



# final report

Project Code: A.MIN.0096  
Prepared by: Clive Richardson  
Date published: June 30 2011

PUBLISHED BY  
Meat and Livestock Australia Limited  
Locked Bag 991  
NORTH SYDNEY NSW 2059

## **MINTRAC Environment Network 2010-2011**

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government and contributions from the Australian Meat Processor Corporation to support the research and development detailed in this publication.

This publication is published by Meat & Livestock Australia Limited ABN 39 081 678 364 (MLA). Care is taken to ensure the accuracy of the information contained in this publication. However MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests. Reproduction in whole or in part of this publication is prohibited without prior written consent of MLA.

## Abstract

MINTRAC facilitated six Environment Managers' Network meetings during 2010-2011 attended by representatives of 25 different meat processing companies, four different regulatory bodies, four industry associations, research agencies, registered training organisations and other companies servicing the industry.

The agendas for these meetings covered a range of industry research and development outcomes, new regulations and their implications for the processing sector. In addition, a wide range of ongoing research and carbon policy changes impacting the meat industry were addressed through the networks.

In addition this year MINTRAC produced a CD which details environment management initiatives at meat processors from various States. The initiatives involve four different initiatives including covering waste water management, capturing methane, using bio-mass for boilers and recycling/recovering waste water.

The recommendations provided in Section 7 of this report focus on improving the adoption of industry research and development through the Environment Managers' network system, as well as improving the knowledge of managers to meet what are rapidly changing community and regulatory expectations of what constitute responsible behaviour on the part of meat processing establishments.

## Executive summary

The objectives of the project are to:

- enhance the ability of the industry to manage its environmental responsibilities
- increase the dialogue between industry and the regulators
- facilitate professional development activities to enable environment managers to expand their skills and knowledge bases
- ensure the timely and structured dissemination of R&D outcomes throughout the industry.

The MINTRAC Environment Networks provide a means of ensuring that R&D outcomes, innovation and new regulatory requirements can be disseminated effectively in the meat industry. Furthermore the networks provided a forum for practitioners to discuss with their peers and regulatory representatives the practical implications of changing environmental management requirements and the ways to effectively meet these demands.

Funding for this project in 2010-2011 funded six state-based network meetings and professional development exercises.

Attendees at network meetings included company environment managers, equipment providers and consultants to the industry, regulators from state EPA bodies as well as meat industry trainers, peak bodies, and research agencies such as MLA.

The six network meetings held during 2010-2011 discussed a range of industry R&D outcomes, new regulations and their implications for the processing sector, for example:

- the carbon tax and its impact on meat processing plants
- increasing electricity costs, causes and impacts
- energy efficiencies
- changes to compliance and enforcement policies
- water supplies into the future
- achieving water efficiencies
- cogeneration opportunities for meat processing plants.

The network hosted presentations from boiler and cogeneration experts as well as specialists in methane capture and usage.

Under the auspices of this project four selected environment innovation projects have been filmed and an information CD developed covering issues addressed by the innovation, the technology employed and the successful outcomes employed. The projects covered by the CD were:

- treating waste water from a meat processing plant to a potable water standard
- the use of a biomass boiler to greatly reduce hot water heating expenses
- the capture of methane from an anaerobic pond at a rendering facility for electrical generation
- an alternative approach to storing and treating waste water in an environmentally sensitive area.

The information CDs containing film footage, interviews, technical diagrams and flow charts have been distributed to all the environment network members.

## Contents

	Page
<b>1</b>	<b>Background ..... 6</b>
1.1	Network meetings ..... 6
1.2	Professional development program ..... 7
1.3	The Environment Initiatives DVD ..... 7
<b>2</b>	<b>Project objectives ..... 8</b>
<b>3</b>	<b>Methodology ..... 9</b>
3.1	Environment Managers' Network meetings ..... 9
3.2	Professional development program ..... 9
3.3	The Environment Initiative Presentation CD ..... 9
<b>4</b>	<b>Results and discussion ..... 10</b>
4.1	Environment managers' network meetings ..... 10
4.1.1	Key issues raised ..... 10
4.1.2	Industry R&D dissemination ..... 10
4.1.3	Network attendance statistics ..... 10
4.2	Professional development program ..... 11
4.3	The Environment Initiatives DVD ..... 11
<b>5</b>	<b>Success in achieving objectives ..... 12</b>
5.1	Enhance the ability of the industry to manage its environmental responsibilities ..... 12
5.2	Increase the dialogue between industry and the regulators ..... 12
5.3	Facilitate professional development activities to enable environment managers to expand their skills and knowledge base ..... 12
5.4	Ensure the timely and structured dissemination of R&D outcomes throughout the industry training programs ..... 13
<b>6</b>	<b>Impact on meat and livestock industry – Now and in five years time ..... 14</b>
6.1	The efficient transmission of the result of industry research and development to environment managers ..... 14
6.2	A community of practice for meat industry environment management practitioners. .... 14
6.3	Addressing industry strategic priorities ..... 14
6.4	Ensuring there are forums for environment managers to interact with researchers, regulators and industry organisations. .... 15
<b>7</b>	<b>Conclusions and recommendations ..... 16</b>

<b>7.1</b>	<b>Communicating industry research and development outcomes to meat industry environment managers .....</b>	<b>16</b>
7.1.1	Recommendation 1 .....	16
<b>7.2</b>	<b>Professional development of environment managers .....</b>	<b>16</b>
7.2.1	Recommendation 2 .....	16
<b>7.3</b>	<b>The ongoing maintenance of a community of practice for environment management practitioners in the red meat processing industry .....</b>	<b>17</b>
7.3.1	Recommendation 3 .....	17
<b>7.4</b>	<b>The nature of the demand for environment management training .....</b>	<b>17</b>
7.4.1	Recommendation 4 .....	17

## 1 Background

The Environment network consists of state based network of environment managers from industry, researchers, regulators and trainers. It gives environment managers, researchers, technology suppliers and regulators a very useful forum to explain, explore and discuss new issues and innovations. In a time when a wide range of new regulatory requirements associated with climate change is emerging, the network provides a means of disseminating the information and providing relevant professional development to meet the requirements and encouragement and support for the adoption of new technologies and practices. The network also provides a means of showcasing initiatives being undertaken by meat processing plants and related industries in areas such as cogeneration, water saving, waste water management, refrigeration efficiencies and composting.

The network is closely aligned with the National Environmental Committee and therefore seeks to consistently address the issues and priorities of that Committee.

MINTRAC management of this program 2010-2011 included:

- the organisation of six network meetings and site visits in five different States
- the filming of four current on-plant projects
- development of a DVD of the four projects showcased
- regular dissemination of MLA reports and products to industry personnel
- the organisation and provision of professional development workshops as required
- ensuring that new requirements and practices are incorporated into the nationally accredited qualifications

### 1.1 Network meetings

---

The two main functions of the network are to:

- organise a limited number of network meetings and professional development workshops facilitated by a technical consultant and delivered in selected regional centres
- develop communication channels between the various parties involved

During 2009-2010 a successful strategy to link Environment network meetings with site visits was developed and this has been continued in 2010-2011.

This year the site visits have continued to prove successful with visits made to the following sites:

- T&R at Lobethal
- Coopers in Adelaide
- AJ Bush at Rockdale
- Camelleri Stockfeeds in Sydney
- Churchill abattoir at Ipswich
- AJ Bush at Beaudesert
- Talloman in Perth
- Cargill Beef at Wagga NSW

A professional development exercise for environment managers in Victoria was held at Attwood in Melbourne and it dealt with the new compliance and enforcement policies of the Victorian EPA.

During 2010-2011 MINTRAC also developed the 'case study' approach to professional development further by filming a number of the plant-based projects and then featuring them on a CD to be distributed to the industry.

## **1.2 Professional development program**

---

The network also provides professional development sessions at the network meetings and this year specialists presented sessions on

- calculating bio gas yields from anaerobic waste water ponds
- maximising boiler efficiency
- new cogeneration plants
- electricity demand management.

## **1.3 The Environment Initiatives DVD**

---

Four selected environment innovation projects have been filmed and an information CD developed covering issues addressed by the innovation, the technology employed and the successful outcomes employed. The projects covered by the CD were:

- treating waste water from a meat processing plant to a potable water standard
- the use of a biomass boiler to greatly reduce hot water heating expenses
- the capture of methane from an anaerobic pond at a rendering facility for electrical generation
- an alternative approach to storing and treating waste water in an environmentally sensitive area.

The information CDs containing film footage, interviews, technical diagrams and flow charts have been distributed to all the environment network members.

## **2 Project objectives**

The objectives of the project were to:

- enhance the ability of the industry to manage its environmental responsibilities
- increase the dialogue between industry and the regulators
- facilitate professional development activities to enable environment managers to expand their skills and knowledge bases
- ensure the timely and structured dissemination of R&D outcomes throughout the industry.



## **3 Methodology**

### **3.1 Environment Managers' Network meetings**

---

Six Environment Managers' Network meetings were held during 2010-2011.

Agendas are set by consultation with meat processing companies, research organisations, AMIC, AMPC and State regulators who were directly invited to contribute agenda items for discussion. Additional speakers were invited as required.

Handouts from AMIC, MLA, Meat Industry Services, AMPC and CSIRO etc are collated into the meeting folders to ensure that any recent publications are appropriately disseminated.

### **3.2 Professional development program**

---

Professional development requirements are established through consultation with the processors and researchers in this area.

The network program is then advertised by:

- direct mail to the standard MINTRAC mail lists
- advertising on the MINTRAC website
- advertising through the *Mintracker* newsletter
- other means as appropriate to the specific program.

Frequently, follow-up telephone calls to plants are made in an effort to negotiate sufficient numbers to enable courses to be run.

### **3.3 The Environment Initiative Presentation CD**

---

Four environmental management initiatives were documented and filmed in a CD for distribution to the meat processing industry. The CD developed covered issues addressed by the innovation, the technology employed and the successful outcomes employed. The projects covered by the CD were:

- treating waste water from a meat processing plant to a potable water standard
- the use of a biomass boiler to greatly reduce hot water heating expenses
- the capture of methane from an anaerobic pond at a rendering facility for electrical generation
- an alternative approach to storing and treating waste water in an environmentally sensitive area.

The information CDs containing film footage, interviews, technical diagrams and flow charts have been distributed to all the environment network members.

## 4 Results and discussion

### 4.1 Environment managers' network meetings

---

Six environment managers' network meetings were held during 2010-2011, as shown in the table below.

State	Location	Date
South Australia	Adelaide	23 November 2010
New South Wales	Sydney	30 November 2010
Queensland	Brisbane	7 December 2010
Western Australia	Perth	9 March 2011
New South Wales	Wagga Wagga	23 May 2011
Victoria	Melbourne	24 May 2011

#### 4.1.1 Key issues raised

Key issues raised through the network meetings were as follows.

- Electricity demand management
- Waste water management
- Methane capture and utilisation
- Cogeneration
- Bio fuels
- EPA enforcement policies.

#### 4.1.2 Industry R&D dissemination

The six network meetings held during 2010-2011 discussed a range of industry environmental R&D outcomes including those emanating from

- ENV102 - Cogeneration
- ENV103 Part 1 & 2 – results from Federal and State (NSW, Vic) energy efficiency programs
- ENV104 – Electricity prices
- Energy Efficiency Manual (2009)
- Environmental Best Practice (2007)
- Eco-Efficiency Manual (2002)

#### 4.1.3 Network attendance statistics

Over the 2010-2011 year 56 individual attendances were recorded at Environment Managers' Network meetings. The breakdown of network participation is provided below:

	Plants attended	Regulatory Organisations	Industry Bodies	Other
Network meetings	25	4	4	6

## **4.2 Professional development program**

---

Professional development workshops were conducted for environment managers' network meetings in the following topics:

- calculating bio gas yields from anaerobic waste water ponds
- maximising boiler efficiency
- new cogeneration plants
- electricity demand management.

## **4.3 The Environment Initiatives DVD**

---

Four environmental management initiatives were documented and filmed for an information CD on environmental initiatives undertaken around Australia. The CD was prepped for distribution to the meat processing industry, RTOs, industry organisations and researchers. The CD developed addressed the nature of the innovation, the technology employed and the outcomes for the processor. The projects covered by the CD were:

- treating waste water from a meat processing plant to a potable water standard
- the use of a biomass boiler to greatly reduce hot water heating expenses
- the capture of methane from an anaerobic pond at a rendering facility for electrical generation
- an alternative approach to storing and treating waste water in an environmentally sensitive area.

The information CDs containing film footage, interviews, technical diagrams and flow charts have been distributed to all the environment network members.

## **5 Success in achieving objectives**

### **5.1 Enhance the ability of the industry to manage its environmental responsibilities**

---

The network enhanced the ability of industry to manage its environmental responsibilities by providing

- professional development workshops that look at proven technology/methodology for controlling energy/water inputs or waste outputs that included biomass fuels, cogeneration plants, methane capture and utilisation in boilers and cogeneration plants
- site visits on which network members get an opportunity to view environmental initiatives at meat processing plants to physically see the technology such as the gas fired electricity generators at Beaudesert and have in-depth conversations with those who have designed and operated the plant
- an opportunity to network with peers and share experiences of dealing with environmental issues such as discussing with the EPA what constitutes good practice.
- a forum for discussing environmental issues with regulators and to expose regulators to the technology and practices utilised by the industry
- a way of disseminating research outcomes which enable industry personnel to interact with researchers and for industry personnel to get the most out of R&D.(for example Tracey Colley has presented the outcomes of three AMPC funded research proposals at each of the network meetings).

### **5.2 Increase the dialogue between industry and the regulators**

---

The networks allow regulators to interact with industry personnel outside the normal audit/complaint investigation setting. It allows the regulators a chance to get an insight into the practicalities of industry as well as what constitutes good practice for our industry.

At four of the network meetings State Government officials discussed new regulation or policy changes that would impact on meat processors. This gave the processor representatives an opportunity to explore what was actually involved in the changes and ask the myriad of “what if” questions that accompany any change.

The regulators also have an opportunity to discuss issues in an informal setting and to explore possible solutions outside a formal interaction with processors. Additionally the network meetings allow regulators to brief industry on the implications of changes in policies, regulations and charges.

### **5.3 Facilitate professional development activities to enable environment managers to expand their skills and knowledge base**

---

The professional development sessions at network meetings gave industry access to experts in the following technical areas

- boiler tuning
- energy management

- small steam turbines for cogeneration
- bio-mass fuels
- methane gas capture and utilisation.

In many cases environment managers do not have formal training in environmental management so the PD sessions give them an opportunity to expand their knowledge and understanding of the options available to plants when managing environmental issues.

#### **5.4 Ensure the timely and structured dissemination of R&D outcomes throughout the industry training programs**

---

The networks have assisted in transmitting R&D outcomes directly to environment managers through broadcasting papers to environment managers on MINTRAC's data base and via the network meetings. It also has enabled the industry's training package and training materials to be updated to incorporate all the latest R&D and thus give the outcomes of the R&D a life beyond the initial release and distribution of papers.

MINTRAC is currently developing an environmental officer's skills set for national accreditation which will be used to recognise the specific skills required to manage environmental issues at a meat processing plant and to attract State funding for such training.

## **6 Impact on meat and livestock industry – Now and in five years time**

### **6.1 The efficient transmission of the result of industry research and development to environment managers**

---

The presence of the networks ensures that the meat industry training system remains current and responsive to meat industry priorities and current research findings. This is achieved through:

- rapid dissemination of research outcomes and incorporation into the national training system
- meeting formats which ensure that all attendees are receiving consistent messages from the regulator, the industry organisations and researchers
- regular provision of professional development to ensure currency of the environment manager's skills and knowledge
- opportunities for RTO staff to be exposed to the latest in environmental management and regulatory developments.

### **6.2 A community of practice for meat industry environment management practitioners.**

---

Meat industry environment managers in regional and rural areas work in relative isolation to fellow practitioners either in this industry or even other food processing operations. The Environment Manager Networks continue to provide an opportunity for environment managers to interact and network with those working in their State and derive all the benefits that come from having access to the experience and expertise of others.

Likewise researchers and regulators are able to discuss the issues involved in achieving compliance with licence and regulatory requirements in an environment which encourages a collaborative approach to problem solving.

The networks are also instrumental in raising the level of discussion between industry regulators and researchers by promoting a shared understanding of environment issues, what constitute best practice and the required outcomes to fulfilling regulatory requirements.

The development of a community of practice for the meat industry's environment managers is also important in terms of identifying and consolidating industry demand for technician and operator training to meet industry and customer requirements.

### **6.3 Addressing industry strategic priorities**

---

As the *Meat Industry Strategic Plan* is rolled out, the Networks provide the vehicle to ensure that the training implications of new and emerging strategies are rapidly identified. Examples of how this is achieved include

- a wide range of strategies which have been discussed and debated to address industry priorities to reduce water and electricity consumption
- methane capture and utilisation is an identified priority for the industry and the networks have visited six sites to date to discuss with companies their experience with gas generation rates, pond covers, crust and sludge removal and methane utilisation
- cogeneration is also another identified priority for research and visits to three cogeneration plants gave network members a good understanding of how the technologies are being utilised to reduce energy costs

- biomass fuels are also attracting attention from the industry and the site visit at Wingham last year has been followed up by presentations on bio mass fuels in the other States addressing the training requirements needed to make operators more conscious of environment issues on plant including such things as foreign language resources.

#### **6.4 Ensuring there are forums for environment managers to interact with researchers, regulators and industry organisations.**

---

State EPAs and Departments of Environment and Climate Change to have used the networks as a reliable method of communication with the meat processing sector. It provides their officers with an opportunity to explain changes in the regulatory system and areas of operations where there needs to be either changes or improvement to meet regulatory requirements. The State agencies find the format of the meetings gives them more opportunity to explain in detail the practical implications of changes and get feedback on implementation issues. State authorities have used the network meetings to explain programs such as the EREP program in Victoria and the ESAP program in NSW.

The Commonwealth Department of Climate Change also uses the networks as part of their national communication strategy for CPRS and MINTRAC will continue to engage with the Department as the policy evolves and is implemented.

Industry organisations likewise are using the meetings as a way to get their message across to those industry personnel most likely to be charged with managing environmental matters. AMPC and MLA use the networks to sound out areas of industry RD&E needs when it comes to managing water and energy inputs as well as waste outputs.

AMPC representatives have presented the outcomes of the deliberations of the AMPC Environment Committee and the priorities that have been set for the upcoming research programs. These priorities then provide the major drivers for the environment networks agenda.

The Australian Meat Industry Council (AMIC) has utilised the network meetings to inform industry as to how the CPRS and Carbon Tax will impact on the meat processing industry. AMIC has also used the meetings to explain what representations the industry has made to government to minimise the impact of any carbon policy.

Researchers also use the network meetings for discussing potential research programs, provisional research outcomes and completed research outcomes and this enables them to evaluate the implications of their research programs for meat processing companies.

## **7 Conclusions and recommendations**

### **7.1 Communicating industry research and development outcomes to meat industry environment managers**

---

The need for environment managers to be current with regulatory, research and developments in technology has never been more acute. Environment managers are required to be more technically proficient and competent than ever before and the requirement to defend a company's environmental management systems to auditors and regulators has never been more important.

The networks give MLA, AMPC and other research bodies a systematic and effective way of rolling out research and development outcomes to environment managers, regulators and training organisations. It ensures that they get meaningful feed back from a cross section of industry previously inaccessible to them without significant effort, time and cooperation from industry.

#### **7.1.1 Recommendation 1:**

It is recommended that MINTRAC continue to have research outcomes as Agenda items for discussion at Environment Managers Network meetings and ensure it offers research organisations support in disseminating research outcomes and where necessary support change being implemented by the facilitating of relevant training programs.

In addition, where appropriate MINTRAC should run topic specific workshops in support of research outcomes as part of a comprehensive extension program. MINTRAC should also be tasked with developing and implementing documented strategies for ensuring research and development outcomes are embedded in the industry's training materials, programs and trainer professional development activities where appropriate.

### **7.2 Professional development of environment managers**

---

The need for certification of skills and currency of knowledge is as pressing now as ever and the Environment Managers' Networks enable MINTRAC to identify these needs and respond by

- facilitating professional development courses and workshops
- lobbying for state funded qualification courses for staff working in the environment management departments
- lobbying for state funded qualification courses for operators where such training underpins market access eg waste water courses

#### **7.2.1 Recommendation 2**

It is recommended that MINTRAC should continue to facilitate professional development courses and workshops. The latter should be done by offering a range of targeted PD programs for levy payers and publicising other publicly available programs such as those run by RTOs.



### **7.3 The ongoing maintenance of a community of practice for environment management practitioners in the red meat processing industry**

---

The implementation of the carbon tax in Australia now more than ever requires a very collaborative relationship between processors and researchers in order to protect not only the financial viability of a meat processing works but also product image.

This cooperation is largely dependent on a shared level of understanding of the issues and solutions. This can only happen if processing staff have appropriate levels of training and professional development.

Likewise research and development outcomes can only be meaningfully exploited by industry and regulators if there is a comprehensive extension plan to accompany them. This should include not only a one off dissemination but also an ongoing incorporation of research outcomes into personnel training materials and refresher training courses.

#### 7.3.1 Recommendation 3

MINTRAC should continue to work with research agencies to develop effective extension programs accompanying the roll out of research and development projects.

### **7.4 The nature of the demand for environment management training**

---

Traditionally training programs for environment management staff have involved face to face delivery. These programs involved 8 or more meat industry personnel gathered in one place to receive accredited training.

However, it is increasingly apparent that in the future strategies will need to be developed to train staff in aspects of environment management that will not be able to be economically delivered face to face and this will require changed training strategies. Because of the “thin market “ issues and barriers to inter-state funding of course participants this will be an area of ongoing frustration for industry and difficult for RTOs to service industry demand.

#### 7.4.1 Recommendation 4

It is recommended that MINTRAC continue to facilitate the development and delivery of e-learning solutions to this problem.