

15 January 2024
Department of Agriculture, Fisheries and Forestry
GPO Box 858,
Canberra 2601, Australia



Via email: climate.consultation@aff.gov.au

Dear Sir/Madam,

RE: Discussion Paper – Agriculture, Land and Emissions Plan

Sheep Producers Australia welcomes the opportunity to offer feedback on the Australian Government's Agriculture, Land and Emissions Discussion Paper through this submission, to assist with the design of The Agriculture and Land Sector Plan.

Sheep Producers Australia is the collective national voice on issues that affect Australian sheep production, representing the interests of close to 20,000 sheep farming businesses. Our purpose is to provide strategic leadership for Australia's sheep industry, supporting a productive, profitable and sustainable future.

It is important to recognise the great diversity of the industry – operating from arid and wet temperate to subtropical climates, and on a very large to very small scale. This means that it is difficult to envisage arrangements that could be implemented for all or even most producers regardless of how well intentioned and designed those arrangements might be.

The Australian sheep industry is committed to positive environmental outcomes, including reducing greenhouse gas emissions. In meeting this goal, our industry recognises the need for a collaborative and coordinated approach with government, our broader supply chain and customers. We view this initial consultation to support development of the Agriculture and Land Sector Plan as the start of a crucial conversation and joint effort to find effective solutions to an issue that will affect all Australians.

Addressing critical issues like realistic commercial operating necessities, defining achievable targets, implementing effective tools, refining measurement methodologies, investing in research and development, promoting widespread adoption, and securing sustainable funding requires a collaborative effort and formal mechanism between industry stakeholders and the government. This partnership is essential for devising and implementing strategies that will not only meet climate goals but also contribute to the overall success and sustainability of our collective initiatives.

The Agriculture and Land Sector Plan should define the framework and process for government to work through these crucial issues with industry and ultimately seek to provide long-term policy clarity, a coherent incentives package and strategy that encompasses both emissions and offsets. This will give producers confidence to plan and invest as well as focus and hone the research agenda and investment priorities. This must include consistent standards for calculating emissions baselines and future options consistently, and developing practical tools that could be used by producers.

☎ +61 2 6103 0838 ✉ admin@sheepproducers.com.au
PO Box 4225 Manuka ACT 2603

sheepproducers.com.au

ABN 21 256 252 885



Should you wish to discuss this submission further please do not hesitate to contact me at ceo@sheepproducers.com.au.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Bonnie Skinner', with a stylized, cursive script.

Bonnie Skinner
CEO
Sheep Producers Australia

Introduction

The Australian sheep industry is an integral part of Australian agriculture. Australian sheep producers contribute not only to the provision of high quality and nutritious protein for both domestic and international markets, but provide substantial employment opportunities and investments that bolster rural and regional communities. Beyond these essential contributions, sheep producers play a pivotal role in environmental stewardship across extensive areas of our country, a responsibility they approach earnestly, as their farms often serve as homes for themselves and their families.

This commitment to environmental responsibility is demonstrated by our industry's dedicated efforts toward emissions reduction and abatement. Analysis suggests that the sheep industry will likely achieve the government's 43% emission reduction target by 2030, largely due to improved flock productivity, improved land management and historical declines in sheep numbers. Our industry has and will persist in substantial investments for research and development aimed at reducing greenhouse gases (GHGs).

Despite the commitment to addressing these challenges, significant hurdles exist in aligning with ambitious targets set by both government¹ and industry² alike. Perhaps the most critical concern for the sheep industry, and broader livestock industry, is methane which accounts for 80% of GHG emissions produced by the livestock sector. Critically, there is currently no singular solution to reduce methane emissions, particularly in the extensive grazing production systems predominantly employed by the sheep industry. Achieving further emissions reductions beyond 2030 will not be possible without technological breakthroughs, reduced barriers to implementation and cost.

Realistic targets play a pivotal role informing future policies, regulations, investment schedules, research and development programs, and incentive initiatives. Advocating for reductions in biogenic methane beyond what can be achieved through new technologies and farm management practices poses a risk to both the Australian sheep industry and global food production. Setting fair and scientifically sound targets that facilitate emissions reduction without excessively escalating production costs is essential for both our industry and broader food production. Due to the short-lived nature of methane, there is a strong scientific case indicating that methane levels do not need to reach 'net zero' to achieve Paris Agreement temperature targets. The IPCC 6th Assessment Report (AR6) confirmed: "*Limiting human-induced global warming to a specific level requires limiting cumulative CO₂ emissions, reaching at least net zero CO₂ emissions, along with strong reductions in other greenhouse gas emissions*"³. New Zealand has also adopted a different approach to the "bundled gas" approach to target setting, establishing "split gas" targets of 2050 emission reduction targets of net zero for greenhouse gas emissions with the exception of biogenic methane, which is set at a 24-47% reduction target. Current estimations suggest that net zero (bundled gas, current Government policy) could cost in the order of \$681-774 million annually and would be an ongoing cost to business. Maintaining a "climate neutral" position for industry is still expected to cost in the order of \$425M annually. The monumental challenge that we currently face requires substantial effort and investment to find solutions that will safeguard not only our industry, but also the Australian way of life.

The Agriculture and Land Plan (the Plan), a pivotal component of the Net Zero 2050 Plan, is a critical step forward in providing a strategic approach to assisting and supporting the Australian Agriculture

¹ [Australia Legislates Emissions Reduction Targets | Prime Minister of Australia \(pm.gov.au\)](https://www.pm.gov.au/news/press-releases/2022/09/01/australia-legislates-emissions-reduction-targets), [Australia joins Global Methane Pledge | Ministers \(dcccew.gov.au\)](https://www.dcccew.gov.au/global-methane-pledge)

² [Carbon neutral 2030 R&D | Meat & Livestock Australia \(mla.com.au\)](https://www.mla.com.au/carbon-neutral-2030-rd)

³ [Sixth Assessment Report — IPCC](https://www.ipcc.ch/report/ar6/)

sector to reduce emissions in increasingly short timeframes. Crucial to the Plan's longevity and effectiveness is the establishment of formal industry-government consultation processes, sustainable funding mechanisms and an agreed implementation plan. Success also relies on aligning and leveraging all six plans under the Net Zero 2025 initiative.

Getting the Plan right is imperative not only for a profitable, productive, and resilient sheep industry but also for fostering strong regional and rural communities while safeguarding the environment. Realising this outcome demands a collaborative, coordinated, and cooperative approach across industry, all levels and sectors of government, and commercial entities operating across the supply chain. Sheep Producers Australia welcomes the opportunity to take part in this important process now, and into the future.

Recognising the substantial knowledge and solutions gap from producers through to policy makers, Sheep Producers Australia has outlined a set of principles and proposed processes to guide industry and government in its planning approach. The principles below initiate a discussion on agriculture's role in emissions reduction.

About the Australian Sheep Industry

The Australian sheepmeat industry has a proud history of delivering safe and dependable sheepmeat to both domestic and international markets. The industry's commitment to quality and excellence has resulted in high global demand for Australian sheepmeat products. In 2019, the total off-farm meat value, which encompasses domestic expenditure and exports, including live export, reached around \$7.2 billion⁴, a remarkable 24% growth compared to the previous year.

As the world's largest sheepmeat exporter, the industry achieved record exports in 2021-2022 of \$4.5 billion⁵, a trend expected to continue given growing customer demand and increased preference for high-value lamb products⁶. With a strong focus on maintaining and expanding this leading position, the industry aims to deliver benefits not only to Australian producers, but contribute to global food security by supplying a range of high-quality sheepmeat products to a diverse range of customers worldwide.

The Australian sheep industry is also an essential component of the regional landscape in Australia. In agricultural-dependent rural and regional communities, the industry provides direct economic benefit, including employment opportunities and investment. Over the last five years, the Australian sheep industry (including sheep farming (meat and wool), feedlots, abattoirs, live exports (meat and wool) and interstate trade) has on average, directly contributed \$3,744.05 million of value added annually and employed 12,110 full time equivalents (FTEs)⁷. Additionally, the industry delivers significant social benefits, fostering vibrant communities and contributing to equitable development that delivers enhanced livelihoods, economic stability and strengthened social fabric within the regions.

In recent years, the national flock has experienced a period of rebuilding and was estimated to be 70.2 million head as of June 30, 2022, reflecting a 3% increase compared to the previous year⁸.

⁴ [Meat & Livestock Australia, Fast Facts 2020: Australia's sheepmeat industry](#)

⁵ [Department of Agriculture, Fisheries and Forestry, Australian sheepmeat export snapshot February 2023](#)

⁶ [AUSTRADE, Insights – Australian exporters to benefit from growing global appetite for sheepmeat, November 2022](#)

⁷ Acil Allen, Performance and value of the live sheep export trade, June 2023

⁸ [Australian Bureau of Statistics, Agricultural Commodities, Australia: 2021-22 financial year](#)

Looking ahead, ABARES forecast sheep numbers will remain relatively stable, subject to seasonal conditions, until 2028⁹.

While the industry is currently experiencing a resurgence, producers have endured uncertainty and hardship over previous decades and again throughout 2023. The national flock experienced significant contraction from the 1990s onwards as a result of structural reforms and drought. In 2020, the national flock was forecast to reach a record low of 63 million head, the lowest level in a century and over 100 million head less than the 1970s peak of approximately 170 million head. While this trend has largely stabilised, farming practices have undoubtedly shifted away from wool production and the merino ewe, towards dual purpose ewes for sheepmeat production. Additionally, there has been a growing emphasis on mixed enterprises where sheep production of all types is integrated, and both compliments and competes with, cropping activities¹⁰.

During 2023, sheep producers saw a sharp decline in sheep and lamb prices, which resulted in indicators dropping by 40-70% from early 2023 through to October with prices increasing through the later part of 2023¹¹. Coupled with current government policy to phase out live exports by sea, and ongoing weather variability, these experiences highlight the volatility faced by the industry and the need to maintain sufficient economic reserves during extended periods of depressed prices and low production. This factor must be taken into account when considering costs associated with emission reductions on farm as the cost of decarbonisation will be significant.

⁹ [Sheep meat - DAFF \(agriculture.gov.au\)](https://agriculture.gov.au)

¹⁰ [Mecardo, Analysis of Domestic Fundamentals Influencing the National Sheep Flock, August 2020](#)

¹¹ [Sheep and lamb market 2023: the year in review | Meat & Livestock Australia \(mla.com.au\)](#)

Summary of Principles

Sheep Producers Australia considers the input in this initial consultation as a starting point for discussion and solution development. Recognising a substantial knowledge and solutions gap from producers through to policy makers, the Principles below initiate a discussion on agriculture's role in emissions reduction. They will evolve with scientific, policy, and community developments.

Principle 1: A formalised consultation mechanism be established between industry and government to co-design a clearly defined, efficient and least cost pathway for the sector which will allow producers to practically adjust their farming systems within realistic timeframes and minimise the risk of disrupting vulnerable rural communities.

Principle 2: The Australian sheep industry is an important part of Australia's rural economies and is comprised of highly diverse production systems and scales of production that necessitates rigorous ground truthing of policy design and efficacy to safeguard the industry, rural economies and communities.

Principle 3: Adjusting sheep production businesses to reduce emissions will be difficult without substantial investment to support producers with a suite of education, tools and access to consistent methodologies that allow them to determine their emissions profile and meet reporting requirements for carbon incentive programs easily and consistently. Government must play a role in providing confidence to this growing market through an accessible verification or quality assurance process.

Principle 4: A common approach for GHG accounting across agricultural sectors is essential to enhance consistency, transparency and confidence in sector-level GHG reporting.

Principle 5: To align with the Paris Agreement, methane emissions do not need to be reduced to zero, therefore future emission reduction targets related to the sheep industry need to reflect a different emission reduction pathway, and a non-zero methane end-point at 2050.

Principle 6: Emissions reduction from enteric methane in the sheep industry will not be achieved without technological breakthroughs and significantly increased investment, however this requires realistic timeframes for development, commercialisation and adoption.

Principle 7: Additionally, producers require suitable incentives to support emission reductions practices while maintaining business sustainability, currently there are limited incentives available to producers, which are often complex, poorly understood and potentially unviable.

Principle 8: Agriculture requires a suite of ACCU scheme methods that better manage landholder requirements to increase carbon removals while maintaining productive grazing enterprises. Clarification of the business carbon liabilities is essential to ensure sheep producers do not sell carbon assets they may require in the future for market access, or access to finance.

Feedback – Design of the Agriculture and Land Sector Plan

The following feedback will answer the Survey questions with corresponding background where appropriate.

The need for higher ambition

1. What are the opportunities to reduce emissions and build carbon stores in agriculture and the land? What are the main barriers to action?

The critical opportunities and barriers for Australian sheep producers to reduce emissions and build carbon stores on farm are as follows:

Major enablers/opportunities:

1. Price signals, financial incentives
2. Productivity improvements
3. Other co-benefits
4. Market access or premiums

Major Barriers:

1. Cost of the mitigation and compliance
2. Difficulty in adapting farming practices to implement it
3. Uncertainty and complexity
4. Potential long-term implications for land management
5. Slow rate of adoption in the livestock sectors, high exposure to short- and long-term climate variability and market instability, and ongoing impact of labour shortages

2. How can we progress emission reduction efforts whilst also building resilience and adapting to climate change?

The main source of resilience is a strong commercial performance which funds investment and confidence and acceptance of change – this is very much at odds with the anticipated costs of emissions reductions at present. Therefore, the focus for policy success must be on changes that are implemented with commercial operating realities as the starting point and ongoing frame of reference. Government and industry will need a strong process to do this.

Build on existing effort and knowledge

3. Are there initiatives or innovative programs underway that could be applied or expanded on at a national scale?

Carbon Neutral 2030 (CN2030)

The red meat industry has been proactive in setting an aspirational target of carbon neutrality by 2030 for red meat. Meat & Livestock Australia (MLA), the red meat Research and Development Corporation (RDC), is investing \$120 million in R&D and adoption across four key work areas:

1. [Greenhouse gas emissions avoidance](#)
2. [Carbon storage on farm](#)
3. [Integrated management systems](#)
4. [Leadership and capability building](#)

MLA's investment into CN30 research, development (R&D) and adoption aims to enable and empower the red meat industry to achieve the target, reduce operating emissions while maintaining productivity gains. While there is some evidence that this outcome is not achievable it has focussed attention in a very useful way on what needs to be done. The CN30 target also sends a clear signal to government, global markets and consumers that the livestock industry is proactively addressing emissions and taking action to improve long-term productivity. By taking action, the red meat industry pre-empts current and future market expectations regarding environmental credentials which will allow red meat producers to stamp their mark in a competitive global protein market.

Between 2005 and 2023, the sheep industry reduced emissions by 27%, principally because of improved flock productivity, changes in flock structure and declines in sheep numbers. However, sheep numbers are projected to increase between 2020 to 2030, which may increase emissions by as much as 16% from 2020 levels without other mitigations. Over the longer term (2030 to 2050), sheep numbers are expected to remain stable. The fluctuation in sheep numbers over time requires careful consideration with respect to mapping pathways for greenhouse gas (GHG) emissions. Further reductions will face significant challenges (described above) and will require new technologies, processes and programs to deliver meaningful outcomes.

MLA has developed the [National Livestock Methane Program \(NLMP\)](#), which aims to provide Australian livestock producers with practical strategies and tools to help them increase productivity and profitability while lowering methane emissions. The Program focuses on research into methane reduction initiatives, including measurement of methane, genetics, supplements, forages, and rumen microbiology. The research provided the scientific basis for developing methodologies under the Carbon Farming Initiative and the Emissions Reduction Fund. NLMP II is currently being developed, which will build on outcomes of the NLMP and *Reducing Emissions from Livestock Research Program* (RELRP) but will be focused on commercialisation and adoption.

Genetics

- MLA is currently investing in two genetics research projects specific to the sheep industry via the Emissions Avoidance Partnership (EAP).
 - *Selecting for Methane Efficient Sheep* aims to develop an optimal selection index that allows a balanced genetic improvement of Australian sheep to cumulatively and permanently reduce methane emissions by about 1% per year while at the same time improving or maintaining production efficiency and product quality.
 - *Adding Sustainable Traits to the MLA Resource Flock (Phase One)* aims to leverage the MLA Resource sheep flock to provide the datasets to establish Australian Sheep Breeding Values (ASBVs) for feed use efficiency, methane and potential body composition, as well as linking to productivity and eating quality traits to establish genetic correlation.
- AWI is funding the *Genetic Evaluation of Productivity, Efficiency and Profitability* (GEPEP) study in partnership with Murdoch University, which aims to determine if it's possible to improve current estimates of profitability per hectare by assessing feed intake and total body energy reserves (proxies for feed efficiency), rather than the current use of metabolic body weight (DSE rating). The project will evaluate the productivity of Merino sheep and their ability to pass those traits on to their progeny through their 'Breeding Value', but it is largely based on a per-head basis.

Anti-methanogenic feed additive supplements/forages

- Research is being conducted by the Sheep Methane Program – with funding from the Federal Government Methane Emission Reduction in Livestock (MERiL) grants, with two AWI co-funded projects: *ON-779* and *ON-608*. Details of each project are as follows:
 - Project *ON-779* aims to quantify the relationship between the intake of Asparagopsis supplement and methane mitigation for grazing sheep, as influenced by factors including pasture quality, form and frequency of delivery. The next stage of this project is to investigate three different additives in sheep grazing: Asparagopsis, Bovaer, and Agolin.
 - Project *ON-608* is yet to commence and will use RFID to estimate supplement intake and calculate abatement potential. It will also assess an in-paddock delivery system based on a system developed for pigs.
- Other research projects are being conducted via EAP relevant to the sheep industry, including research into anti-methanogenic feed additives/supplements and forages
- If feed additives can deliver the expected emissions reductions, the critical issue will be the costs and mechanisms associated with their use. This is particularly difficult for the sheep industry where there is little intensive production and limited opportunities for the administration of additives.

Soil carbon

- Soil carbon is a key area of opportunity for agriculture, however it is not easy to increase or measure – high cost of measurement (e.g. \$20/ha) & requirements for large scale in-field soil testing. Moreover, much of Australia’s sheep production occurs on low productivity and carbon landscapes. Lack of readily available modelling is a critical barrier.
- The ACCU scheme will need to approve any new soil carbon methodology or adjust the current soil carbon sequestration methodology to allow the use of this tool in soil carbon change when conducting soil carbon projects.

Abatement

- MLA is currently investing in research projects via the [Carbon Storage Partnership \(CSP\)](#) relevant to the sheep industry, including improving technology and decision-making tools for sequestering carbon in soils and trees. A decision-making database tool has been developed to help producers make more informed decisions when considering planting trees on farms and the co-benefits it could provide. This database will be updated as further research is done.
- A range of carbon storage methods under the ACCU scheme can be used by sheep grazing operations. To date, the largest of these in terms of total abatement has been Human Induced Regeneration (HIR) which is effectively a method that enables carbon credits to be generated by allowing native vegetation to regrow where forest cover was historically suppressed. Due to concerns over integrity, government will sunset this method on 30 September 2023.
- There are several future prospects of importance to the sheep industry. Firstly, the Government is currently developing what is known as the [Integrated Farm Management Method \(IFM\)](#). This method will allow proponents to conduct a regeneration method (similar to the previous HIR method), a tree planting method and a soil carbon method as part of one project. The major innovation is to allow “stacking” of a tree project and soil project on the same land. Tree planting is well known to increase soil carbon levels, but before now, the soil carbon could not be included in the abatement and couldn’t generate carbon credits because methods could not be run on the same area of land. This method is in draft stage, and will be an important shift for producers by

increasing carbon yields and reducing some compliance costs (for example, reducing costs for audits and reporting).

4. How can the Australian Government bring together existing effort and new initiatives into one coordinated plan?

A coordinated national platform

- Develop and implement a coordinated platform that incorporates government at all levels across relevant portfolios, industry representatives, researchers and other relevant stakeholders to support greater progress on a range of climate and carbon issues, including research and development, policy and regulation, accounting and incentives programs, extension, adoption and communication.
- The platform should support greater harmonisation across state, territory and federal government regulations, and research, development and investment programs.
- The platform should also communicate at an international level to leverage opportunities identified across other countries.
- To ensure it is effective, the platform identified above will require the following:
 - a dedicated and appropriately resourced secretariat, preferably maintained within the Department of Agriculture, Fisheries and Forestry (DAFF)
 - clear requirements for monitoring, evaluation, and public reporting, underpinned by Key Performance Indicators (KPIs)
 - annual review cycle overseen by a Steering Committee that comprises of representatives of the stakeholders
 - direction to respond to seminal scientific reviews and their relevant recommendations

Implementation of the Agricultural and Land Plan

The final Agricultural and Land Plan must provide detail on an implementation strategy that supports monitoring, evaluation, and public reporting, underpinned by KPIs. The Plan must be monitored using an annual review cycle overseen by the coordinated platform identified above.

Opportunities to reduce emissions

- 5. What are the most important options to be further adopted or supported, looking in the short and the longer-term?**

Developing emissions pathways

- 6. How do you see the agriculture and land sectors contributing over the medium and longer-term? What are the opportunities to deliver emission reductions in parallel with wider goals?**
- 7. How can the Australian Government better support agriculture and land sectors to:**
 - a) drive innovation**
 - b) build capacity**
 - c) ensure the system enables emissions reductions?**
- 8. What new initiatives could the Australian Government design that would support emissions reduction and carbon storage in agriculture and land and help ensure a productive, profitable, resilient and sustainable future for the sectors?**

This submission will consider all these questions in the section below.

One of the major priorities at this stage is the clarification of long-term policy objectives. This will inform a coherent incentives package and strategy that encompasses both emissions and offsets and

will give producers confidence to plan and invest as well as focus and hone the research agenda and investment priorities.

Coordinated, collaborative and cooperative approach

Refer “*How can the Australian Government bring together existing effort and new initiatives into one coordinated plan?*”, above.

Research and development

- Urgent additional sustainable funding is needed for strategic and coordinated agricultural research and development to address the complexity and scale of the emissions challenge, requiring incorporation of extension and adoption.
- The Australian sheep industry currently has access to four key mitigations at this stage:
 - Genetics
 - Anti-methanogenic feed additive supplements/forages
 - Soil carbon
 - Abatement (pastures and trees)
- Based on current projections, it is unlikely that the tools outlined above will support industry to meet current targets.
- Critically, further research is needed to support enteric methane mitigation rates, and supply chain partnerships will need to be explored to find ways of funding supplement use. These initiatives should be promoted as strategic research, development and extension projects.

Extension and adoption

Refer 9 “*What are the practical solutions for uptake?*”, below.

Carbon accounting

- Further work is needed to establish new means of reporting and communicating warming impacts to more holistically account for the role of methane in climate change.
- Carbon accounting needs to resolve the problems around industry scale attribution of vegetation and soil carbon removals (and emissions) to specific industry sectors such as sheep.
- Soil carbon is currently cost prohibitive for practical inclusion on the carbon account at farm scale. Modelling or default carbon sequestration rates, tied to verifiable management changes, are required.
- Carbon accounting is retrospective, and account that relies on the NGGI is a minimum 2 years and typically 3 years behind. Industry needs robust forecasting capability to shift to a 5-year projection of emissions, rather than having trailing indicators only.

Carbon markets and incentives

- Incentives are required to drive the adoption of emission reducing innovations, particularly where there is not a commercial return or markets are in early stages of development.
- Carbon markets, while providing some beneficial opportunity to diversify income from traditional agricultural commodities, has introduced complexity into the farming system. Clarification of the business carbon liabilities is essential to ensure sheep producers do not sell carbon assets they may require in the future for market access, or access to finance.
- Agriculture requires a broader range of ACCU scheme methods that reduce conflict between grazing and carbon storage. In particular, broader options for regeneration are needed which do not require full regeneration, and methods that enable regeneration of degraded forest.

- Soil carbon increases may be achievable across large areas of grazing land, but increases are likely to be modest and vary with seasonal weather patterns. Modelling options for soil carbon are urgently needed to reduce the cost of compliance for measuring and monitoring soil carbon, to make it possible for land holders to verify removals on their carbon account.

9. What are the practical solutions to increase uptake?

- Costs and abatement potential may be limited in extensive grazing situations for the sheep industry. Therefore, the rate of adoption is likely to be much slower for anti-methanogenic supplements, particularly in a cost-constrained environment, as they will significantly increase cost of production.
- Investment of significant amounts needed to bring supplements and feed delivery systems to market at a cost-effective price point for grazing-based ruminant industries. Ongoing work is needed to understand the connection between reduced emissions and realised productivity gains - no productivity improvement has ongoing major implications for the cost of abatement.
- Industry and government have a role to play here by investing the significant amounts needed to bring supplements and feed delivery systems to market at a cost-effective price point for grazing-based ruminant industries. The Clean Energy Finance Corporation should be able to lend for these purposes under their charter, which should be encouraged by government.

10. A consistent and trusted approach for assessing and reporting emissions is often raised as a barrier to reducing emissions. Is there a role for the Australian Government in addressing this concern, and how can producers and land managers be supported?

- The Government should develop a standard framework and tools to achieve consistency and confidence – this is a gap at present.
- Certainty regarding emissions targets is crucial for the agriculture sector, especially the red meat and livestock industries.
- With more than 80% of emissions from sheep arising from methane, targets for emission reduction need to reflect the science of global warming with respect to methane. To align with the Paris Agreement, methane reductions do not need to be zero. Future emission reduction targets related to the sheep industry need to reflect a different emission reduction pathway, and a non-zero methane end-point at 2050
- Decarbonisation is expected to be costly. Industry will need ongoing support from Government to:
 - expand research into anti-methanogenic feed supplements.
 - develop new verification techniques and technologies for accounting removals, to reduce costs and make these options ‘fit for purpose’, enabling farms to continue to produce meat and wool while increasing carbon storage in the landscape.
 - Enable businesses to claim removals from ACCUs on company accounts and sell these to the Federal Government. This requires a policy clarification.
- Development of an agreed, accurate and complete baseline for agricultural emissions is critical to support future targets, policies, regulations, investment schedules, research and development programs, and incentive programs.
- Clear carbon accounting requirements and accredited industry carbon calculators are vital to prevent future asset and liability recognition issues for producers, ensuring access to critical markets and finance.
- With the dramatic proliferation of calculators in the industry in the last 18 months, industries need to clearly understand Government and market expectations concerning carbon accounting. Any market-facing or publicly reported carbon account needs to comply with established guidelines.

Many calculators have not been built with clear compliance, which will cause complications for producers who will likely find their carbon accounts not recognised by the market in the future.

11. What skills, knowledge and capabilities do you think producers and land managers need to implement change? What information and data would help them make decisions about emissions reductions and sustainable land management in the short and longer-term?

- Transparency on program information, complexity, costs.
- Clarity of drivers – e.g. maximise financial returns, diversify income.
- Dedicated sustainably funded extension resources.
- Support and investment into initiatives that demonstrate practices on farms (e.g. producer demonstration sites).
- Critical challenge that must be addressed - compatibility of practices with existing production.