About AMPC

The Australian Meat Processor Corporation (AMPC) is the national Research & Development Corporation (RDC) that supports the Red Meat Processing Industry throughout Australia. AMPC’s mandate is to invest in and deliver Research, Development and Extension (RD&E) outcomes that enhance the sustainability productivity and profitability of the red meat processing sector.

RD&E Program Development

In partnership with the Red Meat Processing Industry and the Australian Government, AMPC seeks to fund the delivery of a balanced portfolio of RD&E investments across five key programs. Those programs are:

1. Technology & Processing
2. Environment & Sustainability
3. Food Safety, Product Integrity & Meat Science
4. Implementation, Extension & Education
5. Industry Improvement & Economic Analysis

With investments across the above program areas, AMPC is looking to fund:

a) Projects that are disruptive or transformative in nature and can deliver opportunities for the red meat processing sector to obtain sustainable competitive advantage. It is likely that these activities will require a range of disciplines and capabilities and extend over several years (i.e. 2-3 years).

b) Medium term projects (i.e. 6-18 months) that seek to adapt or enhance existing technologies into new products and processes. Activities might include design, development and prototyping with a demonstrated route to commercialisation.

c) Short term (i.e. <6 months) projects that include working partnerships and integration with industry. AMPC will encourage and facilitate industry involvement and provide guidance.

d) Projects that demonstrate awareness of processing costs and benefits to enable an assessment of economic, environmental, social, and regulatory impacts.

Activities and Outputs required from Providers

Research providers will be responsible for activities and outputs such as:

a) Assembling internal or external expertise to conduct the work and deliver outcomes.

b) Designing scientific studies and methodologies, in consultation with AMPC.
c) Securing access to research facilities (laboratories, equipment, etc.) and the necessary approvals for the conduct of research & development.

d) Developing a comprehensive project plan which includes a detailed methodology and budget and describes the cash and in-kind contributions to the project, and subsequently delivering the research on budget and on time.

e) Disseminating key findings from the research to the wider scientific community in a variety of formats, subject to approval by AMPC.

f) Preparing progress reports against milestones that detail findings from individual experiments. The milestones are to be agreed with AMPC during the contracting phase of the project. Milestone delivery is a critical metric for AMPC.

g) Preparing a comprehensive final report (following approval of a draft by AMPC) detailing the project (methodology, data, analysis & conclusions).

h) Preparing communication materials such as scientific papers, conference presentations, information brochures, snapshots, processor talks and trade articles as approved by AMPC.

The following pages provide a summary of Request for Proposals (RFPs) associated with each of the above-mentioned programs. Each program is described in terms of its overall objective and the individual streams that constitute that program. Following that overview is a list of RFPs to which providers should respond in the form of a Preliminary Research Proposal (PRP).

The PRP Template is available at the links below:

To download the PRP form in MS Word, please [click here](#).

To download the PRP form in PDF, please [click here](#).

It is recommended that each potential provider contact the relevant AMPC Program Manager (PM) as detailed below for more information regarding individual PRP submissions and to obtain guidance on areas of focus and how to construct the most compelling PRP.

<table>
<thead>
<tr>
<th>AMPC Program</th>
<th>RFP Call</th>
<th>Manager</th>
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The program operates across seven program streams:

**Program Stream 1: Food Safety**

Food safety is a non-negotiable aspect of red meat production. This stream focuses on technologies and tools that ensure industry has an ability to validate, demonstrate, understand and manage responses to food safety issues. This stream includes technologies that improve current food safety systems and ensures that the Australian red meat processing industry is responsive to global food safety requirements.

**Program Stream 2: Animal Welfare**

Export markets and global consumers demand that the processing industry provide evidence of high standards of animal welfare. The Australian red meat processing industry needs to continue to ensure that the current high level of animal welfare standards are regularly reviewed, are widely disseminated and implemented. Reportable outcomes are required to maintain market access. This stream focuses on refining animal welfare measures and practices in livestock handling and slaughter, determining how these practices relate to meat quality and establishing performance measures that can be communicated to government and trading partners.

**Program Stream 3: Product Integrity in the Supply Chain**

This stream focuses on the development of an overall product integrity framework by which Australian red meat is produced, and includes traceability, management of biosecurity and disease threats, animal health and welfare measures and overall meat processing quality standards. The outcome of this stream is to enhance product integrity standards and quality assurance, and to maintain a world leading traceability system.

**Program Stream 4: Meat Sensing and Measurement Systems**

The ability to produce consistent high quality red meat requires mechanisms to monitor, evaluate and respond to products which do not meet specifications (pH, tenderness, colour, intramuscular fat, etc.). This stream focuses on the development and validation of new sensing and measurement technologies (especially online systems) and understanding their barriers to adoption. This stream will inform Technology and Processing Program Stream 2: Improved Carcase Measurement in developing an integrated carcase measurement technology that covers the measurement of composition (lean, fat and bone), structure (to inform automated cutting lines), meat quality measurements, cut product recognition and detection of contamination and disease.

**Program Stream 5: Meat Packaging Systems**

Global standards and regulations for fresh meat hygiene and safety are becoming more stringent whilst retailers are demanding more cost effective ways to extend shelf life and display products on the shelf in the most attractive manner. Improved and intelligent meat packaging is one approach to achieving that outcome. This stream will focus on the further optimisation of current packaging technologies e.g. vacuum packaging, overwrap and modified atmosphere packaging and develop new packaging solutions to enable functional and cost-effective options to be taken up by industry e.g. active packaging, intelligent packaging and labelling, novel films, and biodegradable packaging.

**Program Stream 6: Meat Quality Improvement**

Meat processors want to maximise value to customers and increase the demand for red meat and red meat products. This is best achieved by delivering high quality consistently to customers and consumers. Meat quality is dependent on a combination of functional characteristics such as tenderness, intramuscular fat, flavours etc. which all impact on the consumer’s perception of eating quality. This stream focuses on understanding all the key variables impacting meat quality and developing processing and sensing technologies that can further enhance quality and consistency.

**Program Stream 7: Meat Storage & Colour**

The requirements of retail display demands that meat products fit an acceptable colour profile and have a suitable shelf life. Research into factors which affect meat shelf life and colour include the effects of microbial populations, processing technologies and temperature (freezing and chilling). The focus of this stream is to provide guidelines and technologies that optimise colour stability and shelf life for different meat products and markets.
Request for Proposal #15-F01

Sensing Technologies for Food Safety Outcomes

AMPC is interested in non-invasive, non-destructive, on-line sensing technologies that will assist with monitoring and inspection of carcases for contamination as well as characteristics (such as bruising, etc) which can result in downgrading of carcases. Some technologies, such as hyperspectral spectroscopy imaging, has been shown to have applications in prediction of contamination (both micro and macro) and also measurement of meat quality (colour, marbling).

Research proposals should demonstrate the feasibility of industrialisation of the technology for detection of contamination and bruising on red meat. Technologies/units which have tested for measurement of carcase composition and value traits and can also be extended for use in detection and measurement of contamination are preferred.

Research proposals should:

- Address international research landscape;

- Address the possible sensitivity for different types of contamination on a carcase surface; and

- Evaluate and measure efficacy of the technology at line speed and processing conditions.

Request for Proposal #15-F02

Improved Food Safety Framework

The red meat processing industry has a wide ranging and high level of compliance, with food safety testing systems and regulations for different markets. As new risk management strategies are understood and adopted, these testing and reporting regimes need to be evaluated to ensure the industry is responsive to global food safety requirements.

AMPC requests proposals reviewing the food safety assessments (ESAM, Meat Hygiene Assessment, Product Hygiene Index, customer based BRC) and developing a feasibility study to streamline food safety audits based on evaluation of hygiene processes to reflect actual risks.

Request for Proposal #15-F03

Processing Interventions to Reduce Foodborne Microorganisms

Good food safety control requires not only implementation of food safety programs and practices but also effective decontamination technologies. Novel processing interventions has included organic acid washes, high pressure processing (HPP), pulsed electric field (PEF), ultraviolet light (UV) and atmospheric cold plasma (CP).

AMPC seeks proposals to further develop these or other novel technologies. Proposals should address utility under industrial conditions, current research landscape, and improving decontamination efficacy for different products.
Request for Proposal #15-F04

Animal Welfare

The Australian red meat processing industry is committed to achieving the highest level of animal welfare; this includes funding research to develop validated methodology to accurately monitor animal welfare, optimising humane stock handling, and continually improving the understanding around the impact of animal welfare on meat quality and product integrity. Having scientifically validated animal welfare standards enables the Australian processing industry to assure customers, regulators, industry and the general community that we are operating based on ‘best practice’ animal welfare standards and an animal welfare system that is continuously reviewed and optimised.

The AMIC/AMPC Animal Welfare Committee comprising representatives from State and Federal Governments, the scientific Animals Australia, as well as technical experts and Industry representatives developed the community, animal welfare organisations RSPCA and ‘Industry Animal Welfare Standards for Livestock processing Establishments Preparing Meat for Human Consumption’. This Committee is responsible for reviewing the Standards bi-annually to ensure they continue to be best practice. The results of the latest review (2014) are imminent, which may lead to the release of an updated document.

AMPC has funded and continues to fund work in the areas of stock handling in lairage, measurement of stress, and the effect of livestock management on meat quality and product integrity.

Recently completed RD&E activities which AMPC has contributed funding towards includes:

- CSIRO, Evaluation of stunning methods for Beef, 2008;
- University of Melbourne, Assessment of humane handling in the red meat industry and the development of attitudinal based training materials for the livestock processing industry: a professional livestock handling package, 2008;
- CSIRO, Literature review on the linkages between animal welfare and food safety, 2011;
- CSIRO, Identify and integrate measure of animal welfare that meet the needs of animals and society, 2013; and
- University of Melbourne, Development of a Public Attitude Monitoring Scheme, 2014.

Current RD&E activities which AMPC has contributed funding towards includes:

- CSIRO, Development of an alternative stunning method for cattle;
- University of Melbourne, Redevelopment of the ProHand animal welfare training package;
- University of Sydney, IR thermography and RFID for detection of stress in lairage;
- Murdoch University, The Influence of Pre-Slaughter Stress on Meat Quality and Carcase Yield of Prime Lambs;
- University of Melbourne, Relationships between fear of humans, temperament and handling pre-slaughter on lamb welfare and meat quality;

With this in mind, areas for future funding could include enhancing animal welfare outcomes through the investigation, development, refinement and/or implementation of animal welfare standards and their underpinning practices relating to the Australian red meat processing industry.

Proposals should seek to identify the specific animal welfare practice, issue, challenge or opportunity that will be addressed through research and provide details on the project methodology as well as the improvements anticipated for animal welfare.
Request for Proposal #15-F05

Optimising Modified Atmosphere Packaging (MAP)

Modified atmosphere packaging (MAP), especially the use of high O₂ MAP, is becoming more common for retail display. While there are many advantages of MAP in terms of increased shelf life and retail colour stability, reduction of organoleptic properties have been reported as well as changes in the colour of meat and fat and potential effects on tenderness.

AMPC seeks research proposals to optimise MAP and examine new options for MAP which can increase shelf life without impacting sensory aspects. Previous work include A.MFS.0198 Beef shelf life prediction model – MLA adaptation and extension modules.

Request for Proposal #15-F06

Literature Review on Effect of Diet on Lamb and Beef Meat Quality

There are conflicting results from studies on whether finishing diet of lamb and cattle can have measurable effect on the palatability, colour and flavour of meat. AMPC funded research (A.MQA.0007) showed that there was no evidence that brassica derived taints were present in lamb finished with experimental feeds. There are various feed options in beef production, ranging from grass, forage, different types of grains and supplemental feeds.

AMPC seeks a global scan and literature review on effects of different nutritional regimes on sensory properties of lamb and beef quality. The review should also cover aspects that are known to affect eating quality such as breed, sex and sire selection. A gap analysis of research in this area should be included.

Request for Proposal #15-F07

Re-Evaluation of Carcase Measurement Criteria

Cattle carcase assessment uses various tools, one of which is the use of AUS-MEAT butt shape/score as a yield sorting tool. The inconsistencies in the application of butt shape carcase measurement has highlighted the need to re-evaluate the use of butt shape to predict lean meat yield. While a review of butt shape assessment is required, this must be done in tandem with other traits, such as dentition for age, fat cover, etc.

AMPC seeks research proposals to evaluate carcase sorting methodology for yield and quality, and to consider more accurate methods or technologies.

Request for Proposal #15-F08

Impact of Extended Shelf-Life Chilled Beef into Overseas Markets

Current studies show that chilled, vacuum-packed beef can achieve a storage life of up to 30 weeks under stringent temperature control. However, arbitrary shelf life guidelines for specific markets are set much lower. For example, the Japanese Meat Traders Association has set a guideline for Australian beef at 77 days.

AMPC seeks research proposals into the impacts of long stored chilled vacuum packed beef, including microbiological data and organoleptic properties into overseas markets. Research providers will be required to undertake product shipping trials.
Request for Proposal #15-F09

Investigation into Organoleptic Properties of Vacuum Packed Chilled Beef

While it has been shown that long aged chilled vacuum packed beef is still acceptable in terms of microbial count, there is limited understanding of the differences between rate of microflora development in different products. There is also little correlation between microbial count in the vacuum packed chilled beef and negative organoleptic properties (off odours or flavours) that can develop in aged products even when microbial counts are not high.

Previous work done in this area include A.MFS.0166 Shelf life of chilled vacuum packed beef and A.MFS.0237 Vacuum-packed beef bacteria: extrinsic and intrinsic factors that determine microbial communities.

Proposals are sought to understand the cause of off flavours and odours in extended shelf life chilled beef.