



Terms of Reference

Alternative Options to Power Captive Bolts Devices for Cattle

Background

Under the Exporter Supply Chain Assurance System (ESCAS), exporters must ensure that Australian livestock exported for lot feeding or processing are treated in accordance with international animal welfare guidelines (as stipulated by OIE) in the overseas supply chain.

Compliance with best practice slaughter methods as recommended by the OIE is imperative if animal welfare is to be assured in abattoirs. An important tool to increase the probability of a positive welfare outcome is the use of stunning before slaughter, where cattle can be reliably rendered unconscious.

Stun reliability depends upon certain factors including the type of propellant used, the maintenance or calibration of the device, training on appropriate use and appropriate supporting infrastructure (including restraint boxes, head restraint etc).

The device that has the greatest application in international markets is the hand-held captive bolt that uses black-powder in a cartridge, as the propulsive agent (often .22 blank charges). These stunning devices are relatively cheap to purchase and can be used in many applications due to their portability. However the legality of the import and possession of the charges is currently being disputed in at least one of our large international markets and there is a need to constantly supply the charges to process Australian cattle. Failure to deliver or distribute charges within a market, has the potential to compromise animal welfare.

The livestock export industry is therefore keen to explore the potential options for alternative technologies to power captive bolt stun devices that can cost effectively replace the current stunners used throughout ESCAS supply chains.

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The livestock export program is seeking expressions of interest from qualified researchers, or consultants that have practical and scientific understanding of animal physiology and cattle slaughter processes. They should have the capacity to consider and propose a device or alternate stunning method that causes immediate loss of consciousness in cattle. The LEP will select the best placed researcher(s) to deliver all or part of the following terms of reference.

1. Develop criteria to review and evaluate different options for powering captive bolts
 - a. These criteria may include (but not be limited to) reliability; cost; portability; maintenance; safety; market acceptability; ease of use; reload time and religious considerations.
 - b. Criteria must also describe scientifically based design features including bolt length and diameter as well as force/speed required.
2. Identify and evaluate the following against the developed criteria:
 - a. Existing options to power captive bolt stunning devices that comply with OIE guidelines for the slaughter of cattle internationally, noting individual country tolerances of stunning as well as stunner legality;

- b. All potential new technologies, systems or devices that could be used to power captive bolt stunners (Eg. the use of volatile gas, liquids, electromagnetics, hydropneumatics).
3. Undertake a feasibility study of the development of selected new technologies that have a high likelihood of being accepted and utilized in live export markets. Include cost-estimates of manufacturing, maintenance and operation.
4. Outline and discuss legal and other compliance/acceptance considerations specific to each device for manufacturing, importation, distribution and use (if any).

Any project proposals must be submitted utilising the MLA Application Preliminary Template.

Project Timing

The timing of the project should be based on the project being completed in the shortest timeframe possible. Suitable milestones will be negotiated in the contract schedule.

Resources Required

The proposal should include all resources and personnel required to undertake the project together with a preliminary budget.

Reporting Requirements

The researcher will furnish milestone reports (as required) and a final report giving full details of the results and recommendations. The researcher will also provide a PowerPoint presentation to allow in market presentation of the options and evaluations.

The consultant shall report directly to Sharon Dundon, Livestock Export R&D Manager, Meat and Livestock Australia.

Confidentiality and IP

The researcher will be required to enter into a standard contract for services with MLA.

Payment of Fees

The proposal should indicate the total cost of completing the project. It is also possible to incorporate a separate fee for travel, which will be reimbursed based on actual expenditure. An estimate of this cost should also be included.

Payment of fees will be fully dependent upon MLA's acceptance of milestone completion. The proposal should include reference to milestones and a schedule of payments as required.

Further Information

If you have questions regarding this project contact:

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