

## SUMMARY FOR PUBLIC RELEASE

**PROJECT TITLE:** Waste to CLEAN Fuels for Decarbonizing Transportation in the Rio Grande Valley Region (CLEAN-RGV)

**Applicant:** Houston Advanced Research Center (HARC)

**PROJECT OBJECTIVES:** Assess the potential of WWTPs in the Lower Rio Grande Valley region, a DAC in South Texas, to generate clean fuels from waste, pairing the most feasible plants with local transportation systems interested in using those clean fuels. Complete at least two feasibility analyses for viable projects integrating supply and demand of clean fuels, accepted by the local communities and stakeholders, and ready to transition to a Topic Area 2 proposal in future funding rounds.

**PROJECT IMPACT:** Reduce the environmental emissions associated with WWTPs and transportation in the LRGV by leveraging waste energy. The development of a scalable model for WtE implementation that can be replicated in other regions.

**PI:** Carlos Gamarra, Ph.D. P.E.- Clean Energy Program Director at HARC.

**PROJECT DESCRIPTION:** Achieving net-zero greenhouse gas emissions by 2050, with significant milestones to be reached by 2030 goals requires immediate and innovative action, particularly in regions like the Rio Grande Valley (RGV), which is both an energy community and a disadvantaged community. The project aims to investigate the feasibility of capturing waste at Wastewater Treatment Facilities (WWTPs) in the RGV and converting it into renewable fuels such as biogas, renewable natural gas (RNG), and hydrogen (H<sub>2</sub>). By focusing on the RGV's transportation systems, the project aligns with broader efforts to transition public transportation systems to sustainable energy sources, reducing emissions and promoting cleaner air for the community. By leveraging the waste generated at WWTPs, this project has the potential to create a replicable model for other energy communities facing similar challenges. The project also supports the Biden administration's goals of advancing environmental justice by providing a clean, sustainable energy solution to a region that has historically been underserved. The integration of waste-to-energy (WtE) technologies with public transportation use cases presents a compelling opportunity to maximize the benefits of renewable energy production in the RGV. This approach will help the RGV reduce its carbon footprint, improve air quality, and foster workforce development opportunities in a disadvantaged community, making it a critical initiative in the fight against climate change.

<b>Key Participating Organizations</b>	<p>Funded Partners: Future Edge Research and Lower Rio Grande Development Council.</p> <p>Non-funded partners: ITAC at the University of Texas at Rio Grande Valley and Southcentral Onsite Energy TAP.</p>
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