

Q1	Ref B1: The required three bioreactors MUST all be of the same total volume which may range from 500 ml to 1000 ml with independent process control required. The working capacity MUST be at least 60 percent of total volume for each bioreactor. Would an option of a Bioreactor with a Total Volume of 1.5L, and a Working Volume of 0.3- 1L be considered if the working volume is equipment of 60% of a 500ml?
A1	Yes, this will be considered. The Authority's primary requirement is that the bioreactor is capable of operating from a working volume equivalent to at least 60% of its total volume, in accordance with the specification.

Q2	Ref B7: As well as the required ports for feeding, sparger, thermal sensor etc the bioreactors MUST each have at least 3 x 12 mm ports for probes to operate simultaneously. Desirably there should be capability for addition of further probe ports to each bioreactor. Would it be acceptable to offer a system which can connect 2 sensors to the controllers at a time Or do you plan to use each 3 sensors in the same bioprocess?
A2	Flexibility is needed to have a third additional port for future applications.

Q3	General: Is it the intention for the 3x bioreactors to be installed side by side or in close vicinity to each other?
A3	Yes, the intention is to install the 3 bioreactors side by side / in close vicinity to each other.

Q4	In the RFT, you are asking for three, but in the TRD, you require 2 as a MUST requirement and provide two tables for each lot.
A4	2 references for this requirement

Q5	We were wondering if it were possible to request a site visit?
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A5	A site visit will be facilitated on Thursday, 16 July, between 9:00 am and 4:00 pm. If you wish to attend, please confirm by sending a message via the eTenders messaging facility. Once your attendance has been confirmed, a specific time slot will be allocated.

Q6	Lot participation Could the Contracting Authority please confirm whether tenderers may submit a tender for Lot 1 only, Lot 2 only, or both Lots? The tender documents state that suppliers can tender for one or both lots, while the notice appears to indicate that tenderers must submit tenders for all lots
A6	Tenderers can apply for one or both lots as per the tender documentation.

Q7	Estimated contract value Could the Contracting Authority clarify whether the estimated value of EUR?
A7	The updated estimated budget for Lot 1 is 167,000 ex vat the estimated budget for lot 2 is €14,000 ex vat for Lot 2

Q8	Bioreactor volume For Lot 1, could the Contracting Authority confirm whether the required 500 mL to 1000 mL range refers to total vessel volume, and whether a 1 L total volume vessel with at least 600 mL working volume would be acceptable?
A8	Yes, the 500 ml to 1000 ml range refers to the total vessel volume. A 1L total volume vessel with at least a 600 ml working volume would be acceptable

Q9	Probe port standard Could the Contracting Authority confirm whether the required 3 x 12 mm probe ports refer to standard 12 mm autoclavable probes, for
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	example PG13.5-type connections , or whether another connection standard is required?
A9	A standard connection (e.g. 12mm) for autoclavable probes is required.

Q10	DO₂ accuracy For the DO ₂ probe requirement, could the Contracting Authority clarify whether the stated ±0.1 percentage accuracy refers to sensor accuracy, display resolution, or control accuracy?
A10	The ±0.1 percentage accuracy refers to sensor accuracy.

Q11	Autoclaving scope Could the Contracting Authority clarify which components are expected to be autoclaved as part of the “fully assembled bioreactor with all probes and sensors”? For example, should this include pH, DO ₂ , ORP, foam and optical density probes, tubing and sparger, while excluding external pumps, controller and off-gas analyser?
A11	Autoclaving should be possible for pH, DO ₂ , ORP, foam and optical density probes, tubing and sparger, while excluding external pumps, controller and off-gas analyser. Contracting Authority are open to alternative methods of sterilisation, the specifics of this must be provided in the submission. As per tender document “Where not possible, an alternative sterilisation strategy and details MUST be provided.”

Q12	Gas configuration Could the Contracting Authority specify the expected gas configuration for aerobic and anaerobic operation, including which gases will be available on site and whether independent gas flow control is required for each vessel?
A12	Available gases – compressed air; nitrogen currently. The three bioreactors will be located in close vicinity to each other.

	The configuration of the gas flow controllers must be such that it allows for the individual bioreactors to have custom gas mixtures in parallel. E.g. bioreactor 1 might be running a 50:50 gas mixture while bioreactor 2 might be running a 70:30 gas mixture.
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Q13	Off-gas analyser configuration For Lot 1, would a single O₂/CO₂ off-gas analyser with selectable or multiplexed connection to the bioreactors be acceptable, provided that all three bioreactors are pre-prepared for off-gas connectivity?
A13	Yes a single off gas analyser is sufficient. Yes, provided that all three bioreactors are pre-prepared for off-gas connectivity

Q14	Software updates and licences Could the Contracting Authority confirm whether software licences and updates are expected to remain free of recurring subscription fees for the lifetime of the system, or only during the warranty period?
A14	It would be expected to have fully functioning software for the lifetime of the system. (To include any future patches to software) We would expect updates in software to be included during the warranty period as a minimum.

Q15	Lot 2 compatibility
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	For Lot 2, could the Contracting Authority provide mechanical/electrical interface details, drawings or manuals for the existing Solaris Jupiter 2.0 Pressure bioreactor, serial JP-2.0-R02-22-39 , and confirm whether an equivalent compatible light module is acceptable?
A15	Yes, any compatible light module is eligible. As per tender, it “must be able to operate in an independently and controlled manner”. If the integration with the bioreactor controlling unit is possible it must comply with the technical specifications on the manual is now provided as requested.

Q16	Light intensity unit For Lot 2, could the Contracting Authority confirm whether the desirable light intensity of 3000 $\mu\text{mol photon}/\text{m}^2$ should be interpreted as $\mu\text{mol photons}/\text{m}^2/\text{s}$, and at which measurement point this should be demonstrated?
A16	Yes, it should be interpreted as $\mu\text{mol photons m}^{-2} \text{s}^{-1}$ The desirable light intensity must have “Photon flux density and other light parameters adequate for growth of unicellular algae”. The desirable measurement should be carried out at the center of the bioreactor, and approximately 10 cm above the bottom of the reactor. Outer diameter : 275 mm, Vessel D/H aspect ratio: 1:3, Double-wall borosilicate-glass vessel.

Q17	Point B8 states "at least two sparged gases " Please could you state ideal number of gases and which gases. N2 will be needed for anaerobic use.
A17	It would be expected that Nitrogen and compressed air will be the gasses used initially with the machine.

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Q18	Point B30 states "A provision to connect and integrate any third-party sensors in the bioreactor, subject to capability to connect, is DESIRABLE" . Sensor predispositions and additional analogue inputs/outputs can be supplied but more information is needed. Please advise on any sensors considered for future use.
A18	We are interested in a Raman probe being added in the future to support ongoing research in the school in this area.

Q19	Point D1, you specify delivery under DDP Incoterms. We do not normally supply under DDP and instead use DAP Incoterms. Would delivery under DAP be acceptable?
A19	To ensure a like-for-like evaluation of all tenders, prices must be submitted on a Delivered Duty Paid (DDP) Incoterms basis, as specified in the tender documentation.

Q20	would magnetically suspended stirring be acceptable, or is mechanical overhead stirring a requirement?
A20	Overheard stirring is required.

Q21	Which gases will be used during the process?
A21	The capability to sparge both air and N ₂ is required

Q22	Would a solution including 2L vessels (with 0.35 to 1.3L working volumes) be acceptable. 1.2L is 60percent of total volume.
A22	Yes, this will be considered. The Authority's primary requirement is that the bioreactor is capable of operating from a working volume equivalent to at least 60% of its total volume, in accordance with the specification.

Q 23	Could you please clarify the following. B13 for the bioreactor with Redox, do you also want to use pH and pO2 or just pH and Redox.
A 23	The head plate of each of the three bioreactors must be the same. The connectivity for the controller units for each reactor must be the same. It must be possible for all sensors connected to the headplate to be in operation simultaneously It must be possible to connect three of any of the four probes simultaneously (in the limit 4 possible combinations exist) Tenders must make clear the differences in connectivity offered for each probe when operating simultaneously and its impact on the performance of the probes or its data collection capability.