

The University of Southern Mississippi  
Notice of Proposed Sole Source Purchase  
SSP 26\_025  
RFQI 3140004560

The University of Southern Mississippi anticipates purchasing the item(s) listed below as a sole source purchase. Anyone objecting to this purchase shall follow the procedures outlined below.

1. Description of the commodity that USM is seeking to procure:

The University of Southern Mississippi (USM) seeks to procure a proprietary, fully integrated closed-system photobioreactor (PBR) platform manufactured exclusively by PureBiomass, Inc. This system is specifically designed to provide biosecure algal cultivation and is the only known commercially available platform that integrates all required components into a single, unified system capable of supporting continuous algal biomass production for oyster hatchery operations and applied research within the OHRC Algal Facility.

The requested system includes multi-stage cultivation capacity at 25 L, 250 L, and 1,350 L scales, enabling controlled progression from inoculum through production-scale culture within a closed and sterile environment. The platform incorporates proprietary gamma-irradiated sterile culture vessels, integrated dimmable LED lighting arrays, and automated environmental control systems, including remote Wi-Fi-enabled monitoring and control of pH, temperature, CO<sub>2</sub> injection, and air delivery.

Additional components include integrated sterile filtration, fluid and air handling systems, structural support frames and containment cages, and NEMA-4 rated control enclosures designed for use in wet and corrosive environments typical of aquaculture operations. These components are engineered to operate as a single, interdependent system and are not available as separate, functionally equivalent off-the-shelf items.

2. What efforts were made by the Agency to determine that the proposed provider is the only entity that can provide the commodity needed?

USM conducted market research through:

- Review of commercially available photobioreactor systems
- Evaluation of alternative technologies (rigid tanks, open pond systems, single-scale reactors)
- Consultation with technical staff and hatchery operators

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This review determined that no other vendor provides a system that combines:

- Compatibility with existing PureBiomass equipment
  - Closed-system sterile bag technology at production scale
  - Integrated multi-stage scale-up platform
  - Facility-compatible footprint
3. What efforts were made to ensure the best possible price for the commodity was obtained?

USM evaluated pricing by:

- Reviewing the detailed vendor quote for completeness and cost structure
- Comparing pricing against similar-scale photobioreactor systems and prior procurements
- Assessing total cost of ownership, including installation, maintenance, and operational efficiency

Given the proprietary nature of the system, price competition is not available; however, the pricing is consistent with industry expectations for integrated, large-scale photobioreactor systems and reflects fair market value.

4. Why is the commodity the only one that can meet the needs to the Agency?

This system is the only acceptable solution because it is the only platform that integrates with existing equipment, meets sterility requirements, fits within facility constraints, and provides a continuous scale-up process.

Any alternative would result in:

- Incompatibility with existing systems
- Increased contamination risk
- Additional capital costs for facility modification

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- Operational inefficiencies and increased failure risk

5. Why is the amount expended for the commodity reasonable?

The cost is reasonable because it reflects:

- A fully integrated, turnkey system including reactors, controls, lighting, gas delivery, and remote monitoring.
- Elimination of additional costs for facility modification or custom engineering
- Reduced operational risk and improved production reliability
- Preservation of prior investment in compatible PureBiomass infrastructure

When considering lifecycle cost, operational efficiency, and risk mitigation, the proposed expenditure represents the most cost-effective solution available.