

## **Inquiry into the impact of climate change on Queensland agricultural production**

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State Development and Regional Industries Committee  
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To whom it may concern,

**RE: Inquiry into the impact of climate change on Queensland Agricultural production.**

To the Committee,

Australian Pork Ltd and Pork Queensland Inc. welcome the opportunity to put forward this joint submission to the Committee's Inquiry into the impact of climate change on Queensland Agricultural production.

### **Australian Pork Ltd**

APL is the peak national representative body for Australian pork producers. It is a producer-owned company combining marketing, export development, research and innovation and strategic policy development to assist in securing a profitable and sustainable future for the Australian pork industry.

The domestic pork industry is a vital part of Australia's food supply chain, with pork the second most consumed meat in Australia and all fresh pork consumed in Australia domestically sourced. In 2022/23, the Australian pork industry produced 453 426 metric tonnes of pork. The largest volume of production is sourced from Queensland, Victoria and



South Australia from an Australian domestic commercial sow herd, as at 1 July 2023, of 285,538 sows.

The Australian pork industry contributes around \$5.5 billion in gross domestic product to the economy and supports a diverse range of careers across the food supply chain. The industry is domestically focused with around 90% of our production supporting food security for Australians. The value of the 10% exported in 2022/23 was around \$182 million.

More than 31,000 jobs are supported by the industry nationally, predominantly in regional Australia, supporting the economic and social prosperity of communities and the wellbeing of individuals. The Australian pork industry's workforce is skilled, specialised and generally engaged on a permanent basis.

Like many rural industries the pork industry is currently being impacted by staff shortages with the industry willing and able to support more than 36,000 jobs nationwide and opportunity for growth up to 38,000 as Australian pork replaces imported pork in the domestic production of smallgoods.

APL holds a number of roles on behalf of the Australian pork industry, APL is:

- The pork Research, Development and Extension organisation leading climate research and extension in partnership with the Australian government and the research community
- The marketing arm of the Australian pork industry managing national campaigns such as "Get some pork on your fork" and the Valuable Provenance campaign raising awareness of how to support the growth of high-quality Smallgoods made from Australian pork,
- The peak body for the Australian pork industry, representing pork within NFF and other representative frameworks,
- Leading the pork industry's Sustainability Framework implementation,
- Part of the sector-wide collaborative effort to develop Australian Agricultural Sustainability Framework, coordinated by the National Farmers' Federation on behalf of the Federal Department of Agriculture, and
- The industry signatory to the Emergency Animal Disease Response Deed (EADRA).



## **Pork Queensland Inc.**

The Queensland pork industry is worth \$273 million and is supported by approximately 280 commercial pig herds. Queensland has around 22.4% of the national herd. Pig production is located close to grain growing areas. The Darling Downs accounts for 56% of the states total pig herd while the next largest region is Wide Bay which has 30% of the state's pigs. The Fitzroy region has 9.5% of the herd.

## **The APL and Pork Queensland response to the inquiry terms of reference**

### **1. The impacts of climate change and climate variability on Queensland agricultural production and the existing and potential future risks of climate change on the sector.**

The Australian pork industry has the potential to be a key domestic provider of safe, affordable, sustainable protein. However, in addition to the supply chain and input pressures, outlined above, the pork industry must be able to successfully navigate any number of external threats. The APL Sustainability Framework was established to support the pork industry to adapt and mitigate the impacts of climate change.

Climate change is expected to impact the pork industry in a number of ways:

- Impact on productivity: Heat stress has an impact on both fertility and lactation capacity in breeding sows.
- Increased biosecurity threats: Animal health specialists are predicting increased temperatures due to climate change, combined with biodiversity and species migratory changes, will lead to an increased risk of zoonotic diseases. The pork industry has responded to a range of animal disease threats; Swine influenza 2009, Japanese encephalitis virus (JEV) 2022 while keeping a watchful eye on the potential threats from near neighbours such as Foot and mouth disease (FMD) and African swine fever (ASF).
- Flood, heavy rainfall and fire impact: Greater potential for natural disasters to:
  - Impact human and animal welfare,
  - Damage on-farm facilities and infrastructure, and
  - Create significant supply chain disruptions.
- Availability of stock feed: The grains industry will be particularly susceptible to the impacts of climate change. The quality and quantity of Australian grain produced and available as stock feed is expected to be impacted by:



- Changes to the length of growing seasons impacting the varieties able to be successfully grown,
- Erratic weather impacting the sowing or harvest periods,
- Weather damage reducing the quality of the grain,
- Greater potential for flood or heavy rainfall events to cause soil and crop damage, and
- Increased frequency of droughts or below average rainfall.

While the pork industry is less exposed to climate risks than some other agricultural sectors, there are still a number of areas where the pork industry is impacted by climate change and climate variability.

The most important consideration, when working to understand the impact of climate change on the agricultural sector would be to recognise the vast array of industries this sector includes. Within the pork industry any farming businesses are mixed enterprises, over 60% of pork farmers run mixed farms. This increases the complexity for producers working to understand the impacts and risks climate change will have on their farm as well as their pre and post farm gate supply chains.

Pigs are very efficient and able to digest a range of feedstuffs. This gives the industry an opportunity to try and transition onto alternative intensive feedstuffs providing that production efficiencies and animal health can be maintained or bettered. Some piggeries are already taking advantage of this through taking on off-spec products from dairy and bakery manufacturers.

When considering supply chain pressures, the pork industry is seeing downward pressure from further along the supply chain as sellers seek to differentiate their offerings. Retailers and secondary processors/wholesalers are starting to look at their own Scope 3 emissions as well as looking to make sustainability claims on products. This can be a balancing act as producers have narrow margins and may not be able to absorb the additional costs of the decarbonisation actions that are being requested. Some supply chain partners are acknowledging this and looking to work together with their farmers to support climate change mitigation and mediation efforts.

The pork industry has already reduced its fossil fuel inputs over time, falling from 34 MJ per kilo of liveweight produced in 1980 to 14 MJ of fossil energy in 2020. For the pork industry, fossil fuel emissions account for only a small percentage of our footprint, most occurring beyond the farm gate in transport.

Transport of livestock will pose a challenge for the phase out of fossil fuels as there is not yet reliable technology available for large freight that can meet the power and distance needs of the industry. It is also likely that agriculture will have to rely on transition fuels such as biodiesel as it is unlikely the large machinery used in the grains industry could be



easily transitioned to alternatives such as electric or hydrogen at this stage due to the constraints of machinery design.

Agriculture can benefit from this transition through the development of energy crops, however production would need to be carefully balanced to prevent overproduction of energy crops at the expense of food crops.

The phase out of fossil fuels is also likely to have other impacts, such as reduction in the availability of the CO<sub>2</sub> used in abattoirs and other food industries. The plastics used throughout the supply chain will also need to be transitioned. It is imperative that impact assessments are undertaken to understand the broad range of changes that will be needed to fully transition away from fossil fuels outside of transport and energy to capture these use cases.

Australian pork producers are not as trade exposed as other agricultural industries, with around 90% of production consumed domestically. We do export to countries including Singapore, Hong Kong and Vietnam so there are still opportunities to develop further trade opportunities in the Asia Pacific region and an opportunity to work with our neighbours to future proof pork production against climate change. One of the biggest risks is that in the rush to respond to climate change, bigger countries like Europe and the USA dictate the terms that Australia must produce under, without consideration for our unique operating environment.

It is important that any advice provided to the government is grounded in the latest science, with a particular focus on understanding the unique operating environment of Australian agricultural production systems. It is important to also consider the capacity of various industries to be able to undertake further action. The pork industry is well positioned to be a leader, having already reduced emissions significantly without relying on sequestration.

However, this means that the capacity to make large further gains is diminished which should be considered. Australia should have ambitions to be a leader in more temperate options for managing climate change and reducing emissions in a primary production driven economy.

**Recommendation for consideration: The unique operating environment of Australian agricultural production systems needs to be properly considered rather than agreeing to mandates based on comparison with other countries agricultural production environments.**

## **2. Opportunities for the Queensland Government to create and support resilience, adaptation and mitigation measures in preparing the agricultural sector for future climate change.**

In the APL submission to the Independent Review of the Australian Carbon Credit Units (ACCU) (September 2022) APL acknowledged the recent increase in emission reduction goals and ambitions. APL also acknowledged the ongoing changes across the climate change legislative landscape and the increasing pressure on the agricultural sector to deliver abatement opportunities.



The pork industry acknowledges there is likely to be increased pressure and competition for land between agriculture and carbon offset investments which will drive greater interest in the best use of land. While pork farming generally has a small land footprint, we do rely heavily on the grains industry which has a much bigger land footprint.

With the new commitments to net zero by 2050 there are opportunities for the pork industry to provide solutions through the production of low emission protein. The intensive nature of pork production can provide significant job opportunities within rural and regional towns assisting with decentralisation of the population and reducing the need for urban sprawl.

The pork industry's ability to support the broader move towards emissions reductions, to innovate and adapt can be reliant on supportive regulatory structures. Regulatory settings have the ability to support the adoption of new practice and technologies. The pork industry has the potential to be a leading innovator in the circular economy, however, the regulatory environment will be critical to ongoing investment in this space.

As an agricultural industry, the pork industry recognises the need to mitigate climate change and is helping to drive the transition to net zero for food production. While the transition is a challenge due to the technical complex nature of the science, the pork industry is resilient and has been investing in improvements to their processes that benefit both production and the environment over the last 40 years.

The key challenge for industry is to continue this approach as we get to the harder incremental stage of shifting to net zero where the improvements we make are giving increasingly small returns. It is pivotal for the pork industry, and other agricultural industries, to be supported in this transition through clear long-term direction from the government. A stable operating environment, coupled with clear information, advice and research support would help the industry to continue to decarbonise.

The pork industry, through our sustainability framework<sup>1</sup>, have committed to being a low emissions protein by 2030. We are currently tracking well, with an average emissions intensity of 3.3 kg CO<sub>2</sub>-e per kilo of liveweight in 2020, which has decreased by 69% (from 10.6 kg CO<sub>2</sub>-e per kilo of liveweight) since 1980. We acknowledge there is still some more to do, both in further reducing intensity of emissions and overall emissions. However, due to the large reductions already made the changes to come will be smaller incremental improvements.

**Recommendation for consideration: When considering regulatory approaches governments must recognise the pork industry has been an early mover on climate change mitigation, adaptation and resilience. Significant emissions reductions have already been achieved and there is an opportunity to support the pork industry to bridge the remaining gap.**

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<sup>1</sup>[https://australianpork.com.au/sites/default/files/2022-03/APL%20Sustainability%20Framework\\_Web.pdf](https://australianpork.com.au/sites/default/files/2022-03/APL%20Sustainability%20Framework_Web.pdf)



APL currently invests in research and extension to promote opportunities for the pork industry to understand, measure and mitigate the effects of climate change and greenhouse gas emissions on the industry.

APL has invested in a low carbon roadmap and full attributional lifecycle assessment of the industry to understand the options available and support producers to make changes now as well as identify what areas still require further investigation.

We agree that a key action for the industry is “deploying technologies”. We support this through the provision of a dedicated extension officer who provides one on one advice and feasibility assessments to producers to encourage them to uptake emissions reduction technologies such as anaerobic digestion of manure.

As an example, APL are currently working with 50 member producers across Australia to investigate the feasibility of anaerobic digestion of piggery manure either through digestion in covered anaerobic lagoons or in manufactured digester tanks. We are aiming for an increased adoption of anaerobic digestion by industry which in turn will deliver further emissions reductions for the pork industry.

In order to drive further action, it is not enough to just provide information on actions to take to reduce emissions. While this function is critical and is a role APL helps to provide for the pork industry, there is a need for further support to help producers understand and measure their emissions, this is particularly important where Scope 3 emissions are considered as the availability of suitable methodologies and data are still lacking in this space.

As a pork industry, our highest priorities are to help our producers navigate the changing climate and associated changing regulatory environment while still managing to produce a safe, high-quality protein for Australian consumers. In the environmental space, in the short term, we are focused on providing industry with:

- the tools to measure their carbon,
- flexible options to support emissions reductions, and
- options to reduce waste to landfill.

The pork industry is focused on emissions reductions as a key action to reduce our contribution to climate change. We do not have the land holdings that other more extensive agriculture may have to enable sequestration. Sequestration may be an option for larger mixed farming operations, but it is still important to drive down piggery emissions as this sequestration may still be attributed to another part of the business outside the pork component.

The pork industry have incorporated people, pigs, planet and prosperity into our Sustainability Framework. We have recognised that a just transition actively supports the wide scope of activities which feed into wellbeing for rural communities, individuals and businesses.





For farmers to remain financially viable in order to make the investments in mitigation and adaptation efforts, profitability is key for business success. Prosperity should be considered as part of industry sustainability, not just for the producers but also to ensure pork remains an accessible and valuable protein for the Australian consumer.

One thing the Government could continue to do is provide long-term incentives to support capital investment. The pork industry has been able to take advantage of Australian Carbon Credit Units from biogas projects which has helped greatly to finance the technology that can reduce a farm's emissions by around 50%. Early adopters also benefited from grants to assist in the feasibility and capital costs of these systems which can be prohibitive to family farms. The Government could assist in driving further adoption by continuing these types of programs and not limit eligibility criteria to 'innovative' solutions. For example: Anaerobic digesters have been successfully implemented for decades now and often don't meet this criterion. They are still the best available option to reduce piggery emissions and adoption should be supported.

**Recommendation for consideration: Provide funding mechanisms which do not limit research or investment to 'new or innovative'. There are many opportunities to support on farm investment in proven technology which delivers the benefits of long-term emissions reduction.**

**Recommendation for consideration: There is an opportunity to better recognise the contributions the pork industry can make towards a net zero transition while also recognising the significant impact climate change will have on key inputs to our industry.**

Two key activities for Government can undertake to realise opportunities and reduce risks are:

- Through reducing regulatory red tape, and/or
- Incentivising change.

Overly complicated regulations are hindering on farm climate change adaptation. The Government can assist through identifying and reducing these barriers. For example: making it easier to move biogas feedstocks across state borders and encouraging the harmonisation of regulation around digestate use.

Through the provision of incentives such as grants, low interest loans, and tax return benefits for decarbonisation actions the Government can help to drive increased adoption of technologies and practices. This is particularly important for options that may require significant capital outlay as these opportunities may be what makes a project viable. This is particularly important for smaller producers that may not have the access to the capital that corporate pork producers do. This would allow them to invest in capital intensive technologies like renewable energy or to upgrade to lower carbon feed ingredients which often cost significantly more as they are currently in short supply.



In APL's submission to the Parliamentary Standing Committee on Agriculture – Inquiry into Food Security we made two recommendations which are applicable to this discussion as well:

**Recommendation 2 (The opportunity for agriculture to significantly contribute to Australia's climate change targets page 21)** – Harmonisation of Australia's environmental laws and regulatory frameworks should be considered a priority. In the meantime, a Ministerial forum which brings together Agriculture Ministers and Environment Ministers could provide a mechanism to substantially reduce the inconsistency currently inhibiting growth of pork and other intensive livestock sectors.

**Recommendation 3 (The Pork industry is reliant on access to capital infrastructure investment page 16)** – Capital investment requires producer confidence in the regulatory environment. Government can set long-term mechanisms which support producers to have the confidence to invest in future proofing their farms through innovations and technology transfer such as biogas digesters and other emissions reductions activities.

The major risk in governments leading action on climate change is where regulatory actions occur before sufficient research is undertaken on the potential side effects of mandating changes. The concern is that poorly understood regulatory changes can damage both on farm productivity and willingness to engage in further action.

It is also important that technologies are adequately tested in the on-farm environment. Early adopters of biogas systems for piggeries were impacted by a sub-optimal design for a hydrogen sulphide scrubber resulted in these early adopters seeing large maintenance costs as well as issues with generators. Some examples from producer feedback gathered by APL include:

"Costs for maintenance for our 3 sites ranges from \$280K to \$350K per annum. This cost includes direct maintenance (labour, consumables, etc) does not include large items like equipment replacement and consultant costs." - QLD producer 2

"Generator costs since 2015 to November 2022 including capital and maintenance just to keep the system going, replacing engines, replacing alternators, blowers has cost us \$1,205,291. Yes, \$1.2M. Not many piggeries or farms have that kind of spending ability."- NSW producer 1

"Services to support these systems are just not available and we are pig farmers trying to manage complicated gas and power generation systems" - NSW producer 1

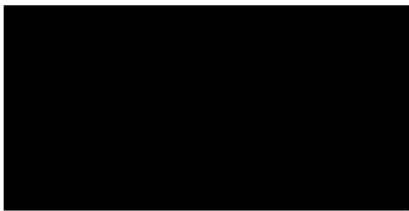
While not an immediate risk, the pork industry is also concerned there may become a point of conflict between activities which had previously counted towards Emissions Reduction Fund (ERF) but have been subsequently mandated by State and Territory Governments which then makes them ineligible for ERF credit considerations. There is a need to more holistically consider the financial and regulatory impacts and disincentives that may be created by State and Territory regulatory decisions. More farm businesses may choose to



keep their reductions and sequestrations for inseting against their own emissions as supply chains demand more action to reduce their Scope 3 emissions which would further reduce potential credits available through the ERF.

In conclusion, we look forward to sharing additional information with the Committee. Please don't hesitate to contact Tanya Pittard, General Manager Policy and Industry on [REDACTED]

Yours sincerely,



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Australian Pork Ltd

On behalf of APL and

Tracy Anderson  
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