SUMMARY

- VERBIO is Europe’s only industrial-scale producer of biodiesel, bioethanol and renewable natural gas (biomethane) vehicle fuels.

- VERBIO is Europe’s largest renewable natural gas (RNG) producer – sold as *verbiogas* it currently serves 20% of the German market for CNG vehicle fuel. The remaining 80% of the CNG market is served almost exclusively by fossil gas imports.

- The renewable natural gas industry was created as part of the federal Renewable Fuel Standard which created the ethanol and biodiesel industries.
Project Requirements

Feedstock

- Initial requirements: ~75,000 metric tons of straw annually
- Target ramp-up capacity to ~150,000 metric tons annually
- ~1.2 tons of humus returned to land per 1 ton of straw
- Preference for farmers to provide storage for straw and humus at fields

Site Selection

- 100+ acre minimum size
- Proximity to a natural gas pipeline and highway infrastructure
- 100+ million annual gallons of freshwater for process input
- Feedstock requirements largely achieved within a 50 mile radius
- Strong local, regional, and statewide support
Plant Location & Route
Continue Farming Excess Land
Site Plan – Phase 1 (2019-2020)
Site Plan – Expanded Facility (2021+)
Economic Opportunity

1 Farmers generate a new revenue stream – sale of wheat straw, corn stover and cover crops ($3.5+ million/year during Phase 1)

2 Humus returned to the land – nutrients and water retention

3 Each facility requires a final investment of $100+ million and creates 75+ direct full time jobs and 150+ indirect jobs in the supply and value chain
Process Overview

Straw → Anaerobic digestion → verbiogas

Humus soil amendment → CNG/LNG vehicle fuel
Renewable Natural Gas
Existing VERBIO Facilities
Timeline

Oct 2018  Finalize permits and authorizations
Nov 2018  Begin site excavation and foundation improvements
Mar 2019  Begin tank construction
Jun 2019  Begin building construction
Oct 2019  Complete tank construction
Dec 2019  Complete electrical, piping, and equipment installation
Jan 2020  Begin Phase 1 operations
Jan 2021  Begin expansion of facility
FREQUENTLY ASKED QUESTIONS – VNA SUMNER, LLC

What is VNA SUMNER, LLC?
This is the operating entity for the industrial project planned for the unofficial address of 1080 N. Meridian Road, Peck KS 67120, on a 160-acre site currently used as farmland. The entity is expected to eventually support 75+ full time direct jobs and another 150+ indirect jobs in the supply and value chain.

Who is developing and financing this project?
VNA Corporation (Grand Rapids, MI) is developing this project using proprietary technology provided by VERBIO Vereinigte BioEnergie AG, a leading producer of biofuels in Germany. VERBIO is providing all project financing for Phase 1 of construction. No public financing, federal grants or bank loans have been sought. Phase 1 is the 2018-2019 construction project followed by operations in 2020. In 2021 and beyond we hope to gradually expand the facility based on local availability of feedstock supply.

What are your process inputs?
We only use baled crop residues and water as our process inputs. Initially during Phase 1, these crop residues will be 75,000+ tons per year of wheat straw and corn stover, but over time we will be interested in other cellulosic material such as tall grasses and immature cover crops. We will never use manure or food waste in our process.

What are your process outputs?
We produce renewable natural gas (RNG) and humus. RNG will be cleaned to pipeline natural gas standards and injected into a nearby natural gas transmission pipeline for eventual use as CNG/LNG vehicle fuel. (RNG is sold under the same federal program that created the ethanol and biodiesel industries.) Humus is a lignin- and nutrient-rich soil amendment similar to peat moss or compost which will be principally returned to feedstock suppliers, with the balance sold commercially.

Will the site be noisy?
Noise generating equipment such as compressors, mixers, and straw grinding systems will be contained within buildings. There will be noise associated with heavy truck traffic which is unavoidable.

What will be the impact on air quality?
We will have a natural gas fired boiler on site to provide heat and a thermal oxidizer to clean the CO₂ we emit. We will also have a safety flare on site to burn renewable natural gas in the event of an emergency shutoff to the pipeline or malfunction. We are not burning straw!
FREQUENTLY ASKED QUESTIONS – VNA SUMNER, LLC

Will there be noxious odors?

We do not use any odorous material feedstock in our process. We only use baled crop residues such as wheat straw and corn stover – the majority of which will be stored off-site and must remain relatively free from rot and degradation to support our process. Our byproduct – humus – has a smell similar in character to peat moss or compost and will be trucked to and stored on farmland for land application.

What is the traffic pattern?

Trucks will come to the site entering off Highway 81, traveling 2 miles north via N. West Rd., then 1 mile east via E. 110th Ave. N., and finally south ¼ mile along N. Meridian Rd to the plant entrance. Trucks will only haul feedstock and humus between the hours of 6 AM and 10 PM except during the harvest season. During Phase 1 there will be 15-25 trucks per day during most of the year and up to 50 per day during the brief wheat straw harvest season. We are conducting a traffic impact study under the direction of KDOT to assess required road improvements for access off Highway 81.

What are your water requirements?

Water supply is critical to our operation and we will use an average of 100 gallons per minute (50 million gallons per year) during Phase 1. We are currently conducting hydrogeologic exploration and test drilling on the site and will use the results to apply for a new water right through the Kansas Division of Water Resources (KS-DWR). Our preference would be to take all water supply as groundwater/well-water. If this supply is insufficient, we will also evaluate capturing water via a rainwater retention pond and/or surface water from the Ninnescah River as a diversified supply strategy. If KS-DWR ultimately does not approve our application for a new water right, or does not approve the volumes we require, we will not build a plant at this location.

Do you create wastewater?

Our process does not create any wastewater. The water we use is ultimately returned to farmland as moisture content in the humus, after being recycled through our process to the maximum extent possible. In the rare event of a spill or leak there are no public health concerns.

Will I still be able to see the stars at night?

We hope so! Perimeter lighting will only be designed to support minimum security and operational requirements. Consideration will be given to the placement and positioning of lighting to minimize the impact on our neighbors to the north. We will also farm the northern-most portion of the parcel to create an aesthetic buffer between our plant and neighbors.