

**Indian River County, Florida
Solid Waste Disposal District
Board Memorandum**

Date: July 5, 2019

To: Jason E. Brown, County Administrator

From: Vincent Burke, PE, Director of Utility Services

Prepared By: Himanshu H. Mehta, PE, Managing Director, Solid Waste Disposal District

Subject: Landfill Gas Agreement with Indian River Eco District, LLC

Descriptions and Conditions:

On February 5, 2019, the Indian River County (IRC) Solid Waste Disposal District (SWDD) Board directed staff to enter negotiations with the Indian River Eco District, LLC (IREDD) for their purchase of landfill gas (LFG) created at the County's landfill. The SWDD Board agreed that the landfill generated gas, which is currently being flared off, posed a health and safety risk that could be resolved by allowing IREDD to purchase the gas.

Analysis:

Over the past few months, staff and IREDD have negotiated in good faith to present a final LFG Agreement with the objective of 1) a long-term beneficial reuse of the current gas that is being flared, 2) protecting the environment and 3) providing a financial benefit and incentive to SWDD while making it a sustainable business project for IREDD. At this time, IREDD has proposed a LFG to electricity project; however, depending on the quantity and quality of the LFG, to also consider a LFG to Renewable Natural Gas (RNG) project.

The following summarizes the key elements of the LFG Agreement:

Term:	The initial term for this project is 20 years from the commencement date with two (2) optional ten-year renewal terms upon mutual agreement to extend the term.
Title:	Ownership, title and control of the LFG shall pass from SWDD to IREDD when the LFG is delivered to IREDD at the delivery point. SWDD may keep up to 225 Standard Cubic Feet per Minute (SCFM) of LFG for SWDD use, otherwise transfer up to 1,600 SCFM of LFG to IREDD. SWDD may use, vent, or flare any LFG that is not accepted by IREDD. SWDD assigns to IREDD the right to market and sell all of the SWDD's right and title to SWDD's LFG credits.
Equipment:	IREDD is responsible for the LFG assets and any other improvements necessary for IREDD to receive and use LFG in its facility, and for paying all of the capital

costs for their LFG assets. SWDD is responsible for all LFG assets purchased by SWDD.

Measurement: SWDD shall continue to maintain, monitor, and operate the LFG system in accordance with applicable rules and regulations; however, IRED shall install, maintain and monitor metering equipment to measure the quantity and quality of the LFG accepted by IRED. In addition, IRED shall be responsible for any additional gas testing required for their operations.

Payment: 1) **Price for LFG:** IRED shall pay SWDD each month for any LFG that is accepted by IRED for the LFG to Electricity Project. Acceptable LFG is defined as the quantity of LFG (measured in SCFM) produced at a minimum 40% methane. These criteria will be used to calculate the average energy content (measured in MMBTU). That value will then be multiplied by the LFG Price (shown below) to determine the amount paid to SWDD.

Month LFG used by Company (MMBTU)	LFG Price (\$/MMBtu)
Baseline+7,501 to 9,000	\$1.28
Baseline+6,001 to 7,500	\$1.16
Baseline+4,501 to 6,000	\$1.05
Baseline+3,001 to 4,500	\$0.96
Baseline+1,501 to 3,000	\$0.87
Baseline +1 to 1,500	\$0.79
Baseline and below	\$0.72

MMBTU – One Million British Thermal Units, which is the amount of heat required to raise the temperature of one avoirdupois pound of pure water from 58.5 degrees Fahrenheit to 59.5 degrees Fahrenheit at standard temperature and standard pressure.

Alternatively, the price for a LFG to a RNG project shall equal a royalty payment of 10% of the gross receipts generated by the RNG project for the sale of renewable natural gas.

2) **Incentive Payment:** IRED shall pay SWDD an incentive payment if the average daily methane content of the LFG delivered is greater than 40%, as shown in the following table based on either a LFG to electricity project or an LFG to an RNG project:

Average Methane Content in the Company Used LFG	Incentive Payment (% of District Invoice)	Incentive Payment (% of RNG Gross Receipts)
>52.1%	6.0%	3.0%
49.1 to 52%	5.0%	2.0%
46.1 to 49%	4.5%	1.5%
43.1 to 46%	4.0%	1.0%
40.1 to 43%	3.5%	0.5%
40%	zero	zero

Easements: SWDD grants right to access, occupy and use the Interconnect Site and a LFG pipeline through a non-exclusive easement.

Adjustments: Starting October 1, 2021, and each October 1 thereafter, the LFG Price shall be adjusted upward by two percent (2%).

Financial Analysis: This negotiated agreement provides for a better definition and methodology for the LFG purchase by IRED, which is to be used for the generation of electricity at their site. If the electricity production exceeds the plant's needs as anticipated, it would be sold to Florida Power & Light for its use.

For estimating purposes, a range of LFG flow to IRED from 250 SCFM to 750 SCFM at a baseline methane content of 40% would provide estimated revenues of \$36,000 to \$192,000 annually to SWDD, assuming ideal conditions and operation of the generators at 95%. Any deviation from these assumptions would result in lower estimated revenues. The IRED agreement also includes an incentive payment for higher methane content. For example, based on the same range of LFG flows at a methane content of 48% would provide an additional estimated revenue of \$9,000 to \$48,000 annually to SWDD for a total estimated revenue of \$45,000 to \$240,000 annually to SWDD.

Also, built into the agreement is the provision for IRED to market credits on behalf of SWDD, wherein there is an additional potential revenue to SWDD. The actual amount is based on registration and verification on carbon markets; however, a conservative estimate is that SWDD may earn approximately \$10,000 to \$25,000 per year after IRED is compensated for the marketing of the carbon credits with SWDD.

Overall, this agreement may provide estimated revenues of \$46,000 to \$265,000 per year in revenues from the use of LFG based on certain assumptions. However, over a 20-year term, factoring in a built-in annual LFG price adjustment of 2% and a gradual increase of flow from 250 SCFM to 750 SCFM, this is a potential of \$3.2 million in revenues for SWDD, which could vary up or down based on a multitude of factors.

If IRED proceeds with an LFG to RNG project, the estimated royalties above may potentially increase to SWDD as the agreement includes a royalty payment of 10% of the gross receipts generated by the RNG facility for the sale of renewable natural gas.

Issues/Concerns: Overall, there are very limited concerns for this project as it provides both an environmental and economic benefit to SWDD. However, one of the reasons that staff negotiated the allotment of 225 SCFM in the LFG Agreement is based on the potential parallel project involving the use of LFG for the thermal treatment of leachate. There could be a scenario wherein SWDD would need to negotiate with IRED for additional LFG required for peak leachate flows. At this time via a separate agenda item, staff is requesting further evaluation of this technology through a pilot test.

Funding:

No funding is requested in this agenda item as this is a potential revenue project.

However, additional funding may be needed in the future as a result of this agreement for infrastructure upgrades and operational costs to our LFG system to ensure reliable production and delivery of LFG to IRED.

Recommendation:

Staff recommends that its Board approve the Landfill Gas Agreement, including the granting of easements, with the Indian River Eco District, LLC and authorize the Chair to execute the agreement and all other documents necessary to effectuate the agreement, after review and approval by the County Attorney.

Attachment:

- 1) Landfill Gas Agreement with Indian River Eco District, LLC