover is an agricultural residue rather than a food product, and its collection does not directly displace food production. In fact, it provides for an additional revenue stream to the farmer, improving farmers' profitability and ensuring continual food 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 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: No mandatory third-party certification system currently governs corn stover procurement in Indiana, though voluntary sustainability frameworks exist. The Roundtable on Sustainable Biomaterials (RSB) provides guidelines for stover procurement that include soil conditioning index requirements, nutrient replacement accounting, and site-specific removal rate assessment. Research suggests that in high-yielding no-till or minimum-till fields, up to 45% of stover may be sustainably removed, though other studies recommend limiting removal to 20–30% of total production to protect soil organic matter and erosion control. A responsible procurement program in the Noble County zone would incorporate field-level sustainability screening, nutrient replacement protocols, and preference for no-till acres.

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**

1.10.2 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 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: Adverse soil quality impacts are unlikely, as the rated quantity is based on the assumption that 60% of all generated corn stover in a given year is not baled and removed from the field. Croplands that are sensitive to corn stover removals can be seeded with cover crops (e.g., rye, oats, radish) following corn harvesting. The cover crops grow over the late fall, winter, and early spring, functioning to protect the soil from erosion and increasing soil organic matter and nutrient content. In other cases, farmers that own fields that are particularly vulnerable to organic matter and nutrient removals, or soil compaction, will employ lower removal rates or will not participate.

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**

1.10.3 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: Stover removal increases surface water runoff risk by reducing protective ground cover, exposing soil to rainfall impact, and increasing sediment and nutrient loading to streams. For croplands located adjacent to surface water, incorporating cover crops following stover removal is the primary recommended mitigation strategy for water quality protection. Overall, risk is assessed as low due to the small percentage of the rated quantities in total stover generation in 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 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**

1.10.4 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: Corn stover is a rain-fed agricultural residue, and its collection does not involve direct water withdrawal or consumptive water use. Overall, water use risk from stover procurement 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**

1.10.5 Pesticide Risk to Human and Ecosystem Health

Rationale: Application of pesticides (i.e., herbicides, fungicides, and insecticides) on agricultural 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: Pesticide use would not increase if the rated quantity of corn stover was harvested annually. However, stover removal marginally increases pesticide runoff risk by reducing the filter capacity of harvested cropland. Overall, this is considered a very low risk.
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: Corn stover left on fields through winter provides cover and foraging habitat for ground-nesting birds, small mammals, and invertebrates in the Noble County agricultural landscape. Industrial-scale stover removal – if conducted at high removal rates across large contiguous acreages – could reduce this overwintering habitat, particularly for ring-necked pheasant, northern bobwhite quail, and other farmland species already under pressure from intensifying agriculture. Conservation buffer strips can improve wildlife habitat and air quality alongside water quality benefits, and are compatible with stover procurement programs that leave field margins and grassed waterways undisturbed. The visual impact of stover harvesting is negligible – baling operations are a familiar and culturally accepted sight in northern Indiana – and no scenic or heritage landscape designations in the Supply Zone would be affected. A well-designed procurement program that excludes marginal, highly erodible, or high-value habitat parcels would substantially mitigate wildlife risk. Risk is assessed as very low due to the low percentage of annually generated stover that is collected given the rated quantity.

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 Ligonier Industrial Park offering consists of 10 acres in an established, platted industrial park located on West Perry Road in Ligonier, Noble County, Indiana. The site is zoned Industrial by the City of Ligonier, with no rezoning or conditional-use permit required, and is confirmed shovel-ready under the IEDC Shovel-Ready site certification program. Topography is described as gently rolling, which presents no significant grading constraint, and the parcel is confirmed outside the 100-year floodplain of the Elkhart River. At 10 acres the site falls at the lower bound of parcel size; contiguous developable acreage is noted at 31.04 acres on the broader park record, but only 10 acres are currently available for sale. Pricing at $17,500 per acre is actively marketed and negotiable. 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

2.1.2 Ownership of Land

Risk Information: The subject property is owned by the Ligonier Industrial Development Corporation, a single mission-driven entity dedicated to attracting industrial tenants to Ligonier. Pricing is published at $17,500 per acre and the corporation is actively marketing the site. Per the Noble County EDC, title transfer in Noble County is typically completed within approximately two weeks, which is significantly faster than the regional norm. Single-party ownership by a development-focused corporation with clear title, published pricing, and rapid closing timelines eliminates the assembly, absentee-owner, and trust-resolution risks common to fragmented industrial parcels. 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

2.1.3 Permitting Description

Risk Information: The Ligonier Industrial Park site has received Indiana Economic Development Corporation (IEDC) Shovel-Ready certification, which encompassed review and clearance by the Indiana DNR, the Indiana Department of Environmental Management, the Indiana Department of Transportation, the Indiana Department of Health, the Indiana Department of Agriculture, and the Indiana State Department of Homeland Security. This multi-agency pre-clearance substantially reduces the permitting burden on a future industrial tenant. Local permitting in this jurisdiction is exceptionally fast — typically completed within one to two days to one week for straightforward industrial projects, compared to six weeks or more in a larger metro such as Fort Wayne. The site is platted, zoned Industrial by right, and located within a municipal jurisdiction, further streamlining the approval pathway. No rezoning, variance, or CUP is required, and no evidence of anticipated local opposition was identified. 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

2.1.4 Environmental Issues

Risk Information: The site is currently vacant and actively farmed, with no documented history of prior heavy industrial use on this specific parcel that would suggest legacy contamination. The Noble County EDC confirmed that the IEDC Shovel-Ready certification process included review by the Indiana Department of Environmental Management, the Indiana DNR, and other state agencies, which in practice involves screening for environmental constraints including endangered species habitat. The absence of a confirmed Phase I ESA on file introduces uncertainty, though the greenfield agricultural character of the parcel and multi-agency Shovel-Ready clearance are favorable indicators. 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 Risk Factor: Utilities

2.2.1 Natural Gas Availability

Risk Information: Natural gas service is available within the Ligonier Industrial Park, provided by NIPSCO via a 4-inch distribution line. Service is on-site at the park, and NIPSCO is a large investor-owned utility with established industrial service experience and competitive rates. The 4-inch distribution line meets the size threshold typical for low-to-moderate process-heat demand at small-to-mid scale bio-manufacturing operations. The on-site availability of natural gas service from an established investor-owned utility positions this indicator as very low risk; however, project-specific capacity verification will be required during detailed engineering.

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**

2.2.2 Electric Availability

Risk Information: Electric service to the Ligonier Industrial Park is provided by Noble REMC, a rural electric membership cooperative serving Noble County. Electric service is available roadside adjacent to the parcel and is provided at 12 kV (three-phase), which is a standard distribution voltage for industrial parks. The nearest substation is located approximately 5 miles from the site. 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**

2.2.3 Water Availability

Risk Information: Water service to the Ligonier Industrial Park is provided by the City of Ligonier via a 10-inch water main available roadside adjacent to the parcel — a line size that is generally well-suited for industrial process demands. The 10-inch main is a favorable infrastructure characteristic, and the City of Ligonier's municipal ownership implies an obligation to serve within its service territory. For biomass processing or biofuel production, water demand can be substantial, and confirmation of available excess capacity above current system commitments is an important diligence item. 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**

2.2.4 Drainage, Stormwater Management, and Sewage

Risk Information: Sanitary sewer service to the Ligonier Industrial Park is provided by the City of Ligonier via a 10-inch sewer main confirmed as roadside adjacent to the parcel. The wastewater treatment plant is operated by the City of Ligonier in the same municipal service area as the site. The site has gently rolling topography that supports conventional stormwater design using standard best management practices, and the parcel is outside the 100-year floodplain. The on-site availability of sanitary sewer service from a single municipal utility, combined with favorable topography for stormwater management, positions this indicator as very low risk. 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**

2.2.5 Waste Disposal

Risk Information: Solid waste disposal for the Ligonier Industrial Park is served by a combination of local and regional options. Noble County Disposal provides a county-level landfill within Noble County itself, offering close-proximity disposal; however, the facility's remaining permitted capacity is unknown. The Republic Services landfill in Fort Wayne (approximately 35 miles) is confirmed to operate until at least 2053, providing a reliable regional backup with a defined remaining capacity horizon well in excess of 20 years. Metal scrap and ferrous waste streams are additionally served by Kindle Bell Iron and Metal. The combination of a proximate county landfill, a confirmed long-life regional landfill, and established metal recycling infrastructure supports a low risk assessment.

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**

2.2.6 Information and Communication Technology (ICT) Services

Risk Information: Telecommunications and internet connectivity at the Ligonier Industrial Park are provided by Lig-Tel, a local provider with infrastructure already installed within the park. Fiber optic internet service is available in the park with a maximum symmetrical bandwidth of 1 Gbps. Cellular coverage in the Ligonier area is generally available given the town's size and location. 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**

2.3 Risk Factor: Transportation/Logistics

2.3.1 Road/Highway Access

Risk Information: The Ligonier Industrial Park is served directly by US Highway 6 and Indiana State Road 5, both of which carry significant existing heavy-truck volumes. Indiana State Road 33 provides additional regional connectivity. Ligonier is established as a regional truck corridor with semi-trailer truck traffic routinely moving through the downtown area and no posted weight restrictions. The nearest interstate access is approximately 22 miles to I-80/I-90 (the Indiana Toll Road), and approximately 37 miles to I-69. While the site benefits from direct access to a federal US highway and multiple state highways with established heavy-truck use, the 22-mile distance to the nearest interstate introduces a moderate freight logistics consideration relative to interstate-adjacent sites. 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**

2.3.2 Rail Access

Risk Information: Rail access is provided to the Ligonier Industrial Park by Norfolk Southern Corporation, a Class I carrier. An active freight rail runs just north of Ligonier and cuts through the Ligonier Industrial Park; however, the site does not currently have an active rail spur and is not functionally rail-served at this time. Constructing a spur would require negotiation with Norfolk Southern and capital investment, adding both cost and timeline to a project that depends on rail. The proximity of a Class I mainline to the industrial park is a significant advantage compared to truly land-locked

rural sites, but the absence of an existing spur and the uncertainty around spur development cost defines this as a moderate risk for rail-dependent operations. 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**

2.3.3 Airport Access

Risk Information: Fort Wayne International Airport (FWA) is located approximately 35 miles southeast of the site and provides commercial passenger service with daily connections to multiple national hubs and a runway length supporting standard regional jet operations. Goshen Municipal Airport, approximately 12 to 14 miles from the site, provides general aviation access for corporate and charter aircraft. The presence of a commercial airport with scheduled service within 35 miles, supplemented by a closer general aviation airport, positions airport access as low risk for typical bio-manufacturing operations including business travel, executive transport, and technical commissioning visits. For projects requiring extensive international travel, Chicago O'Hare International Airport is accessible via I-80/I-90 at approximately 150 miles. 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**

2.3.4 Water Freight Access

Risk Information: Noble County is a landlocked region in north-central Indiana with no navigable waterways suitable for commercial freight movement. The nearest deepwater port is the Port of Indiana–Burns Harbor on Lake Michigan, located approximately 130 miles west via I-80/I-90, providing access to Great Lakes shipping. The nearest navigable river barge access is on the Ohio River south of Indianapolis, located more than 200 miles south. There is no direct water freight access from the site, and all bulk transportation must rely on truck and potentially rail networks. The absence of nearby water freight access is typical of inland Midwestern industrial sites; the proximity to the Indiana Toll Road (I-80/I-90), which provides efficient truck connectivity to Lake Michigan ports, partially mitigates this limitation. The risk likelihood is very high given the definitive absence of navigable water, though the impact is medium given the availability of truck alternatives and the existence of a Great Lakes port within practical trucking distance.

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

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 60 out of 100.	60
Mitigation/Notching	**Notch**
No adjustment.	NN
Loaded RI Score	**Score**
The Loaded RI Score ((1-Total Notch) X GRI Score) is 60 out of 100.	60

2.4 Risk Factor: Social Infrastructure

2.4.1 Healthcare (Local)

Risk Information: Parkview Noble Hospital, located in Kendallville approximately 20 miles southeast of the site, is the closest community hospital and operates a 24/7 emergency department as part of the Parkview Health System. Goshen Hospital, located in Goshen approximately 16 miles west of the site, is also commonly used by residents of the Ligonier area and provides a broader range of specialty services as a regional medical center. For higher-acuity care, Parkview Regional Medical Center in Fort Wayne (approximately 35 miles) and Memorial Hospital in South Bend (approximately 55 miles) offer Level II trauma services and full specialty coverage. The combination of two community hospitals within 25 miles and tertiary care within an hour's drive positions healthcare as a low risk factor for workforce attraction and emergency response. 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: Public K-12 education is provided by the West Noble School Corporation. Post-secondary options accessible from the site include Ivy Tech Community College, which operates campuses within 30 miles and offers general technical and trade programs, and Goshen College, a four-year liberal arts institution approximately 16 miles west of the site. Additional post-secondary institutions accessible within commuting distance include Indiana University–Purdue University Fort Wayne (35 miles) and the University of Notre Dame (55 miles). The Noble County EDC also identifies Freedom Academy, an adult technical education provider, as an active workforce development partner that delivers both individual training and customized programs for local employers. The combination of a functioning K-12 system, a community college within 30 miles, multiple four-year universities within an hour's drive, and an active adult technical training partner positions education as a very low risk factor. 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

2.4.3 Local Transportation

Risk Information: Personal vehicle travel is the primary mode of transportation in Noble County. There is no fixed-route public transit serving the Ligonier Industrial Park or the broader Noble County area, and any workforce drawn from outside the immediate community will depend on personal vehicles or employer-organized carpooling. Commuting distances from population centers within the county are generally modest of 30-45 minutes, and the broader Fort Wayne and Goshen labor sheds are accessible by personal vehicle via US-6, SR-5, SR-33, and I-69. The heavy reliance on personal vehicles is typical of rural Midwestern communities but does introduce retention risk for hourly workers without reliable personal transportation. The risk is assessed as medium likelihood with low impact.

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: Public safety is provided by the Ligonier City Police Department and the Ligonier Fire Department, supplemented by the Noble County Sheriff's Office and the Indiana State Police. Crime statistics place the area in the 86th percentile for safety nationally, meaning the area is safer than approximately 86% of US counties. The ISO Public Protection Classification for the Ligonier area is Class 4, consistent with paid or combined-departments delivering standard response times. The combination of strong community safety performance and an established municipal fire and police presence in an active industrial corridor positions public safety as very low risk. 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

2.4.5 Housing/Cost of Living

Risk Information: The BDO Zone consists of eight counties, the most significant being Elkhart County, Kosciusko County, and Noble County. Noble County's overall cost-of-living index is approximately 77.3, which is 22.7% below the national average and approximately 7.6% below the Indiana state average. The median home value in the three counties is approximately $192,700, and the affordability ratio is approximately 3.28, demonstrating great affordability. The rental vacancy rate is approximately 7.8% and the homeowner vacancy rate is approximately 0.8%, demonstrating great rental vacancy and moderate housing availability. The combination of an attractive cost-of-living profile, good vacancy rates, and a low affordability ratio positions housing and cost of living as very low risk for workforce attraction and retention. 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**

2.5 Risk Factor: Labor

2.5.1 Workforce

Risk Information: As of 2025, the population of the BDO Zone is approximately 272,400 people, with the majority of the population living in Elkhart County (110,400), Kosciusko County (47,000), and Noble County (46,700). In 2025, the average unemployment rate for the three most significant counties in the BDO Zone was 3.8%, which is below the national average and indicates a relatively tight local labor market. The median age is approximately 38 years, and the counties have an average population growth of approximately 0.2% per year over the past five years. Educational attainment in the three counties is below national averages: approximately 84% of adults over 25 have a high school education or higher (compared to a national average of approximately 89%), and approximately 21% hold a bachelor's degree or higher (compared to a national average of approximately 35%). The combination of a tight local labor market and below-average post-secondary attainment introduces moderate workforce-availability risk; however, most operating roles at a bio-manufacturing facility are trade-oriented (operators, maintenance technicians, electricians, instrumentation specialists) and the local workforce, supplemented by Ivy Tech and Freedom Academy training partners, is well-suited to these roles. The risk likelihood is assessed as medium and the risk impact as 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**

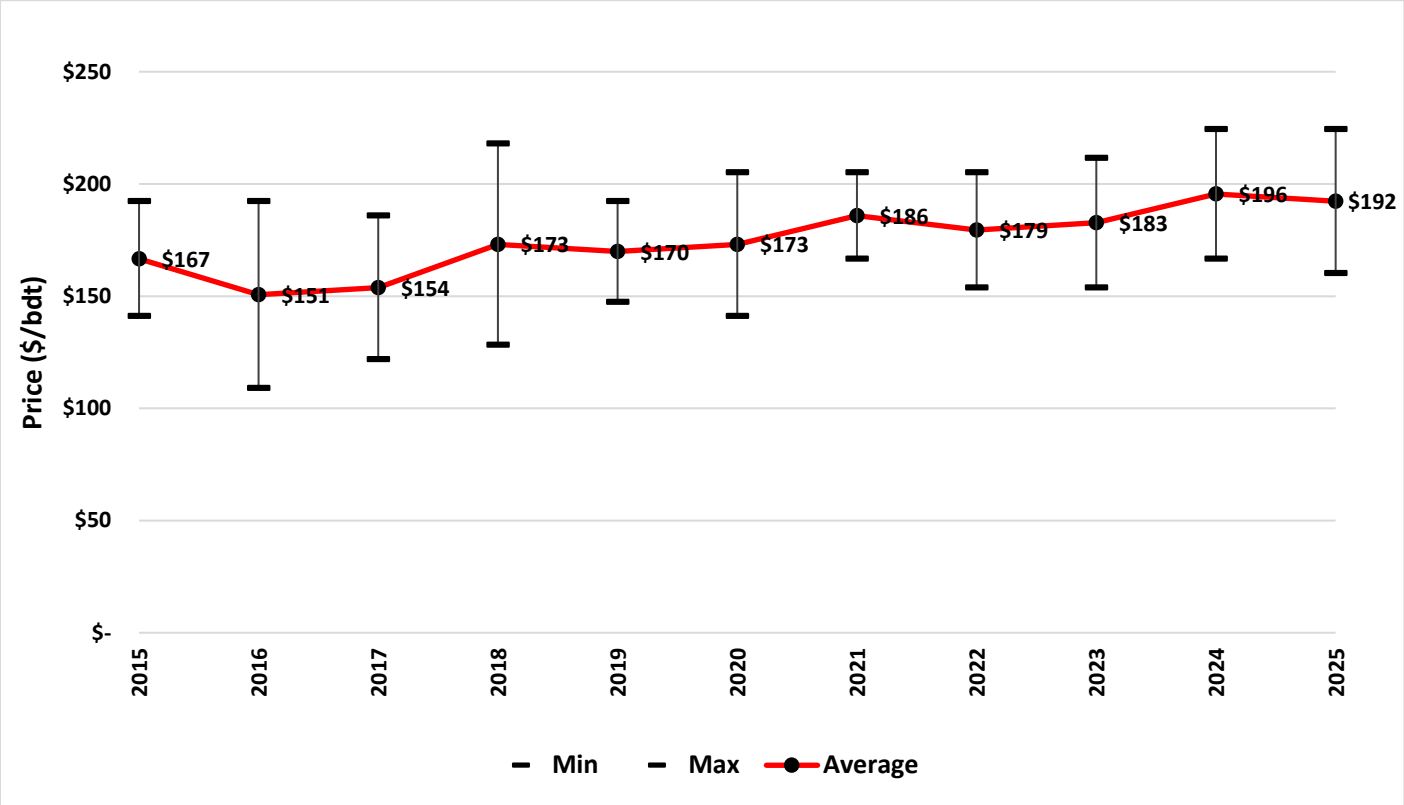
2.5.2 Labor Costs

Risk Information: Indiana's minimum wage matches the federal minimum of $7.25 per hour, consistent with the federal minimum. Noble County's average weekly wage in Q3 2025 was $983, Elkhart $1,221, and Kosciusko $1,124, which represents approximately 76% of the national average weekly wage of $1,459, indicating significant labor-cost advantage relative to coastal and large-metro labor markets. The average median household income of the three counties of approximately $58,712, representing 82% of the Indiana state median ($71,957) and approximately 73% of the national median ($80,734). From an employer standpoint, labor costs in the BDO Zone remain meaningfully below national averages while still being adequate to support workforce attraction within the regional labor market. The combination of a federal-minimum statutory floor, county wages substantially below the national average, and median household income aligned with Indiana state norms positions labor costs as very low risk.

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**

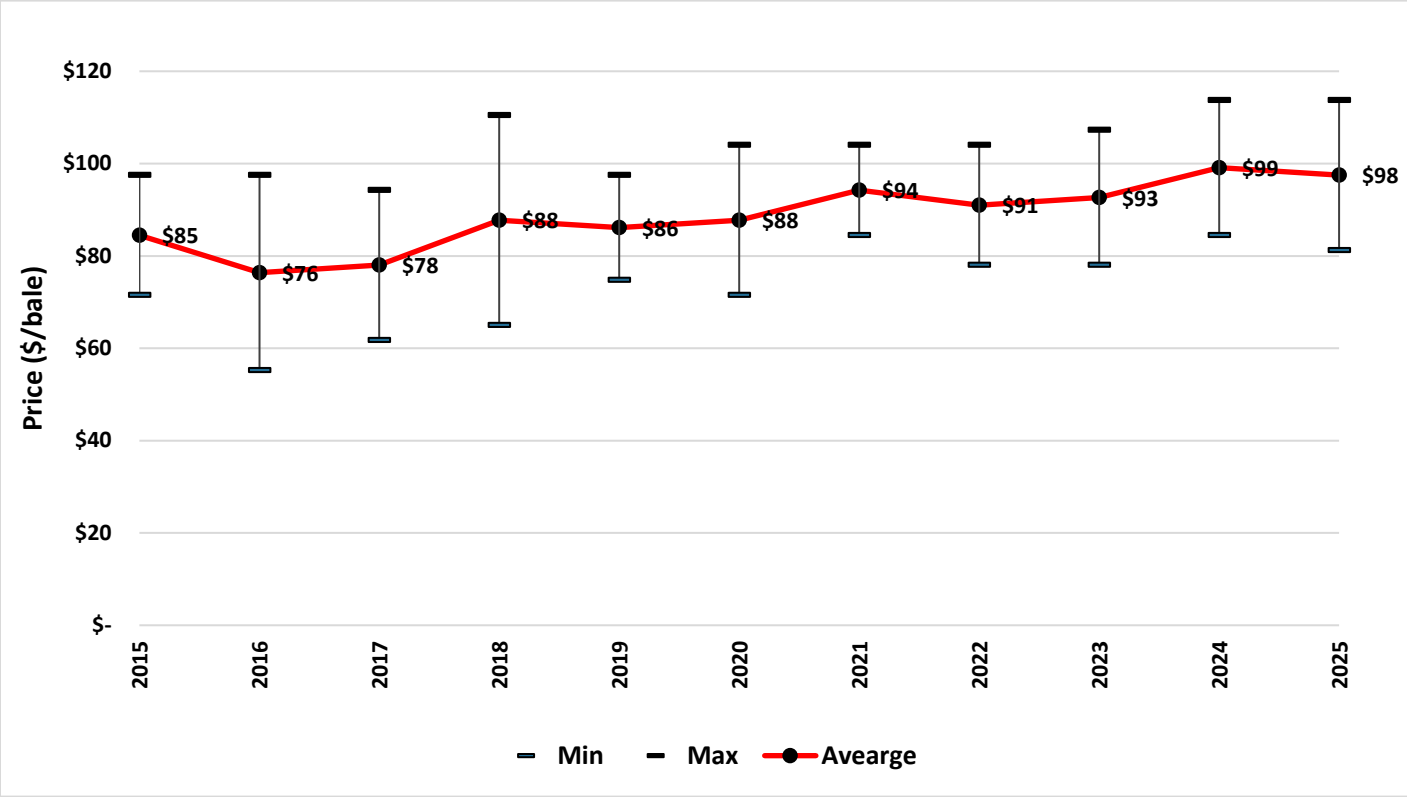
SECTION E: TABLES AND FIGURES

Figure E-1. Historical Hay Prices ($/bdt)[27]



[27] quickstats.nass.usda.gov

Figure E-2. Historical Hay Prices ($/bale)[28]



[28] quickstats.nass.usda.gov

Figure E-3. Transportation Cost as Function of Distance Travelled ($/bdt)

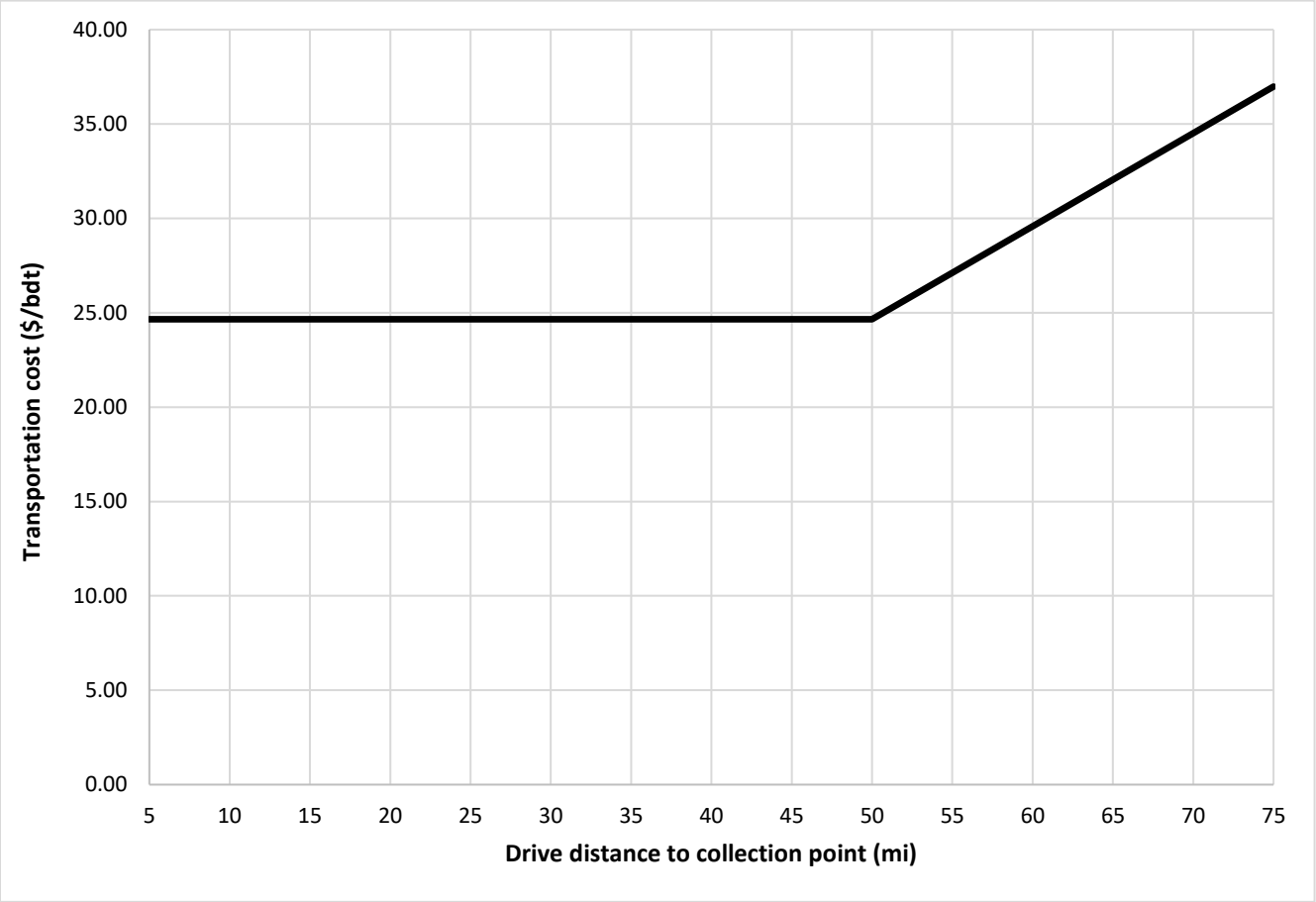


Figure E-4. Supply Curve for Corn Stover Within 75-Mile Drive Distance from Ligonier, IN

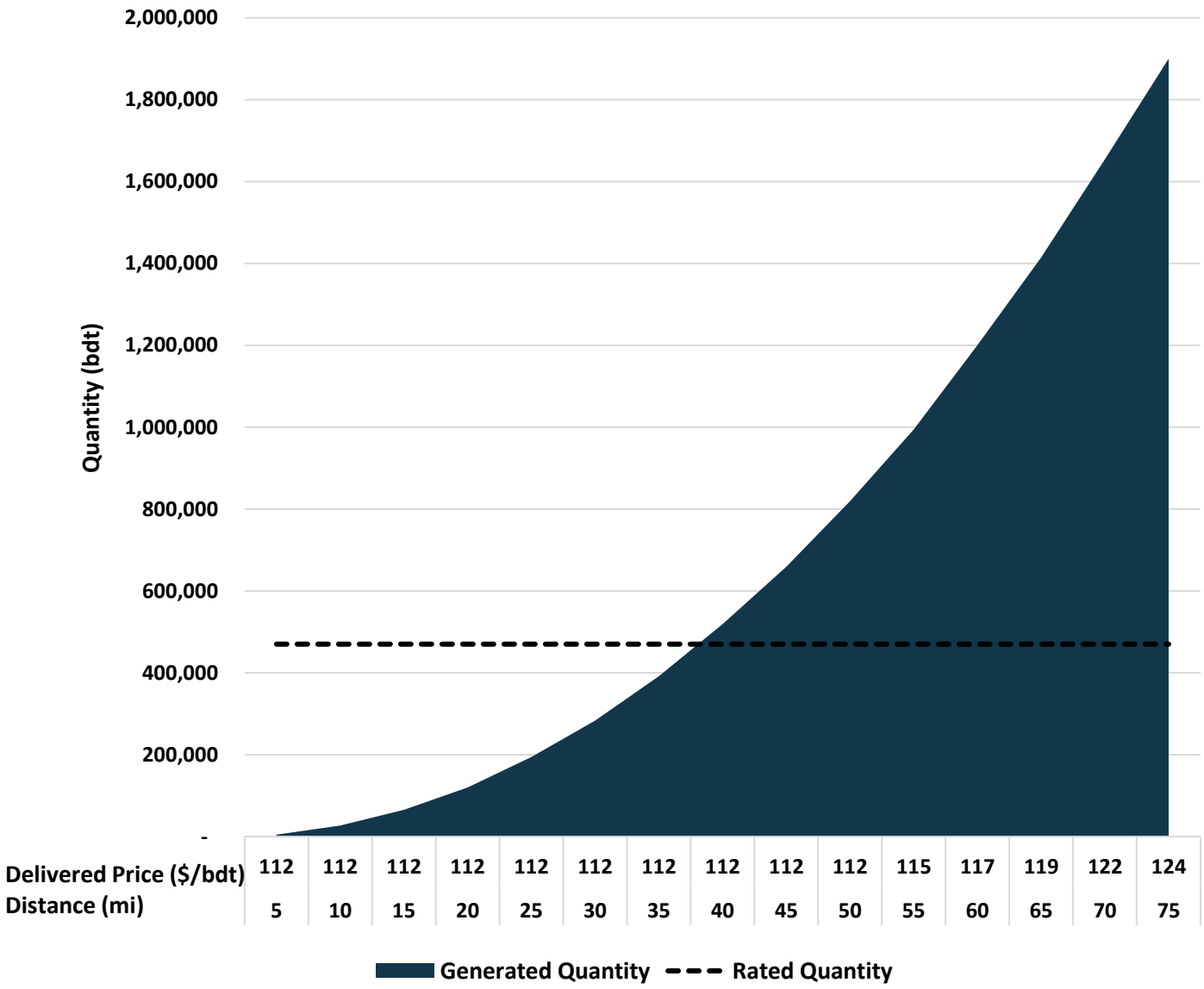
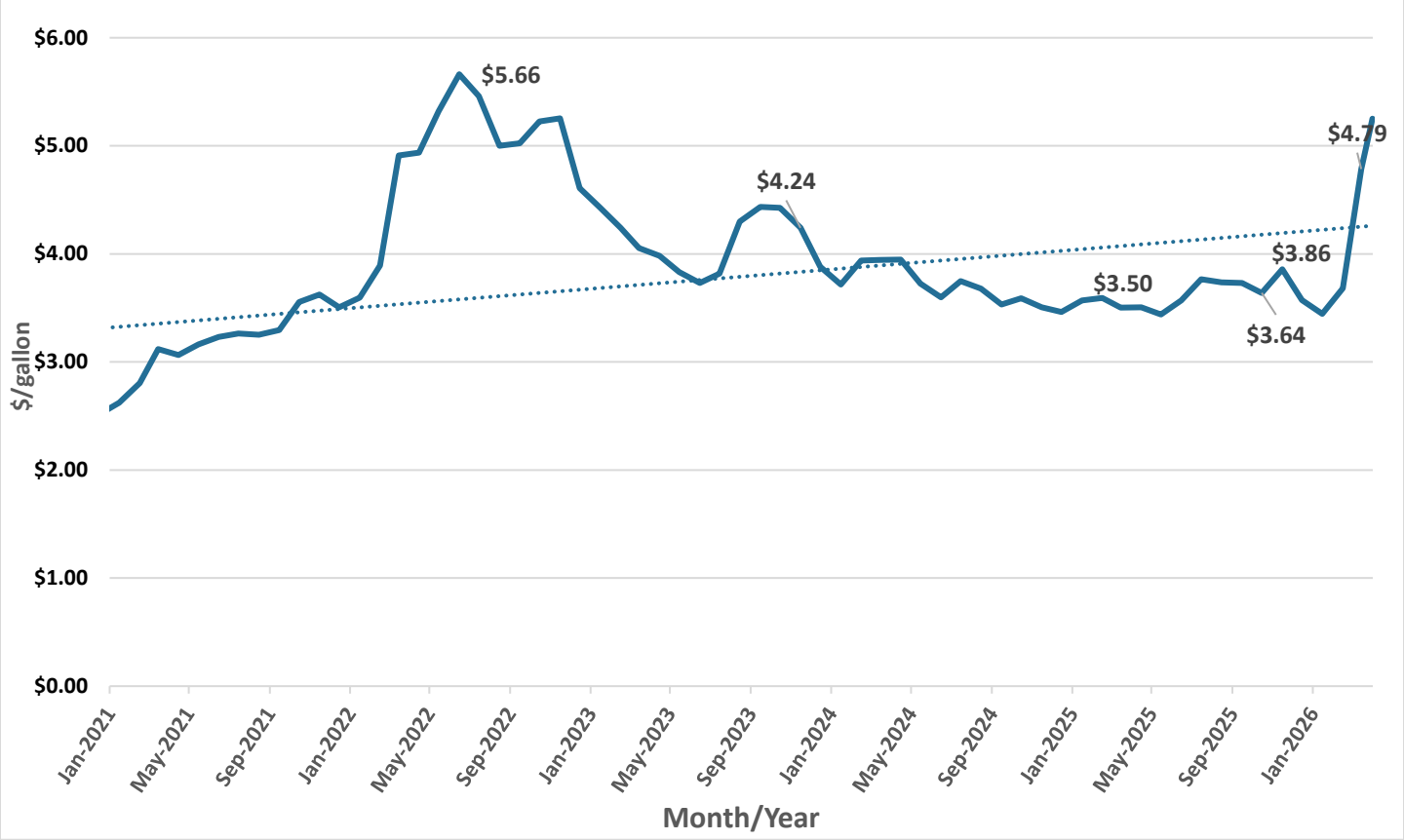


Figure E-5. PADD 2 (Midwest District) Diesel Prices, 2021-2026[29]



[29] https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_r20_m.htm

SECTION F: LEGAL DISCLAIMER

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