

## REQUEST FOR PROPOSALS

### For Wool Bioharvesting Technology

### 2023

#### PURPOSE

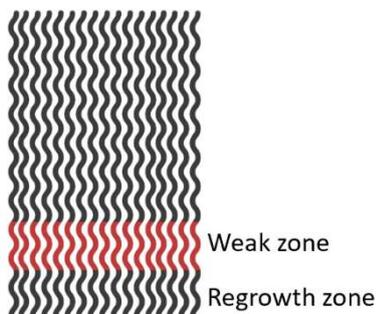
Australian Wool Innovation Limited (AWI) is issuing this Request for Proposals (RFP) world-wide for the purpose of obtaining responses from engineering companies, universities, entrepreneurs, start-ups and other organisations for the development of a Wool Bioharvesting System. This RFP contains a summary of information about AWI, RFP requirements, program timeline and funding.

#### BACKGROUND

AWI is a not-for-profit company that invests in research, development and marketing along the global supply chain for Australian sheep wool to enhance the profitability, international competitiveness and sustainability of the Australian sheep wool industry. AWI is funded by woolgrower levies, with matching research and development funds from the Australian Government. <https://www.wool.com/about-awi/>

Sheep wool harvesting is also known as sheep shearing where the woollen fibres grown by sheep over most of its body in a wool fleece, are cut above the skin level, leaving that fleece to regrow so the sheep can be shorn again in the future. Shearing is universally done by shearers who are trained in either the use of a mechanical shearing handpiece or blade shears. The process of shearing has remained relatively unchanged since the introduction of mechanical shearing in the late 1800's.

While there have been efforts to create a robotic shearing system to automate the shearing process, sharp cutters, movable animals, wrinkles and other anatomical obstacles make this an extremely complex engineering challenge.



An AWI-funded project with the University of Adelaide is investigating a new way of biological wool harvesting that enables the fleece to remain on the sheep, without the need for nets, while a new covering of wool regrows. Once the regrowth zone is long enough to protect the animal from hypothermia and sunburn, the weakened wool can then be removed. <https://www.wool.com/on-farm-research/wool-harvesting-innovation/>

Harvesting the weakened wool requires the development of a new device that applies a force to separate the wool from the body of the sheep. However, the device will not require the wool to be cut as per a conventional comb and cutter which should make the engineering challenge of automated/robotic wool harvesting less complex.

Weakened wool does not fall off in the field despite the very low staple strengths (<10N/kTex). Most forces which apply in the field are applied to a significant amount of staples which means that while each staple is weak (harvestable), when combined with others, the total force to break them all is quite high (unharvestable).

This is a very important consideration for any wool bioharvesting system, little force is required to remove a staple or small portion of weakened wool with no discomfort to the sheep, but a significant amount of force would be required to remove larger portions of the fleece. As this would be uncomfortable for the animal, this approach would be unacceptable.

The next phase of this project is the selection and funding of proposals to develop manual/semi/fully automated wool bioharvesting technology to harvest the weakened wool.

#### **SCOPE OF WORK**

Project proposals are invited from individuals or companies looking to develop solutions for weakened wool harvesting.

This could be in the form of a handpiece for manual wool removal through to a more comprehensive automated system including removal but also all or part of the sheep and wool handling process:

- Sheep delivery
- Sheep catch to sheep positioning
- Sheep restraint and release
- Weakened wool removal
- In shed wool processing (contaminant detection/elimination, fleece, and fibre characteristics for wool classification)
- Wool pressing and baling into different collection lines.

The first stage of all proposals submitted must involve the development of a wool removal mechanism that, depending on the scope of the project, will be integrated into a handpiece or a semi/fully automated wool harvesting system.

Early testing of the wool removal mechanism proposed, and a go/no go decision will be included in the milestone calendar as indicated in page 5 of the proposal template. (**Annexure 1**).

It will be a predetermined requirement at the end of the project to deliver prototypes that are at least at Technology Readiness Level 5 (Technology validated in relevant environment).

Sheep with weakened wool will be available for testing for the duration of the selected project/s.

**BUDGET**

- Dependent on the scope of the proposal
- Indicative budget \$50,000-\$3,000,000 over maximum 3 years.

**APPLICATION REQUIREMENTS**

If you consider that a confidentiality agreement is required, AWI will provide you with a non-disclosure agreement for you to countersign and return to AWI. Please contact us for further information.

**EVALUATION CRITERIA**

All applications will be assessed against the below criteria.

- Practicability of the solution proposed. Practical aspects of the product aimed to facilitate its adoption will be highly valued (easy to handle, easy to maintain, portable, cost effective, efficient and fast).
- Resources and Management Strategy. Demonstration of appreciation of the elements in a clear project management plan that ensures resources are deployed in the most effective way to deliver high quality research outputs. Demonstration of appreciation of the elements of workplace health and safety and animal welfare during the research phase and in a commercial product.
- External investment, partnership and/or collaboration with commercialisation companies or with other research organisations will be positively valued.
- Technical expertise. A strong, multidisciplinary team with the necessary skills to address the challenges.

**DECLARATIONS**

Please include the following declarations in your formal application to this RFP:

- I declare that the information provided in my response to this RFP are true and correct and disclose all required and relevant details.
- I confirm that no party to this response has been declared insolvent or bankrupt or is subjected to a deed of arrangement with creditors.
- I confirm that I am authorised to lodge this RFP on behalf of the respondent.

**KEY TIMEFRAMES AND SUBMISSION DETAILS**

| ITEM                   | DEADLINE         |
|------------------------|------------------|
| RFP process opens      | 20 October 2023  |
| RFP submissions due    | 22 December 2023 |
| Outcome of RFP advised | 30 January 2024  |

Completed RFPs should be submitted via email [projects@wool.com](mailto:projects@wool.com) no later than **22 December 2023**.

AWI reserves the right to make changes to the above timeline at any time and shall notify respondents as soon as possible of any changes. Further, AWI reserves the right to withdraw this RFP at any time, or to re-invite responses on the same or any alternative basis as well as the right to choose not to award any contract as a result of the RFP process.

#### **COSTS AND EXPENSES**

AWI will not in any circumstances be liable for any costs, expenditure, work or effort incurred by a respondent in carrying out enquiries in relation to, proceeding with, or participating in this RFP process, including if the RFP process is terminated or amended by AWI.

#### **INTELLECTUAL PROPERTY**

All intellectual property rights in this RFP and all materials provided by AWI in connection with this RFP are, and shall remain, the property of AWI.

#### **ENQUIRIES AND FURTHER INFORMATION**

Reports from previous AWI funded wool harvesting projects will be available for the proponents. Any enquiries or requests for clarification of any matters arising from this RFP should be sought from:

#### **Carolina Diaz**

Program Manager Animal Wellbeing and Industry Resilience

[Carolina.Diaz@wool.com](mailto:Carolina.Diaz@wool.com)

**ANNEXURE 1: Proposal template**

**BIOLOGICAL WOOL HARVESTING SYDTEM**

**PROJECT PROPOSAL 2023**

**PROJECT TITLE:** (maximum of 40 characters)

Please note that submitting your proposal does not create a legal contract between you and AWI. All proposals will be assessed against AWI’s strategic priorities and programs and AWI may reject proposals at its sole discretion.

**TOTAL PROJECT VALUE:**

|                                 | <i>Yr1 (2023/24)</i> | <i>Yr2 (2024/25)</i> | <i>Yr3 (2025/26)</i> | <i>Total</i> |
|---------------------------------|----------------------|----------------------|----------------------|--------------|
| <i>Funds Requested from AWI</i> |                      |                      |                      |              |
| <i>Other Funds</i>              |                      |                      |                      |              |
| <i>Total Project Budget</i>     |                      |                      |                      |              |

***Please ensure funding is assigned to the correct year***

**Outline:**

*Provide a brief summary/outline of what is to be achieved by this project that conveys its importance and relevance to the Wool Industry (max 100 words)*

**Strategic Fit:**

|  |   |
|--|---|
| AWI Program  | Agri Technology   |
| Collaboration with other parties   | <i>List names of collaborative organisations</i>  |
| Review by other parties  | <i>List names of third parties that have reviewed/endorsed this proposal prior to its submission.</i> |
| Has this proposal been submitted to another organisation/s? Please list each |   |

**1. Project Details** *If more than one, provide the full details for all collaborating organisations***Researcher/Contracting Party Details (external party)**

|   |  |
|---|--|
| Name ( <i>Legal Company Name and Business Unit/Department</i> ) |  |
| Street Address  |  |
| Postal Address  |  |
| ABN   |  |
| Company Type  |  |

**Project Leader**

|                |  |
|----------------|--|
| Name           |  |
| Email Address  |  |
| Phone Number   |  |
| Postal Address |  |

**Administration Contact Details**

|                |  |
|----------------|--|
| Name           |  |
| Email Address  |  |
| Phone Number   |  |
| Postal Address |  |

|                             |   |            |                         |                       |                                   |               |
|-----------------------------|---|------------|-------------------------|-----------------------|-----------------------------------|---------------|
| <b>Project Description.</b> | <p><i>Enter a full description of your proposed project, including:</i></p> <ul style="list-style-type: none"> <li><i>The purpose or reason for the project, background information and the issues the project is addressing.</i></li> </ul>                                |            |                         |                       |                                   |               |
| <b>Project Objectives</b>   | <p><i>List clearly the objectives created or contributed to by this project.</i></p> <ul style="list-style-type: none"> <li><i>Objectives of the project should be described in a SMART (specific, measurable, attainable, realistic and time-bound) format.</i></li> </ul> |            |                         |                       |                                   |               |
| <b>Risk Assessment</b>      | <b>Risk Source</b>  |            | <b>Risk Description</b> |                       | <b>Mitigation</b>                 |               |
|                             | <i>Eg. Partner</i>  |            |                         |                       |                                   |               |
|                             | <i>Eg. Market</i>   |            |                         |                       |                                   |               |
|                             | <i>Eg. Product</i>  |            |                         |                       |                                   |               |
|                             | <i>E.g Privacy and Data Protection</i>  |            |                         |                       |                                   |               |
|                             | <i>Eg. Environmental</i>  |            |                         |                       |                                   |               |
|                             | <i>Eg. Animal Welfare</i>   |            |                         |                       |                                   |               |
| <b>KPIs</b>                 | <b>Action</b>   | <b>KPI</b> | <b>Unit of Measure</b>  | <b>Source of Data</b> | <b>Expected Date or Frequency</b> | <b>Target</b> |
|                             |   |            |                         |                       |                                   |               |
|                             |   |            |                         |                       |                                   |               |
|                             |   |            |                         |                       |                                   |               |
| <b>Start Date</b>           | <i>Insert Commencement Date</i>   |            |                         |                       |                                   |               |

|   |   |
|---|---|
| <b>End Date</b>   | <i>Insert expected end date</i>   |
| <b>Project Activities</b>   | <p><i>Provide a <b>detailed</b> breakdown of the project activities.</i></p> <p><i>The plan should detail all major tasks required between project commencement and completion.</i></p> |
| <p><b>Milestones and Deliverables</b></p> <p>Each project requires milestones so that AWI can monitor progress and manage payments. List numerically the milestones in the project specifying the date associated with each milestone either as days or months after project start or as a specific date and any payment that is to be associated with that milestone. Each milestone must identify an achievement criteria (or deliverable) so that AWI can measure the achievement of that milestone. The milestone sequence must include at least one more stop/go milestone (exit point) and also for projects of more than 2 years' duration, a full mid project review milestone.</p> <p><b>June milestones should be avoided as per AWI policy</b></p> |   |

| Milestone Number         | Milestone and/or Deliverable   | Date Milestone/Deliverable Due | Payment Amount (excluding GST) |
|--------------------------|--|--------------------------------|--------------------------------|
| 01                       | Contract execution   | Commencement of the project    | Up to \$25,000                 |
| 02                       | Progress report and removal prototype testing on weakened sheep/fleeces. | 3 months                       | \$0                            |
| <b>GO/NO GO DECISION</b> |  |                                |                                |
| 03                       | Activities continue according to project plan                            |                                |                                |
| 04                       |  |                                |                                |
| 05                       |  |                                |                                |
| ...                      |  |                                |                                |
|                          |  |                                |                                |
|                          |  |                                |                                |
|                          |  |                                |                                |
|                          |  |                                |                                |
| <b>Total Price:</b>      |  |                                |                                |

**Project Funding (Budget)**

Please provide a budget for the project. The headings shown are indicative only. Please add other relevant budget lines as required. Please include details of items included under each heading.

Note:

- All Projects must include a salary cost for each member of the Project Team.
- The total project cost should **exclude GST**.
- Identify any proposed contributions from third parties to this project.

All project funding must be shown in AUD. For projects where payments will be made in local currency, the local currency equivalent must be shown in addition to the AUD amount.

| Financial Year (add additional years as required)<br>(1 Jul – 30 Jun)  | 2023/24<br>(\$K)  | 2024/25<br>(\$K)                         | 2025/26<br>(\$K) | TOTAL<br>(\$K)                |         |          |          |          |          |  |  |
|--|---|--|------------------|-------------------------------|---------|----------|----------|----------|----------|--|--|
| Salaries (list items)  |   |  |                  |                               |         |          |          |          |          |  |  |
| Administration (list items)  |   |  |                  |                               |         |          |          |          |          |  |  |
| Communications (list items)  |   |  |                  |                               |         |          |          |          |          |  |  |
| Evaluation (list items)  |   |  |                  |                               |         |          |          |          |          |  |  |
| Travel (list items)  |   |  |                  |                               |         |          |          |          |          |  |  |
| Capital (list items)   |   |  |                  |                               |         |          |          |          |          |  |  |
| Other Operating (list items)   |   |  |                  |                               |         |          |          |          |          |  |  |
| <b>Total project costs</b>   |   |  |                  |                               |         |          |          |          |          |  |  |
| Other Contributors Cash (list items)   |   |  |                  |                               |         |          |          |          |          |  |  |
| Research & Other Organisations (in kind)   |   |  |                  |                               |         |          |          |          |          |  |  |
| <b>Total funds requested from AWI</b><br><i>please ensure the totals align with the table on page 1</i>  |   |  |                  |                               |         |          |          |          |          |  |  |
| <b>Project Exit Points</b>   | <p><i>You must identify clear exit points at which the project will either proceed (having achieved stated objectives), or not proceed (having failed to meet stated objectives).</i></p> <ul style="list-style-type: none"> <li>- Go/No Go after milestone 02</li> <li>-</li> </ul>  |  |                  |                               |         |          |          |          |          |  |  |
| <b>Leveraged or Co-funding</b>   | <p><i>Insert name of any third parties contributing funding to the project and either the \$ amount or ratio of funding.</i></p>  |  |                  |                               |         |          |          |          |          |  |  |
| <b>Researcher/ Contractor Background IP including data:</b><br><br>Background IP refers to Intellectual Property already in existence which is owned, licensed | NIL or All Intellectual Property rights (in whatever form) in:  |  |                  |                               |         |          |          |          |          |  |  |
|  | (a) the patents/trademarks/registered designs:  |  |                  |                               |         |          |          |          |          |  |  |
|  | <table border="1"> <thead> <tr> <th>Patent/Trademark/Registered Design Title</th> <th>Status</th> <th>Registration/ Application No.</th> <th>Country</th> </tr> </thead> <tbody> <tr> <td>[insert]</td> <td>[insert]</td> <td>[insert]</td> <td>[insert]</td> </tr> </tbody> </table> | Patent/Trademark/Registered Design Title | Status           | Registration/ Application No. | Country | [insert] | [insert] | [insert] | [insert] |  |  |
| Patent/Trademark/Registered Design Title   | Status  | Registration/ Application No.            | Country          |                               |         |          |          |          |          |  |  |
| [insert]   | [insert]  | [insert]                                 | [insert]         |                               |         |          |          |          |          |  |  |

|  |  |                  |                  |
|--|--|------------------|------------------|
| or held by the Researcher/ Contractor.                                   | (b) the following confidential know-how and trade secrets:<br><i>[insert details]</i>  |                  |                  |
|  | (c) copyright in the following documents and materials:<br><i>[insert details of written, visual or audio works and materials, including any computer programs]</i>  |                  |                  |
| <b>Project IP</b><br>insert description and proposed protection strategy | Project IP including data:<br>Project IP will be owned as follows:   |                  |                  |
|  | <b>AWI</b>   | <b>Party (1)</b> | <b>Party (2)</b> |
|  | <i>[Insert]</i>  | <i>[Insert]</i>  | <i>[Insert]</i>  |
| <b>Project Adoption and Commercialisation</b>                            |  |                  |                  |
| <b>Technology Commercialisation</b>                                      | <p>Is the objective for the Project IP to be licensed, sold or otherwise made available commercially?<br/>         YES <input type="checkbox"/> NO <input type="checkbox"/></p> <p><i>Provide evidence of the scale of the market for this product, and the basis for its competitiveness and the path to market.</i></p> <p><i>This can include:</i></p> <ul style="list-style-type: none"> <li>• <i>Proposed price point</i></li> <li>• <i>Royalty revenue shares</i></li> </ul> |                  |                  |
| <b>Commercialisation Partner</b>   | <i>If yes, indicate if a potential commercial partner has been identified, with details of any commercial discussions</i>  |                  |                  |

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**2. Declarations of Interest**

Researcher/Contractor must declare any conflicts of interests or perceived conflicts of interests, such as:

- Researcher/Contractor has a significant personal, familial or business relationship with an AWI representative;

- Researcher/Contractor has or will receive a personal profit or benefit as a result of undertaking the project.

Please include details of any conflicts or perceived conflicts of interests below, including the name of persons and/or organisation and relationship.

### 3. Declarations and Signature

By submitting your proposal, you confirm and acknowledge that:

- all information within it is true, correct and complete;
- you own or have permission to use all IP and data referred to in the application;
- AWI is not responsible for any costs incurred by you in taking part in any aspect of the call for proposals process;
- you have complied with all applicable laws, including relevant privacy laws; and
- you have appropriate authority to submit your proposal and that no party involved in your proposal has been subject to an insolvency event.

AWI will use your proposal for the purposes of evaluating it, and if successful negotiating a contract with you. We may also use it to comply with any audit, legal, governmental and/or parliamentary reporting requirements imposed on AWI.

AWI reserves the right to share your proposal with any potential project partners (such as other research and development institutions), other interested parties or grower representatives for the purpose of having them review the proposal as part of the evaluation process and to identify potential collaborators.

- If you do not want your proposal to be shared with third parties tick here

Researcher/ Contractor Signature(s)

Signature 1: .....

Signature 2: .....

Name: .....

Name: .....