

RFT 8757152 LA3839C - CFT - UCD Two-Stage Anaerobic Digestion System (TSAD)

Q1	Vessel sizing: Please confirm the required total/nominal vessel volumes for Stage 1 and Stage 2, given the specified working volumes of 30 L and 80 L.
A1	<i>The TRD explicitly mandates working capacities of 30 L for Stage 1 and 80 L for Stage 2, combining for a total working volume of 110 L. The nominal/total vessel volumes must be sized by the supplier above the working volumes to accommodate necessary headspace for gas outlets and nitrogen headspace purging/flushing.</i>
Q2	Vessel construction: Please confirm required stainless-steel grade, internal surface finish, design pressure and operating pressure for both bioreactors.
A2	<i>Both bioreactors must be constructed from stainless steel, might require 316 grades for necessary part of the reactor, for other you can use low grade steel. Storage, feed, and digestate tanks can be polyethylene or steel. We are not operating this system with any pressures but there should not be any leaks during operation.</i>
Q3	ATEX: Is the laboratory classified as an ATEX zone? If yes, please specify Zone, gas group and temperature class, and whether ATEX is required for the full system or only selected components.
A3	<i>No, the laboratory space is not certified as ATEX zone. We are planning to place the biogas collection bag outdoor (behind the laboratory space). Thus, we require only selected components ATEX certified.</i>
Q4	Utilities: Please confirm available electrical supply, cooling/heating utilities, nitrogen, compressed air, water, drain and LAN at the installation point.
A4	<i>The planned installation is a shed, so the available utilites are electrical mains, water, drain, and wifi. There is no piped N2 or compressed air but those can be supplied via pressurized cylinders.</i>
Q5	Feedstock / pumps: For the 10 percent dry-matter feed, please confirm maximum particle size, approximate viscosity/density, required dosing accuracy and expected pump flow range.
A5	<i>Approximate density is 1010 to 1250 kg/m³, and viscosity 10 to 300m Pa.s. maximum particle size: 5.0 mm to 10.0 mm. if necessary Substrates are broken down, liquefied, and homogenized using a storage tank macerator. our automated, self-priming feed pumps are required to transfer solids mixtures across all stages (10% TS macerated down to 5% TS digestate), delivering an automated precise dose of ≥4 kg/day per stage.</i>
Q6	Biogas burner / CHP: Please clarify whether A21 requires a simple biogas flare/burner or an actual CHP unit producing heat/electricity.

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A6.	<i>A simple biogas burner is sufficient</i>
Q7	<i>Budget: Does the stated €105,000 ex VAT maximum budget include the complete mandatory scope: reactors, tanks, pumps, gas analyser, gas bag, safety monitoring, burner/flare, DDP delivery, installation, validation, training and 3-year warranty</i>
A7	<i>The maximum estimated budget of €105,000 ex VAT covers the complete mandatory scope include: Bioreactors (Stage 1 & 2), 4 feed pumps, gas analyzer, gas treatment, and 3 m³ gas bag, storage tank, feed tank, Cookstove burner/flare, safety/leak monitoring, PLC/HMI controls, and live CSV data logging, DDP delivery to UCD Lyons Farm, full installation, process piping, site testing/validation, multi-day onsite and remote training, and the 3-year all-inclusive warranty (hardware, software, probes, call-outs, travel, and parts). Optional items (transportation tank A15, digestate tank A16, trailer A17, vacuum pump A18, biomethane compression A24, preventive maintenance B10, and extended warranty years 4–5 B11) are evaluated separately and excluded from the €105k cost evaluation.</i>