

Project 001



Construction & demolition waste regional project

University of Hawaii

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Program Manager: Prem Lobo

Cost Share Partner: University of Hawaii, State of Hawaii

Objective:

Generate information and data needed to support regional supply chain analysis for SAF production from construction and demolition (C&D) waste feedstocks on the island of Oahu, Hawaii

Project Benefits:

Availability of physicochemical properties of C&D feedstock available to project developers
Analysis of feedstock temporal variability
Equilibrium analysis of contaminants generated from feedstocks under gasification conditions
Data on product gas contaminants to inform process design and techno-economic analysis (TEA)

Research Approach:

Conduct C&D waste sampling campaign at PVT Land Co. landfill over the course of a year
Analyze fuel sample properties relevant to thermochemical conversion technologies
Conduct analysis with FactSage™ thermochemical equilibrium software to predict contaminants and their concentrations and phases to inform gasification system design
Conduct benchscale gasification tests to determine product gas quality and yield, identify contaminants and their concentrations, identify operating difficulties

Major Accomplishments (to date):

Completed sampling campaign and sample analysis; results summarized in publication
Completed FactSage analysis, manuscript in preparation
Two benchscale gasification tests completed; one test report posted on HNEI website, one in revision

Future Work / Schedule:

Complete benchscale gasification tests to produce data on gas quality, yield, and contaminants
Begin contaminant removal work to inform process design and TEA analysis