

# In Cooperation With



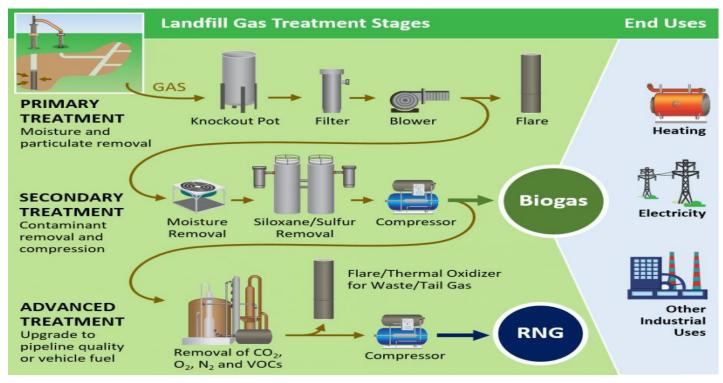
Baldwin County Commission Magnolia Landfill



- AEP Renewable Fuels, LLC is developing a landfill gas ("LFG") project in which we as the Developer will build, own, and operate a gas upgrading system at the Magnolia Landfill for converting the existing LFG, currently being captured and flared, into an energy resource.
- The Project is completing pending development items and targeting a financial closing mid-late Feb 2021

## LANDFILL GAS FOR RNG

- LFG is a natural byproduct of the decomposition of organic material deposited in landfills. LFG is composed of roughly 50% methane (the primary component of natural gas), 50% carbon dioxide, and a small amount of non-methane organic compounds.
  - Methane is a potent greenhouse gas that is 28-36 times more potent than CO2 in trapping heat within the atmosphere over a 100-year period, per the latest report from the Intergovernmental Planet on Climate Change.
  - There are many options available for converting LFG into energy including: electricity generation, direct-use of medium-BTU gas, and use of high-BTU RNG as an alternative fuel.
- LFG can be upgraded to RNG, a high-Btu gas, through treatment processes by increasing its methane content and, conversely, reducing CO2, nitrogen, oxygen, and other contaminants. The RNG can then be used in place of fossil fuel based natural gas, as pipeline-quality renewable gas, CNG, or LNG.
  - The RNG can be used locally at the site where the gas is produced or can be injected into natural gas transmission or distribution pipelines for delivery to another location.





#### The reason why EPA loves RNG



Today we have emissions, including Methane, from landfills and we drill for natural gas to fuel CNG/LPG cars & trucks. RNG kills these two birds with one stone.







- AEP will take the raw LFG and convert it into renewable natural gas ("RNG") which can then be sold as a renewable source, along with associated Environmental Attributes ("EAs"), for compressed natural gas ("CNG") in fleets using CNG as an alternative fuel source.
- AEP was awarded the right to contract with Baldwin County for a 15-year period (one 5-year extension) to purchase the LFG currently being generated, as well as all future LFG produced by the Magnolia Landfill as it expands (the "Baldwin Landfill Gas Contract"), from the decomposition of organic waste materials at the Magnolia Landfill.

#### **PROJECT FINANCIALS for Baldwin County**

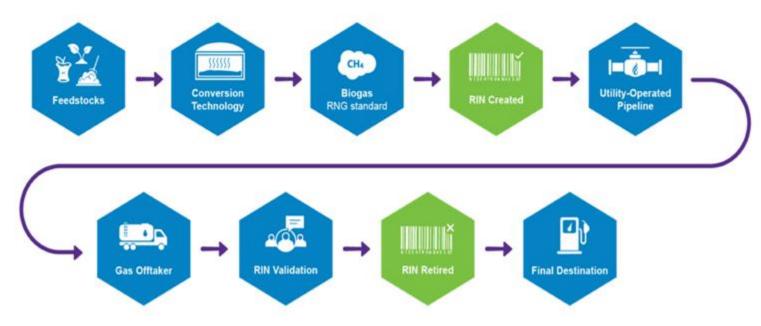
Item	Description	Estimated Quantity	Units
1. Purchasing Price of LFG	Paid by Vendor to BCC		
	Purchase Price of LFG (first year)	\$ 4.00/mmBtu	\$/MMBTU
	Estimated Annual Revenue to BCC (first year)	\$ 699 <i>,</i> 098.00	
	Estimated Annual Revenue to BCC (15 year)	<mark>\$ 11,088,000.00</mark>	\$/15yr
2. Annual O&M Cost	Estimated Annual O&M Cost of the Plant	\$ 1,982,613.00	\$/yr







#### THE PATH TO REVENUE WITH RNG



#### **THE MAGNOLIA LANDFILLPROJECT**

- AEP will construct a 14,040 sq. ft. greenfield gas cleanup facility at the Magnolia Landfill and 4 additional LFG vertical wells to the existing LFG Collection System to enhance production.
- Currently, the biomethane generated by the Magnolia Landfill is being centrally gathered and then flared to avoid emission into the atmosphere. This is required by EPA regulations for landfills over a certain size due to the highly potent greenhouse gas designation of biomethane with between 24-32x the warming potential when compared to carbon dioxide.
- The cleaned LFG will achieve a 98% pure methane stream that can be injected into a nearby natural gas pipeline owned and operated by Riviera Utilities that runs 2.92 miles from the Magnolia Landfill at a designated interconnect point (the "Interconnect").



AEP/Riviera Interconnect located at Pointer Drive & County Road 55



#### **THE MAGNOLIA LANDFILLPROJECT**

- The Project will divert 241,677 mmBtu per year from flaring at the Magnolia Landfill, which is the equivalent of removing 2,865 cars from the road each year. Total plant emissions will be far below all EPA air emission thresholds.
- When factoring items such as the Project's ultra-low emissions and offsets of carbon dioxide from avoiding the use of fossil fuels, this type of project is known as having a neutral carbon footprint.





#### **KEY PROJECT ATTRIBUTES**

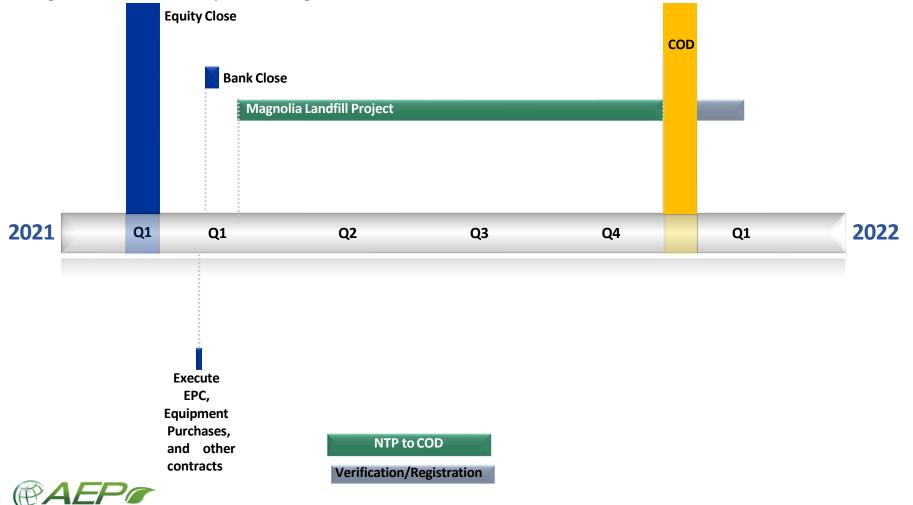
- Proven Biomethane Production: As required by EPA regulations, the Magnolia Landfill has installed underground wells (in 8 of the 11 cells) and a pipe gathering system (in all 11 cells) to capture the LFG being generated through the decomposition of the organic waste material within its landfill. SCS Engineers installed and operates the underground wells and gathering system with the LFG currently being centrally gathered and then flared to avoid emission into the atmosphere.
- <u>Enhanced LFG Production</u>: AEP plans to construct 4 additional LFG collection wells to the existing LFG collection system.
- **Offtake Counterparty**: The Project has executed a purchase and sale agreement with

**BP** for the offtake of RNG and associated RINs (Renewable Identification Numbers) for the Project over a 10 year agreement. The RINs are regulated under the Federal Renewable Fuels Standard, which is a market supported by federal regulators and legislative framework. The RNG will be used as an alternative fuel in CNG transportation fleets nationwide.



#### **PROJECT TIMELINE**

• After the Financial Close, the Developer expects to begin delivery and installation of the Equipment at the Project Site within 30 days thereafter. The estimated delivery and installation period of the Equipment is 10-12 months with a projected commercial operation date in Q4 of 2021 ("COD"). The Project will have a 3-month Registration/Verification period to register with the EPA to monetize the EAs.



## **PROJECT DEVELOPER**

- AEP Renewable Fuels is a Georgia based renewable energy project developer that develops, owns, and operates waste-to-energy projects. AEP's team has direct experience in other LFG projects in the United States.
- AEP's team has experience in over 50 LFG projects during the course of their careers. Highlighted LFG projects at predecessor firms include:
  - Pine Grove Landfill
    - Location: Pine Grove, PA
    - 6 MW LFG power plant and medium BTU LFG project.
  - Wicomico Solid Waste Complex
    - Location: Salisbury, MD
    - 6 MW LFG power plant.
  - Mountain View Reclamation
    - Location: Greencastle, PA
    - 16 MW LFG power plant.
  - King & Queen County Landfill
    - Location: Little Plymouth, VA
    - 12 MW LFG power plant.
  - Charles City Landfill
    - Location: Charles City, VA
    - 16 MW LFG power plant.



#### **CONTACT INFORMATION**

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