



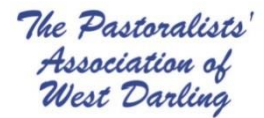
National Farmers' Federation

Submission to the Climate Change Authority

Consultation paper on updating the Authority's previous advice on meeting the Paris Agreement

5 September 2019

NFF Member Organisations





The National Farmers' Federation (NFF) is the voice of Australian farmers.

The NFF was established in 1979 as the national peak body representing farmers and more broadly, agriculture across Australia. The NFF's membership comprises all of Australia's major agricultural commodities across the breadth and the length of the supply chain.

Operating under a federated structure, individual farmers join their respective state farm organisation and/or national commodity council. These organisations form the NFF.

The NFF represents Australian agriculture on national and foreign policy issues including workplace relations, trade and natural resource management. Our members complement this work through the delivery of direct 'grass roots' member services as well as state-based policy and commodity-specific interests.

Statistics on Australian Agriculture

Australian agriculture makes an important contribution to Australia's social, economic and environmental fabric.

Social >

There are approximately 88,000 farm businesses in Australia, 99 per cent of which are wholly Australian owned and operated.

Economic >

In 2017-18, the agricultural sector, at farm-gate, contributed 2.4 per cent to Australia's total Gross Domestic Product (GDP). The gross value of Australian farm production in 2017-18 is estimated to have reached \$60.1 billion.

Workplace >

The agriculture, forestry and fishing sector employs approximately 323,000 people, including full time (236,700) and part time employees (84,300).

Seasonal conditions affect the sector's capacity to employ. Permanent employment is the main form of employment in the sector, but more than 26 per cent of the employed workforce is casual.

Environmental >

Australian farmers are environmental stewards, owning, managing and caring for 51 per cent of Australia's land mass. Farmers are at the frontline of delivering environmental outcomes on behalf of the Australian community, with 7.4 million hectares of agricultural land set aside by Australian farmers purely for conservation/protection purposes.

In 1989, the National Farmers' Federation together with the Australian Conservation Foundation was pivotal in ensuring that the emerging Landcare movement became a national programme with bipartisan support.

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Executive Summary

The National Farmers' Federation (NFF) welcomes the opportunity to contribute to the Climate Change Authority's (the Authority) consultation paper on updating its previous advice on meeting the Paris Agreement targets.

The NFF recognises that climate change poses a significant challenge for Australian farmers. While Australian agriculture has always operated in a varied and challenging climate, the rate of change and its long-term implications for agriculture — its continued access to land and water — which poses a risk beyond what can be addressed without a long term suite of policies under a coherent national framework.

The NFF's 2030 Roadmap details a set of actions to allow the agriculture sector to become a \$100 billion industry by 2030, while simultaneously reducing emissions and making productivity gains.

In this submission, the NFF outlines the policy settings required for the agriculture sector to contribute to the national emissions reduction task. The NFF incorporates learnings from the last few years, and maintains its position on national policy, consistent with its: climate, electricity and energy policies.

The key messages of the submission are as follows:

1. Farmers want effective action on climate change.
2. A national energy policy must reduce costs, ensure reliability and reduce emissions in the national electricity market.
3. Investment in R&D will continue to drive innovation and development of low emissions technologies and products.
4. The land sector will continue to play a key role in meeting Australia's emissions reduction task. However, further reform to the Climate Solutions Fund is needed to improve farmer participation in the carbon market.
5. For international trade of carbon units, the NFF supports a credible and high quality emissions offset and credit scheme that includes pathways for Australian agriculture to generate and trade emissions offsets that are internationally agreed.
6. Any new scheme must ensure all farmers are adequately compensated for any legislative changes to reduce emissions.
7. Any new Climate Solutions Fund (CSF) scheme must be able to involve as many farmers as possible and not a small number of individuals.

8. There must be a CSF mechanism that enables an agriculture industry to benefit from emissions reductions related to their industry.
9. Forestry methodologies under the CSF need review and amendment.
10. The Government should recognise that programs related to agriculture should be focused on improving GHG intensity not simply reducing emissions without regard.

1. Introduction

The National Farmers' Federation (NFF) welcomes the opportunity to contribute to the Climate Change Authority's (the Authority) consultation paper on updating its previous advice on meeting the Paris Agreement targets.

The NFF recognises that climate change poses a significant challenge for Australian farmers. While Australian agriculture has always operated in a varied and challenging climate, the rate of change and its long-term implications for agriculture — its continued access to land and water — which poses a risk beyond what can be addressed without a long term suite of policies under a coherent national framework.

The long-term success of the Australian agriculture sector will depend on its ability to innovate and adapt to future climatic risks. While the sector continues to grow, agriculture needs to contend with current and emerging challenges.

The NFF's 2030 Roadmap was developed to guide industry action to grow the farm sector sustainably including reducing emissions.

The NFF engaged with past consultations undertaken by the Authority, including the:

- 2017 review of the Carbon Farming Initiative legislation and the Emissions Reduction Fund;
- 2017 Action on the land;
- 2015 Draft report on Australia's climate policy options.

The NFF sought improvements in the Carbon Farming Initiative methodologies to allow the sector to further contribute to the emissions reduction task. While some barriers persist, new learnings, policy and technological changes have given the sector greater opportunities to contribute, noting changing factors mentioned in the consultation paper.

Notwithstanding existing barriers, the agriculture sector continues to make a significant contribution to meeting the emissions reduction task. In particular, native vegetation legislation enacted by State Governments allowed Australia to meet its Kyoto commitments. Other initiatives such as the red meat sector's Carbon Neutral 2030 (CN30) reflect this ambition. There is no shortage of willingness from the sector to adopt new, low-emissions technologies to reduce emissions, but it needs ongoing research and innovation to ensure they are accessible.

The NFF notes that agriculture's climate change adaptation plan is currently being developed for the COAG Agriculture Ministers' Forum (AGMIN) and awaits the outcomes.

The NFF welcomes the Authority's sectoral approach in framing this consultation paper and its broad focus that also looks at supporting innovation, finance and new industries, and considers the international context. Nevertheless, the sector is not divorced from, and is largely influenced by, the influence of the international market. Being responsive and adaptive to these changes is necessary to grow the sector into the future.

2. Previous Recommendations

The NFF notes the Authority's previous advice:

2.1 Electricity-generation

- *Implement an emissions intensity scheme or a low emissions target in the electricity sector to provide enhanced investor certainty, ensure reliability and drive net zero emissions by 2050.*
- *The National Energy Guarantee was also seen as a possible way forward in the sector.*
- *End the Renewable Energy Target in 2030 as legislated.*

The NFF continues to support the need for a national energy policy to provide enhanced investor certainty, reduce costs, ensure reliability and reduce emissions in the national electricity market.

The NFF supported the recent National Energy Guarantee that sought to implement a national framework addressing the trilemma of affordability, reliability and sustainability which, ultimately, did not succeed. The NFF continues to support clarity in national energy policy which addresses this trilemma.

Regardless, the NFF's electricity policy remains consistent. Government policy must not favour specific technologies but rather enable the technologies to compete on their merits. NFF recognises the need for a smooth transition to a market based system and holds the view that Australia must move from a policy environment layered in policy distortions and subsidies to one that is more market-based.

Emissions reduction policies must be coordinated nationally to ensure that electricity is reliable and affordable so that the international competitiveness of farmers and the agricultural value chain is not undermined. A do nothing approach is untenable, and an enduring policy framework is required to provide the electricity sector with certainty for investment. A market-based approach for the electricity generation sector that has the broad scale support from the community, industry and the Parliament would provide a platform for stable and low cost transition to low emissions generation.

Notwithstanding this, the NFF welcomes various Government initiatives to increase reliability and stability in the grid, including: Snowy Hydro 2.0, the Battery of the Nation project, and implementation of \$50.4 million for microgrids and regional and remote communities. This aligns with the NFF's 2030 goal to explore smaller scale, decentralised energy sources, including piloting off-grid renewable energy precincts and storage opportunities, which will assist bridging the firming lag in the renewable transition.

In response to significant reductions in the cost of technologies and consumer response to spiralling costs from the National Electricity Market (NEM), more farmers are seeking to go off-grid where feasible. The recent recommendation by the Australian Energy Market Commission (AEMC) to allow transition from poles and wires to stand-alone power systems

paves the way for future uptake of off-grid systems, though are existing regulatory constraints.

The NFF strongly supports research into the development and adoption of new generation and storage technologies, including both centralised and decentralised generation. Innovation will continue to drive change in the way that electricity is generated and managed to meet end-user requirements. Further research is also required to enable the flexibility to support a greater role for decentralised generation and smaller scale or micro-grids.

There continues to be progress towards renewable uptake, and the NFF provides two case studies to illustrate this. Recently, Cotton Australia, NSW Irrigators' Council, and Queensland Farmers' Federation completed a project that sought to identify the unique challenges of growers in regional NSW and Qld with the connection, installation and integration of on-farm solar PV. Titled 'The flow of benefits of regionally embedded generation', the project also tried to identify possible policy and regulatory options to improve and simplify the connection process, and mutually beneficial options for future solar energy projects that can be pursued jointly by growers and network businesses.

The study found a number of barriers and challenges with the planning, design, installation and connection of on-farm solar PV systems. While these barriers persist, the uptake of renewable energy on-farm will be hindered. The findings and recommendations are available in **attachment A** and **attachment B**.

Second, in 2018, ReAqua installed the Australia's first, and biggest, solar diesel hybrid pumping system on a property owned and operated by fourth generation cotton and wheat farmer, Jon Elder. The project was part financed by the NSW Rural Assistance Authority from the Farm Innovation Fund. The systems involves an electric motor powered in part by a 500 kW solar array which, alongside diesel, enables pumping during the night or on overcast days. The system is expected to cut diesel costs by 50%, saving 175,000 litres per year, and has less than a 5 year payback time. This would also reduce 500 tonnes of CO₂ from entering the atmosphere annually and demonstrates the willingness within the industry to adopt renewable technologies on-farm. Further information is available in **attachment C**.

Amongst other initiatives, mainly state initiatives like the Agriculture Energy Investment Plan, they provide a sound evidence base for broader electricity reform to promote productivity on-farm.

2.2 Transport

- *Introduce emissions reduction standards for light vehicles.*
- *Conduct a cost-benefit analysis to investigate emissions reduction standards for heavy vehicles.*
- *Conduct further work into the best roles of public and private providers in delivering electric vehicle infrastructure.*

The NFF is comfortable with the previous advice, but notes that flow-on impacts of reforms to other sectors, particularly transport, are of concern. The majority of any increased burden on agriculture will be flow-on impacts from poorly electricity market reform and increased

costs from the transport sector and should be carefully managed. The NFF also notes that the climate change adaptation plan currently being developed for AGMIN should act to address this transition to avoid perverse outcomes.

2.3 Agriculture and land sector

- *Introduce measures to improve on-farm profitability, reduce greenhouse gas emissions on the land and deliver other environmental benefits at the same time.*
- *Continue crediting land sector abatement under the Emissions Reduction Fund and transition from Government to private sector purchasing of these offsets.*

The NFF continues to support this advice. The Emissions Reduction Fund (renamed to Climate Solutions Fund) continues to be the main mechanism through which the land sector participates in emissions reduction goals.

2.4 Emissions Reduction Fund

- *Transition away from Government to private sector purchasing of offsets under the Emissions Reduction Fund.*

The NFF supports a managed and transparent transition from Government to private sector.

2.5 Energy Efficiency

- *Harmonise Commonwealth and state energy efficiency schemes or implement a National Energy Savings scheme, and update and expand energy efficiency standards for appliances and buildings.*

The NFF believes that Government policy should support and promote improvements in on-farm energy efficiency, self-sufficiency in generation and storage capacity where appropriate.

The NFF's past submission to the Department of Environment and Energy described a number of initiatives undertaken by agricultural industries to identify and promote opportunities to promote energy productivity on farm. These included:

- NSW Farmers' Farm Energy Innovation program which developed information, case studies, tools and calculators¹.
- In the cotton industry, detailed energy use efficiency information, case studies and audits have been prepared², and the myBMP Program has a specific "Energy and Input Efficiency" module³.
- Funded by the Queensland Government, and in partnership with Ergon Energy, Queensland Farmers' Federation is delivering the Energy Savers Program, designed

¹ <http://www.aginnovators.org.au/project/farm-energy-innovation-program-eeig>

² <http://www.cottoninfo.com.au/energy-use-efficiency>

³ See https://www.mybmp.com.au/user/modules.aspx?id=AE641B48-3E9D-4E25-BD58-C7BCE166DC65&p_id=5256D01B-CD90-4F19-A799-0FE9FF441F5A

to assist farmers reduce energy costs by supporting the accelerated adoption of improvements in on-farm energy use⁴.

- Dairy Australia's project 'Smarter energy use on Australian dairy farms', aimed to help dairy farmers use energy more efficiently. Between 2012 and 2015, the project provided 1400 dairy farmers with detailed energy assessments⁵.

They remain relevant as an evidentiary base to support further policies that would improve energy efficiency on farms. The NFF notes various federal and state initiatives, for example, the Government's Energy Efficiency Communities Program and Queensland's Business Energy Savers Programs that aim to improve energy efficiency on-farms.

2.6 Innovation

- *Innovation support focused on research and development of low emissions technologies and products.*

The NFF strongly supports innovation focused on research and development of low emissions technologies and products. The NFF, through its 2030 Roadmap, aspires to have public and private R&D efforts work seamlessly to translate world-class research into tools and services which give Australia agriculture a competitive edge. However, this would require:

- Renewing and extending existing cross-sectoral R&D strategies (including the Primary Industries RD&E framework) to grow the size and impact of both public and private R&D.
- Fostering an R&D investment environment that quickly extends research into commercial tools and services.
- Investing in the capacity of digital and human networks to share and promote new practices and tools.
- Developing a fit-for-purpose regulatory environment that manages risk without hindering access to safe technologies.

3. Achieving a net zero emissions economy in the long term

3.1 Australia's Paris target

The world's population is forecast to exceed 9 billion people by 2050, and demand for food and fibre is on track to increase by 60 per cent in that timeframe. Meeting this demand in the context of a changing climate, while also contributing to global action to reduce emissions, is a challenge for global agriculture.

The agriculture sector contributes to the national emissions profile by both sequestering carbon in soils and vegetation, and the emission of carbon, nitrous oxides and methane from farming practices such as livestock production, cropping, and the burning of savanna

⁴ <http://www.qff.org.au/projects/energy-savers/>

⁵ <http://frds.dairyaustralia.com.au/events/smarter-energy-use/>

grasslands. As of March 2019, combined agricultural emissions accounted for almost 13 per cent of Australia's National Greenhouse Gas Inventory.

The Australian Government committed to implementing an economy-wide target to reduce greenhouse gas emissions by 26 to 28 per cent below 2005 levels by 2030. 185 parties, including Australia, have now ratified the Agreement.

A commitment to five-yearly reviews of national emissions reduction targets are an integral component of the Paris Agreement. In conducting these reviews, it will be important for the Government to examine the:

- targets and progress of our key competitors in international markets, to ensure that Australian trade exposed industries are not placed at an unfair disadvantage;
- suite of policies that are in place, to ascertain whether they are working effectively and efficiently towards achieve our targets;
- distribution of impacts (both positive and negative) of policies, whether these align with anticipated impacts, and any unintended consequences of policies;
- effectiveness of initiatives designed to mitigate negative impacts; for example, impacts on trade exposed industries or vulnerable households; and
- benefits to the economy of setting longer-term emissions reduction targets, to provide a basis for policy stability and investment certainty.

3.2 Opportunities

In 2017-18, Australia's farm sector, at farm-gate, contributed 2.4 per cent to the Gross Domestic Product (GDP), reaching \$60.1 billion. The NFF's vision for Australian agriculture is to become a \$100 billion industry by 2030, with indications this can occur while simultaneously reducing emissions and making productivity gains⁶.

Since the Authority last provided advice to the Government, the NFF developed its 2030 Roadmap, in conjunction with key industry stakeholders, which denotes pathways to be a \$100 billion industry by 2030 while reducing emissions. They include:

- Developing a trajectory approach for each commodity to work towards carbon neutrality whilst maintaining productivity and profitability.
- Enhanced public investment in research that delivers on-farm carbon abatement and productivity outcomes.

The NFF notes the Authority's recently released stocktake report on 'Industry action on climate change mitigation in Australia', which identifies current industry progress on climate mitigation and adaptation.

Given farmers and other landholders manage approximately 51 per cent of Australia's landmass, the agriculture sector is well-positioned to contribute to emissions reduction goals. This opportunity requires innovation to reduce the emissions intensity of our production systems and the policy and regulatory settings that enable farmers to efficiently participate in carbon markets.

⁶ <https://www.agrifutures.com.au/wp-content/uploads/2019/08/AGF-NRI-100bn-Report-S3V1-Digital.pdf>

Continued innovation in the economy — and pathways to harness this — are key to meeting the Paris Target commitments. There are also opportunities for Australian agriculture to reduce emissions intensity and to enable farmers to efficiently participate in a maturing carbon market.

3.3 Risks

The NFF recognises the current and future impacts of climate change on the agriculture sector. However, transition to a low emissions economy must be equitable and just to avoid risks and perverse outcomes from policy uncertainty and flow-on impacts of broader reform which therefore requires coherent planning.

More than 75 per cent of Australian agriculture produce is exported. Thus, being a sector that is exposed to international markets, agriculture needs to remain globally competitive. Climate policy settings must recognise the importance of maintaining our competitive position in global markets. As a key pillar — and a stabilising pillar — in Australia's economy, there is a national economic imperative to ensure that climate policies support and complement a sustainable and growing agriculture sector.

3.4 Transitioning the economy

A just transition should be a key part of any adaptation framework to ensure the most vulnerable — those with lower resilience and capacity to adapt — including low income households and potentially displaced workers, are not left behind. This equally applies to ensuring trade-exposed industries are not internationally disadvantaged.

The suite of Government policies that seek to address the challenge of climate change must be fully examined to ensure that the policy levers of Government work cohesively to achieve national objectives while minimising the risk of unintended or perverse outcomes. The NFF continues to support a 'policy toolkit' approach whereby the most efficient and sector appropriate policy mechanisms are implemented.

Prudential regulation and macroeconomic policy plays a role in preventing price shocks, maintaining downward price pressures and reliability, and then targeting emissions reduction as part of this transition. The electricity sector is a pointed example of what occurs without proper planning.

The NFF recognises that Australia's generation mix is changing as existing infrastructure assets reach the end of their useful lives and notes that scale of change in the electricity sector over the last few years. The closure of the Hazelwood Power Station and accelerated penetration of intermittent energy sources — through rooftop and other solar, and wind farms — has seen regulatory change struggling to meet the changing demands of the grid, including reliability and firming.

The entire Australian community relies on secure, affordable access to electricity and other forms of energy, and the Australian agriculture sector is no different. The current regulatory regime is not serving the interests of consumers, and this is particularly the case for Australian farmers. Affordable and reliable electricity is essential to ensure that Australian agriculture and downstream value adding sectors remain internationally competitive.

In 2018, the Australian Farm Institute published a report: *The Impacts of energy costs on the Australian agriculture sector*⁷, estimating energy prices have risen up to 100 per cent in the past five years in some examples. The cost of energy used by the Australian agricultural sector is estimated at \$5.85 billion pa, equating to pre-processing costs of 9 per cent of the gross value of production. The annual cost of electricity was estimated at \$1.2 billion.

As the electricity sector continues its transition to renewables, issues with transmission infrastructure to account for an increasing decentralisation of electricity generation has become prominent, and has resulted in decreasing marginal loss factors. The rate of renewable uptake in the system has outpaced deployment of new transmission, which could constrain further investment in the sector if there is no room for new projects to connect to the grid. Without progress in resolving issues, the sector will struggle with its transition. Implementing this needs to happen in a measured and planned way to avoid further ‘gold plated’ capital which are already adversely affecting electricity prices.

4. Sectoral and economy-wide policies

4.1 What are the current and projected costs of, and potential for, abatement across different sectors and how does that influence the choice and timing of policy across sectors?

It is difficult to ascertain the costs of abatement across different sectors. There is further work required to be done to determine costs in alternative policy proposals to help sectors understand the relative merits and risks.

4.2 What are the barriers (regulatory and non-regulatory) to realising emissions reductions and are there any additional supporting policies, regulations or government actions that could drive emissions reductions in cost effective ways?

Climate Solutions Fund

The NFF believes that a national, economy-wide policy should recognise and reward for farmers sequestering carbon. There are complementary benefits, e.g. biodiversity, which are being progressed through other programs. Policies that encourage innovation and adoption of low emissions technologies and participation in carbon offset markets are most appropriate for agriculture.

The Climate Solutions Fund (CSF) remains the key Government policy incentivising farmers to participate in emissions reduction activities. Previously, the NFF argued that there were fundamental barriers to farmers participating in the carbon market, including:

- There is no easy way for a farmer to bundle up and sell all the different sequestration and emission reduction strategies that suit their farm system and business model. This creates very high administrative costs and reduces efficiency.

⁷ Heath, R, Darragh, L & Laurie, A (2018), *The impacts of energy costs on the Australian agriculture sector*, Research Report, Australian Farm Institute.

- There are a very limited number of methods available that are relevant to the majority of farmers. The reality is that for most Australian farmers, cost-effective methods are not yet available in both an implementation and monitoring sense.
- Understanding the legal and financial risks to participating in the carbon market is difficult, and sourcing trusted and independent advice is challenging. Emissions reduction projects are long term commitments of at least 7 years, and in the case of sequestration projects 25 or 100 years.

Today, where we have a set maturing set of carbon markets pivoted on Carbon Farming Initiative methodologies and, despite adjustments to the ERF, many barriers continue to persist. As of 1 August 2019, there have been nine auctions, 788 projects currently registered, and over 70 per cent have been under agriculture related methods. Vegetation projects — reforestation and avoided deforestation — make up over half of the projects registered. Of the agriculture methods, only two projects have been used — destruction of methane in piggeries and soil carbon sequestration in grazing systems. Several projects have had no uptake since 2017, including:

- *Fertiliser use efficiency in irrigated Cotton*
- *Estimating sequestration of carbon in soil using default values*
- *Reducing greenhouse gas emissions in beef cattle through feeding nitrate containing supplements*
- *Reducing greenhouse gas emissions in milking cows through feeding dietary additives*

Various published reports have examined these barriers and, given the continued lack of uptake, the evidences suggests that barriers preventing farmer participation continue to persist. In its past submission, the NFF noted the deterring influences of: high overhead costs including the costs of initial project registration, ongoing monitoring and data collection and the preparation of project reports and management of audits; and, scalability.

For example, two existing mechanisms to encourage forestry are through the Farm Forestry and Plantation methodologies under the Carbon Farming Initiative. However, both have restrictions that limit the viability of forestry plantations to certain geographical areas, compounded by other auditing and transaction costs, and the lack of aggregation. As of 15 March 2019, the methodologies have 0 and 2 registered contracts respectively.

The farm forestry methodology is intended to be used by landholders who want to establish a permanent planting of trees or a harvest plantation on land used for grazing and cropping. Under this methodology, forestry plantations are limited to:

- (a) 100 ha or no more than 30 per cent of the farm for areas with long term average rainfall above 400 mm, whichever is smaller.
- (b) 300 ha or no more than 30 per cent of a farm, for areas with long term average rainfall below 400 mm, whichever is smaller.

Under the *Carbon Credits (Carbon Farming Initiative) Regulations 2011*, forestry plantations are defined as a ‘specified tree plantation’ which restricts new plantations to a rainfall zone 600 mm or below. However, the vast majority of commercial plantations are located in

annual rainfall zones of 600 mm and above. The rainfall triggers within the forestry methodologies need review and amendment.

For small farm businesses, the effort required for a single method offset project is just not worth it as the current approach to participating means that a significant percentage of project value is lost to overheads, and this is significant barrier to uptake.

In 2019, AgriFutures published a report⁸ investigating how carbon markets could be improved to facilitate farmer participation, and they conducted two surveys: one targeting Australia's carbon service delivery industry and another involving pig farmers to assess perceptions of why farmers participate in offset projects and the barriers to participation.

The report identified a collection of interacting factors — both demand-side and supply-side factors — that deter farmer participation in carbon markets, depending on project, farm type and individual characteristics of landholders. The main demand-side factors include:

- Low-carbon prices – with prices hovering between \$10 and \$14 per Australian Carbon Credit Unit (ACCU), despite being stable, many agriculture related projects will not be financially viable. The reforestation and avoided clearing projects predominantly involved farmers in the semi-arid regions in Queensland and NSW, where grazing usually occurs. The primary reason for their uptake is their financial viability at relatively low carbon prices against a low opportunity cost. The low uptake of other methods, particularly those under agriculture, can be attributed to the low price for carbon and to costly and poorly developed measurement technology e.g. core sampling for soil.
- Uncertain sources of demand
- Price uncertainty

The main supply-side factors include:

- Absence of cost-effective abatement technologies
- Institutional barriers;
- Policy uncertainty;
- Transaction costs;
- Financing barriers;
- Lack of information and awareness of carbon market opportunities;
- Personal, social and cultural barriers.

The findings of the report are consistent with other studies as well as the NFF's understanding of the issues. These issues are well-documented and should inform the improvement of the market to incentivise farmer participation.

The Government's \$2 billion extension of the CSF provides opportunity to improve the scheme. The funds must support further reform of the CSF through the development of new methodologies and improving existing methodologies. However, ongoing research to

⁸ <https://www.agrifutures.com.au/wp-content/uploads/2019/07/19-026-Digital-1.pdf>

building scientific knowledge is needed to underpin a robust whole farm systems approach to carbon accounting that could lead to a farm system approach.

The Government should consider whether there is sufficient oversight implementing projects, that is, whether an ombudsman or independent commissioner is needed.

Electricity

The NFF strongly supports farmers' right to manage land both for and against wind and solar farmers. Community concerns arising from increased development of solar and wind farms on agricultural lands — particularly those considered prime agricultural lands — are important considerations during the transition process.

Several land use conflicts around the development of renewable energy, particular where it means potentially losing productive agricultural land, reflect this reality. Loss of productivity agricultural land will make it increasingly difficult to meet the global food and fibre challenge. While the NFF supports sensible development of renewable energy resources in regional communities, a collaborative approach that fosters a respectful and trusted relationship between industry and farmers is critical to ensure farmers' rights are maintained.

The NFF has developed 'Industry Engagement Guidelines for On-farm Activities' for on-farm activities which contains a set of principles for industry engagement with farmers. The guidelines are provided in **attachment D**.

4.3 Should changes be made to the Emissions Reduction Fund to explicitly target multiple benefits (such as environmental outcomes) as well as abatement outcomes?

The NFF believes that emissions reductions policies work best where they improve natural resource management for both increased productivity and abatement, and where there is adequate reward for the ecosystems services that farmers provide to the wider community. However, while the NFF supports the pursuit of multiple benefits, the Climate Solutions Fund must not lose sight of its intended focus, especially without other market participants.

To realise the potential for multiple benefits from emissions reduction policy, policies must boost confidence and encourage growth in both agricultural enterprises and emissions reductions projects while continuing to offer incentives to invest in, conserve and restore natural capital.

Many practices that can be adopted to manage for biodiversity outcomes, such as managing and protecting vegetation or improving soil function, also result in carbon sequestration benefits. Ensuring that ecosystem service markets and carbon markets can work together into the future should be at the forefront of considerations in the future design of the former. To reduce the cost barriers to participating in markets, farmers need to be able to "bundle up" all opportunities in an efficient way.

The NFF's natural capital policy describes a pathway to develop a natural capital market that could contribute to this goal. It is available at **attachment E**.

5. Supporting innovation, finance and new industries

5.1 What role should the Government play in enabling the development and uptake of low-emissions technologies and development of associated industries?

The NFF believes the Government should act as an enabler and support the development of market infrastructure necessary to create an attractive investment environment from the private sector.

As mentioned, the NFF's policies specific to electricity generation must:

- recognise that innovation and the adoption of new technologies will be key to meeting emissions reduction goals at the lowest cost
- ensure NEM rules are flexible enough to support a greater role for decentralised generation
- not favour specific technologies, but rather enable technologies to compete on their merits
- ensure emissions reduction policies do not distort the market in favour of particular technologies to deliver the full benefits of innovation
- position the generation sector to meet both current and future emissions reduction obligations at the lowest cost
- support research into, development and adoption of new generation technologies, including both centralised and decentralised generation
- support and promote improvements in on-farm energy efficiency, self-sufficiency in generation and storage capacity where appropriate

Government policies specific to the electricity distribution and transmission sector must:

- ensure that appropriate incentives are in place for efficient levels of investment in transmission and distribution assets, regardless of ownership
- reduce the incentives and ability for DNSPs to challenge regulatory decisions
- ensure that reliability standards strike a balance between shared risk across all end users and individual users' risk management choices and strategies
- ensure that assets that are not used or not useful are excluded from regulated asset bases, so that electricity networks operators do not pass risks on to end users
- ensure that the weighted average cost of capital is regularly reviewed to accurately reflect the cost of finance

5.2 What role is there for Government in developing an enabling environment to support increased flows of green finance?

Similar to above, the Government must lead by facilitating market development/maturity where necessary. The Australian Renewable Energy Agency (ARENA) is one Government body that fulfils this role, providing investor confidence in renewable energy projects. Its future funding should be reviewed to ensure it is fostering conditions that encourage increased and long term private sector investment in appropriate technology that also builds sufficient scale. The Clean Energy Finance Corporation (CEFC) also plays an important, ongoing, role in this task.

6. International Context

6.1 What role should international units have in Australia's response to climate change, and how should risks around availability, cost and quality be managed?

Given that many agribusinesses trade internationally, the purchase of credible, lower cost international credits may be an efficient pathway for Australian businesses to meet any future carbon liabilities. However, the NFF notes that there is still international debate about how international units should be accounted for.

The NFF supports a credible and high quality emissions offset and credit scheme that includes pathways for Australian agriculture to generate and trade emissions offsets. To enable this opportunity, the right international policy settings are required to build a strong market framework that both benefits Australian producers and our emissions reduction goals. In its absence, a multilateral system for trade and/or an agreed framework for bilateral trade a potential alternative arrangement.

However, linking carbon markets only makes Australian producers more interdependent and therefore sensitive to change that occurs elsewhere. Australia needs to be confident that the international market is a stable place for trade and that our participation in a global market place supports the achievement of our emission reduction goals.

The NFF notes that offsets are not the only solution and should be considered as a part of the broader package. A just transition to adoption of sustainable and integrated emissions reduction measures will become increasingly important. The NFF does not support the use of international markets where that may compromise productivity gains in agriculture.

6.2 What role should carryover from earlier commitment periods play?

The NFF supports the use of carryover from earlier commitments to meet emissions reduction targets. Native vegetation legislation enacted by State Governments enabled Australia to meet its emissions reduction commitments under Kyoto, but at a cost to farmers who were not reasonably compensated. If these land use restrictions were used to meet the Kyoto targets, it is reasonable for them to be used to meet the Paris targets.

Any new scheme must ensure all farmers are adequately compensated for any legislative changes to reduce emissions.

FACT SHEET

IRRIGATORS

The flow on benefits of regionally embedded generation

Cotton Australia, the Queensland Farmers' Federation and the NSW Irrigators' Council conducted four regional case studies, an online grower survey and a workshop with network businesses to identify the barriers and challenges with installing solar PV on farm and feeding excess electricity into the grid.

To find out more about the project, read the factsheet or visit the [Energy Consumers Australia website](#).

This project was funded by Energy Consumers Australia Limited (www.energyconsumersaustralia.com.au) as part of its grant process for consumer advocacy projects and research projects for the benefit of consumers of electricity and natural gas.

Electricity is an important input for irrigated agriculture, however rising costs have constrained NSW and Qld growers and impacted their profitability, competitiveness and on-farm operations.

As a result of the increases in electricity prices, growers have investigated a range of options to reduce their electricity costs, including the use of on-farm solar PV and other related technologies. The growth in solar PV is evident by the increasing number of small, medium and large solar sites across NSW and Qld and the increasing number of connection applications ([AEMO 2018](#)).

The abundance of land and sunshine in regional Australia, provides an opportunity for growers to explore options for on-farm solar PV in order to reduce electricity costs, increase productivity and utilise a clean source of energy.

78% of growers nationwide say they do not have control over energy costs

78%

45% of growers are currently using solar (without battery)¹

45%

Despite the interest and growth in farm-solar PV, growers have encountered a range of barriers and challenges in the installation and utilisation of solar energy on-farm.

Motivation for the project

To explore these barriers and challenges, Cotton Australia, the Queensland Farmers' Federation (QFF) and the NSW Irrigators' Council (NSWIC) have conducted further research. A research project titled *Irrigators – the flow on benefits of regionally embedded generation* was initiated and sought to:




1. Identify the challenges experienced by growers who have installed (or were planning to install) solar energy on-farm with the intention to feed excess energy back into the electricity grid.
2. Analyse network connection application processes and the associated barriers that limit growers from feeding on-farm generated solar energy back into the electricity grid.
3. Assess the previous amendments to NER (Chapter 5A) to determine if it had improved the connection process for solar PV generators under 5MW to connect to the electricity grid.

The objective of the project was to identify the unique challenges of growers in regional NSW and Qld with the connection, installation and integration of on-farm solar PV. The project also tried to identify possible policy and regulatory options to improve and simplify the connection process. It also tried to identify mutually beneficial options for future solar energy projects that can be pursued jointly by growers and network businesses.

¹ <https://www.commbank.com.au/content/dam/commbank/assets/business/can/agribusiness/agri-insights-9.pdf>

Barriers and Challenges

Growers identified a range of barriers and challenges with the planning, design, installation and connection of on-farm solar PV systems.

 Technical	 Economic	 Information
<ul style="list-style-type: none"> Integration of the solar PV system with existing on-farm equipment Identification of an optimal location for the solar PV system to connect to dispersed on-farm infrastructure assets Understanding the export capacity of the grid to size the on-farm solar PV system accordingly Management of local network constraints. Standardisation of the services provided by solar suppliers and installers Acceleration of technological advances in solar PV systems and battery storage 	<ul style="list-style-type: none"> Determination of the value of on-farm solar PV systems if it is not continuously used throughout the year and/or when export opportunities are limited Change in electricity tariffs creating uncertainty about future energy costs and the viability of the on-farm solar PV systems Management of large upfront costs for a high quality solar PV system and technical expertise Address potential additional augmentation costs to enable export opportunities Understanding the connection fees and other ancillary charges 	<ul style="list-style-type: none"> Access to quality information, expert advice and quality assurance processes to be confident the on-farm solar system is fit for purpose and operates efficiently with the existing on-farm equipment Engagement between growers, network businesses and suppliers to ensure the regulatory and operational environment is understood Transparency of the network decision-making process for connections, export capacity and the interaction between different solar PV applications Consistency of information and technical advice (networks and suppliers) Unclear determinations of export thresholds for large-scale solar farms and smaller connections

Although some of the barriers and challenges exist due to the complexity of the network connection process, there is a significant lack of grower expertise which prevents them from effectively engaging with the network companies. Growers are also often not able to scrutinise the advice of the solar PV supplier/installer. The unclear determination of the connection process and the lack of a quality assurance scheme for solar PV panels and installations has also generated a lack of trust in growers. This has also led to additional costs and delays.

A Case for Change

- Improve the hosting capacity of the networks to enable more connection opportunities for growers.
- Impose accreditation requirements for solar PV installers with the Clean Energy Council to allow growers to identify suitable solar PV suppliers/installers.
- Review NER Chapter 5 amendments to assess more broadly whether improvements to the connection process have been realised for growers in regional areas.
- Improve the communication and engagement between growers, network businesses and solar PV suppliers/installers to ensure a clear and transparent information flow. This would also ensure technical requirements and operational constraints are understood.

Case Studies

New South Wales

An established irrigated cotton farm in Gunnedah (NSW) extended two existing 10kW on-farm solar PV systems with a further 100 kW grid-connected single-axis PV system. The system is designed to power a pump with a submersible motor that will run constantly during the 3-4 cropping months.

Although the overall project was a success, it took 18 months to complete. Extensive planning and design were required to select the right system for the local environment (flood-prone land and high winds) and minimise the footprint on valuable agricultural land. The grower also faced high upfront costs and additional expenses for technical equipment and grid connection ability.

After completion, the network business only approved export of 50% of the system's capacity back to the grid without a detailed explanation about the decision.

“Economics don't stack up unless you contribute a lot of personal effort... I feel like a pioneer in the industry.”



Queensland

An innovative solar PV project in the Bundaberg region has been operational since 2018. The project 'Adapting Renewable Energy Concepts to Irrigated Sugar Cane Production at Bundaberg' has been led by the Bundaberg Regional Irrigators Group (BRIG) with the funding support of the Australian Renewable Energy Agency (ARENA).

The aim of the project is to reduce irrigators' dependence on grid-supplied electricity through the installation of a large-scale solar PV system capable of delivering a comparable irrigation supply to the established distribution system.

The project faced challenges and delays due to a number of compliance issues with innovative new equipment and the grid connection standard. In particular, the grid connection specifications for all inverters and similar technologies to AS/NZ4777.2: 2015 Grid connection of energy systems via inverters was a serious impediment to the installation and operation of the solar PV system.

Despite these challenges, data obtained from the project indicate that the new integrated solar PV system has led to a 70 per cent reduction in grid-supplied electricity use and a reduction in irrigation cost from \$1.30 to \$0.39 per tonne of sugarcane. The PV system also has potential for productivity gains on farm including the full utilisation of water allocations and additional cropping opportunities.



“The more we understand about the ins and outs of how it works and what it can do, the better value that we can get out of it.”

For more information:

Please contact us:

Cotton Australia
02 9669 5222

Queensland Farmers' Federation
07 3837 4720

NSW Irrigators' Council
02 9251 8466

This project was funded by Energy Consumers Australia Limited (www.energyconsumersaustralia.com.au) as part of its grant process for consumer advocacy projects and research projects for the benefit of consumers of electricity and natural gas.

Grower-to-grower recommendations

- Know your needs and the limitation of the site
- Be informed about the supplier, the quality of the installation, and the technical/legal/regulatory requirements
- Explore all opportunities and consider building your on-farm solar footprint slowly and strategically
- Know the process for connecting to the grid and prepare for extensive waiting periods and factor in additional costs

Why do these challenges and barriers need to be addressed?

Simply because agriculture is important!

Agriculture contributes \$60 billion dollars to Australia's economy.

Based on its current trajectory, the agricultural industry is forecast to grow to \$84 billion by 2030 (ABS 2017).



Australian growers are an important part of regional Australia, supporting local businesses and communities. Their financial viability and productivity are important to grow regional Australia.

The project undertaken by Cotton Australia, NSWIC and QFF has shown that there are several barriers and challenges facing the installation of solar PV in regional NSW and Qld. Change is required to realise untapped opportunities. The changes include:

- Streamlining the connection process
- Improving the information flow between the network business, solar installers and growers.

Australian growers continue to see opportunities in the renewable space – all that is needed now is that the regulatory and policy setting to be an *enabler* and not a *constrainer*.









IRRIGATORS








The flow on benefits of regionally embedded generation

Strategic Plan and Priorities

Practical “on the ground” measures

-  Prepare a solar PV “decision tree” to guide growers through the assessment, installation and connection process. The aim is to ensure growers ask the right questions and are able to scrutinise the advice of solar PV suppliers/installers.
-  Document the actual solar PV connection process as a case study.
-  Promote the Solar Retailer Code of Conduct more broadly amongst growers.
-  Seek a meeting with the AER/AEMC to gain a better understanding of whether funding through the Demand Management Incentive Scheme (DMIS) and Demand Management Innovation Scheme (DMIA) could be used for these types of trial projects.
-  Arrange grower workshop with the Distribution Network Service Providers (DNSPs) to discuss mutually beneficial opportunities for future solar PV installations across regional NSW and Qld as well as obtain a commitment from the DNSPs to improve the visibility and public information on current/likely future network constraints.
-  Seek funding through Federal/State agencies to conduct a project with growers on solar battery installations on the farm (e.g. in light of the upcoming elections). The aim is to assess whether the identified challenges of the project: *Irrigators - the flow on benefits of regionally embedded generations* can be overcome and/or mitigated.

Regulation

-  Seek public disclosure of grid constraints and remaining export capacity that is updated at a regular interval.
-  Seek third-party accreditation requirements through the Clean Energy Council. The aim is to ensure a consistent level of service provisions and quality assurance for any installation/maintenance.
-  Seek an AER led or independent review of the National Electricity Rule (NER) Chapter 5 amendments to determine whether the previous legislative amendments have been effective from a growers’ perspective. If not, seek further amendments to Chapter 5 (e.g. through a consortium of organisations and ECA) and ensure regular reviews of Chapter 5 amendments are conducted.
-  Seek a review of the planning laws to ensure that they are effective and efficient in protecting high quality agricultural land plus drive further investment in on-farm solar PV where it is sensible.
-  Seek legislative amendments to ensure agricultural land is restored post the life of a solar PV project (more relevant if the land is leased).
-  Seek a change of the NER to improve grid monitoring and enable the development of a database to facilitate PV projects in regional NSW and Qld.
-  Amend NER to enable network augmentation costs that would result from solar PV connection applications to be shared so that it does not ‘crowd-out’ potential investment in solar PV.

Guide

-  **High priority**
Achievable and/or inexpensive
-  **Medium priority**
Challenging and/or potential resource intensive
-  **Low priority**
Difficult and/or resource intensive

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Policy

- Seek a meeting with the AEMC/AER to discuss whether current consumer protection is sufficient in the context of solar PV installations (lease arrangements; adequate installation etc).
- Lobby for the AER or AEMC to design a 'One-stop-shop' website that includes advice on solar grid connection process for growers (e.g. rules & regulation, protection & recourse, barriers & challenges, case studies, advice on who to speak to, a reference to codes and key issues).
- Lobby for a review the Energy Network Australia (ENA) model connection process via the Agricultural Industries Energy Taskforce to develop clear performance benchmarks for future evaluating the voluntary codes.
- Lobby for a review of the Australian Standard AS 4777 - Grid Connection of Energy Systems via Inverters.
- Lobby for an optimal solar feed-in tariff to give growers greater certainty for their investment decisions in on-farm solar PV systems.
- Lobby state governments or AEMC to host an online register and/or FAQ with information on past connection issues. Also, seek assistance from state governments to improve the interaction between growers, DNSPs & solar PV installers/suppliers.

Other

- Seek funding to undertake further investigation into related solar PV connection challenges in order to develop a science/evidence-based research base and construct a data-set for growers (e.g. CEFC to drill down into the finance data).
- Seek funding (through DMIS and other opportunities) to improve the hosting capacity of the network (and seek a meeting with AEMC/AER to determine how DNSPs can access funding for upgrades) – particularly in low-voltage networks.
- Seek funding to investigate opportunities for peer-to-peer trading in regional NSW and Qld (in partnership with state governments/ARENA and DNSPs).
- Seek funding to investigate opportunities to achieve more 'value from solar installations' – including through PPA agreements; using other technologies as another energy storage instead of investing batteries; investigate options for electric tractors to be used on-farm.

Why do these challenges and barriers need to be addressed?

Simply because agriculture is important!

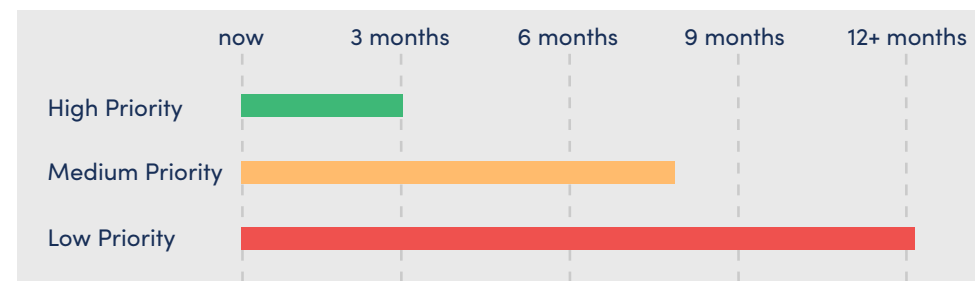
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NARROMINE 500kW SOLAR DIESEL HYBRID IRRIGATION PUMP

Located 25 minutes from Narromine sits Australia's biggest solar diesel hybrid pumping system. The property owned and operated by fourth generation farmer Jon Elder, is used for farming cotton and wheat.



ReAqua's solar diesel hybrid pumping system – the first of its kind in Australia, sees Jon's current diesel engine for his water pump replaced with an electric motor. This motor will be powered in part by a 500kW solar array. A diesel generator was also installed and with the addition of an automated control panel, it will seamlessly blend generator power with the available solar power, enabling the pump to run at night or on overcast days when the solar arrays are unable to maintain their maximum power.

With three quarters of the farm's water coming from bores, the system will pump 15 megalitres of water per day with up to eight megalitres of water pumped per day by solar alone. Exactly one hectare of land was used to install 1,550 solar panels which will also have a 25-year warranted life.

With consultation, design and installation all fulfilled by the ReAqua team, the system was completed over a 4-month period and has the ability to generate an income stream from the sale of Large-scale Generation Certificates.



"ReAqua were fantastic to work with. The reason we went with them is that they're the only company in Australia that have both the pumping expertise, the knowledge of bores and the expertise of solar generation under one roof."

Jon Elder

To make the most of the solar array, Jon will pump using solar only, during winter months to fill the reservoirs on the property. The system will halve Jon's diesel bill and pay for itself in just five years. The system will also reduce 500 tonnes of CO₂ from entering the atmosphere annually.

500kW solar array

250kW electric motor

500 KVA
CAT diesel generator

14 inch line shaft turbine
pump set at 80 meters

175,000 litres
of diesel saved each year

Remote access to data and
ability to turn the system
on and off

Less than a 5 year payback

Cost of the system 100%
tax deductible in year one

Project part financed by the
NSW Rural Assistance Authority
(\$250K from the Farm
Innovation Fund)



Industry Engagement Guidelines for On-farm Activities

Context

The National Farmers' Federation has developed a national code of conduct incorporating principles to guide respectful and constructive engagement between farmers and industries that require access to land. It relates to activity on farmland including: renewables (solar and wind) development, cultural heritage studies and surveys, carbon industry, the resources industry as well as others that may emerge in the future.

The advent of mining and gas exploration, and more recently, solar and wind farms on agricultural land has often created significant land use conflicts in many regions around Australia, and stress for farmers and farming communities.

While we support industry investment in regional communities, we recognise that a collaborative approach that fosters a respectful and trusted relationship between industry and farmers is critical to ensure farmers rights are maintained, and are able to make informed decisions. These guidelines provide a general set of principles intended for the specific purpose of industry engagement with farmers.

It should also be noted that, a range of legislative and regulatory requirements exist for different types of activities and development, including:

- Development and planning laws;
- Environmental legislation (particularly for an activity that is likely to have a significant impact on matters of state or national environmental significance); and
- Water licencing and regulation.

Guidelines

General

- Parties should be aware of local, state and federal regulation and legislation regarding the activities and/or development prior to commencement of the activity. Where appropriate, the farmer should share information on specific requirements relating to agricultural activity on the land;

Attachment D

- The farmer should be aware of their rights and options. In advance of any discussions regarding access or development on the land, the farmer should have a copy of the industry guidelines (where applicable). Depending on the type, scale and risks involved with the activity, the farmer should seek legal advice to ensure they are appropriately protected;
- Industry should be aware that many farmers may have engaged with a variety of parties requesting access and use of their land. These past experiences will influence how a farmer views industry practices;
- Farmers have a right to reasonably expect that industry will comply with the guidelines at all times. Industry must also be able to demonstrate their compliance with industry guidelines and provide sufficient evidence upon request;
- Activity conducted on land used for farming requires a high level of cooperation and trust between the landholder and the activity proponent. This requires long term face-to-face engagement as well as on the ground staff and all subcontractors, where practical, to help facilitate effective communication. The farmer should have accessible channels of communication with appropriate personnel to engage in discussions, raise questions and resolve issues at every stage of the process. These processes should be agreed in writing by both parties prior to commencement of any construction work; and
- Industry must identify all relevant risks associated with the activities or development and inform the farmer, so far as reasonably possible, of these risks and discuss how they can be managed.

Land use agreements

- Land use agreements should recognise landholder and occupier property rights, and negotiations must be respectful of farmers' use and enjoyment of the land;
- Any agreements made in writing with the farmer should be expressed in a clear, accurate and transparent manner using plain English. A farmer is encouraged to have all agreements in writing, although it may not be legally required for some activities;
- Industry must recognise farmers' concerns associated with large scale projects such as impacts on amenity, changes to the microclimate, and potential loss of productive agricultural land. Proponents should work, as far as practicable, with the farmer to minimise these impacts and integrate development into the broader farm system;
- An agreement should establish the basis for which to achieve this and a process for rehabilitation or other compensatory measures. An agreement should provide a protocol for notifying the timing, duration and nature of the activity, access routes, and means of liaising, rehabilitation or compensation of any damages;
- In the design and operation of the project or activity, care should be taken to avoid and/or minimise damage to agricultural land where feasible. These could include areas of high production agricultural land and biodiversity, water supplies, maintaining biosecurity etc. and should be agreed through consultation with the farmer and formalised in a written agreement before commencement;

Attachment D

- An agreement should be reached before the commencement of the activity or development regarding agreed outcomes for restoration of the site and any compensation that is determined to be necessary;
- Industry is strongly encouraged to adopt a 'benefit sharing' approach, beyond the landowner directly engaged, when engaging with small regional communities; and
- Responsible stewardship and management should be demonstrated throughout the life of the project. The agreement should detail how this will be achieved and compensatory measures if not.
- Industry must not compromise existing farm practices including: biosecurity, animal husbandry and timing of cropping. Activities undertaken on-farm should respect these operations and be reflected within the agreement.

Community engagement

- A social licence to operate is critical. Community engagement should be genuine, consistent, and based on mutual respect, and occur from the very beginning of a project. The process should seek to build an enduring relationship between the proponent and the community, maximise beneficial outcomes. Engagement and decision-making should be tailored around the needs and expectations of each community;
- Industry should proactively make available information to the broader community in a way that is accurate, accessible and timely throughout the life of the project in a way that reflects the needs and expectations of the particular community;
- Reasonable opportunities where the activity or development can enhance the value of the land in consultation with the farmer are encouraged; and
- Site restitution at the end of the project is critical. The proponent must engage with the farmer to responsibly decommission the site, including infrastructure and possibly recycling (i.e. product stewardship) and ensure that the land is returned to the way it was and or can be used for other agreed purposes.



National Farmers' FEDERATION

Natural Capital

Issue

For over two centuries, Australian landholders have invested in and managed properties for production and sale of agricultural commodities within various market arrangements that have ultimately focussed on production with less consideration of the value of natural capital used in producing those goods, and, unfortunately, this natural capital has depreciated over time. As awareness and concern for the environment and social expectation on the services it provides has elevated, it is prudent to consider how the value of natural capital can be meaningfully incorporated into the wider market-based framework to ensure social, environmental and economic benefits can be formally recognised and rewarded.

Landholders recognise the need to protect the natural capital that underpins their production systems; however, there is little recompense for the services the natural systems on their properties deliver to society. Furthermore, there is little acknowledgement of landholders who actively make improvement to their land to increase the value of their natural capital. While there is a private benefit, natural capital has been providing public good conservation outcomes on private land which, without a new paradigm, is set to continue indefinitely and should be acknowledged. As such, the benefits of lower food and fibre prices due to open competition within a free trade environment are enjoyed by all consumers. This is, at its worst, to the detriment of landholders who are struggling to cover the costs of environmental stewardship. The long-term outcome of this problem is the degradation of our natural capital. To continue with the current approach to agricultural supply chains is not in the best interests of farmers or Australian consumers.

Therefore, there is a logical imperative to capture the value of natural capital in a market-based framework that governs decision making on farm. In the absence of a market-based system that assigns value to natural capital and the various services provided by the environment, there is little ability for farmers to pursue the protection of natural assets within the current agricultural market framework without incurring significant cost or loss of income. Landcare has been a key transitional tool and needs to be built on. To date, national and state legislative instruments to protect the environment have been prescriptive, inefficient, and do little to recognise the potential role of farmers in sustaining, and enhancing, their natural and agricultural landscapes. This policy seeks to complement existing legislative frameworks, but also to empower landholders to quantify and manage their natural capital.

Research into the cost externalities for agriculture in Australia is inadequate, including assessment of production value, environmental benefits, and social benefits in balance with environmental costs

such as nutrient rundown, degradation or biodiversity loss. There has not been sufficient quantification of the natural capital value and ecosystem functions in the assistance they provide in supporting a healthy environment.

As farmers manage 51 per cent of Australia's land mass, they are in the best position to manage the land sustainably and protect the environment, and should be encouraged to do so. Farmers need to be paid fair and equitable returns for the products and services their properties provide. This policy addresses the need to capture the value of natural capital in a market-based system that is integrated with the Australian economy and recognises that the best environmental outcomes are achieved by empowering and incentivising landholders to manage their landscapes.

Background

Natural capital is the world's stock of natural resources which includes geology, soils, air, water and all living organisms. Many natural capital assets provide people with free goods and services, often called ecosystem services. Features of our environment that directly or indirectly produce value to people including ecosystems, species, freshwater, land, minerals, the air and oceans, as well as natural processes and functions are all elements of natural capital.

The world is trending towards a market-based system for valuing natural capital. Recent decades have shown an increase in Payments for Ecosystem Services (PES) programmes and the introduction of natural capital accounting standards to measure natural capital. Internationally, this includes the United Nation's System for Environmental-Economic Accounting (UN SEEA). The international experience has provided a robust foundation with which to build a policy that is unique to the Australian landscape.

Valuing Natural Capital

The measurement and valuation of natural capital is essential for recognising and building the strengths of Australian landscapes in financial, environmental, community, cultural and spiritual terms. The measurement, restoration and building of natural capital introduces new economic threads into the canvas that maps rural communities across Australia and can help agricultural businesses grow and thrive.

The concept of natural capital has the potential to reconcile economic and environmental interests by integrating the value of natural capital in decision-making. Valuing natural capital makes it possible, for example, to test a cost-benefit analysis of building a new municipal water treatment plant, against restoration or preservation of catchments and wetlands for the clean water filtration services they provide.

This policy builds on extensive research and existing international policies for valuing natural capital. There are five pillars required to progress natural capital policy:

- Government recognition on the need for a natural capital policy;
- Development of a process for valuing biophysical assets and ecosystem services;
- Development of a process to publicly monetise biophysical assets and ecosystem services;
- Establishment of a private market; and
- Mechanism for policy review to inform future policy.

Policy Position

The NFF recognises the importance of the environment in the services it provides for agriculture and for the broader public. In order to sustain these assets into the future, an economic framework that recognises the value of these assets may be desirable.

Australia needs a natural capital policy that can drive industry valuation of natural capital and its incorporation into the national environmental economic accounts. The policy will help establish a marketplace that enables natural capital to be valued through crediting payments for derived ecosystem services. Valuing natural capital will also facilitate direct measurement and tracking of land condition and provide landholders with incentives to improve the value of these assets.

What the industry needs

The policy must:

- Recognise that 51 per cent of Australia's land mass is managed by farmers and they are best placed to manage their natural assets;
- Recognise that those in agriculture need to be paid fair and equitable returns for the products and services their properties provide;
- Recognise that a market driven system is the most efficient way to incentivise farmers to manage the landscape without incurring significant cost and potential loss of income;
- Develop a robust process for valuing natural capital and ecosystem services;
- Develop a robust process for monetising biophysical assets and ecosystem services;
- Recognise that regulatory control only of vegetation management is not the best pathway to committed outcomes. Pragmatic measurement of natural asset condition and incentivising landholders to improve it will provide more robust outcomes and remove the need for ongoing political intervention;
- Register of natural assets values on the National Environmental Economic Accounts and payments from the services these assets provide;
- Establish a marketplace that enables transaction of natural capital value through banking and commercial sectors at an individual landholder level;
- Recognise that, in the absence of valuation and a robust market for biophysical assets, just terms will need to be expanded to cover the loss of use rights;
- Have the ability to attract support and investment from external sources to deliver on industry and community needs;
- Distinguish public and private benefit in the publicly funded acquisition, measurement, collection and consolidation of reliable and valid data;
- Encourage and facilitate the sharing of data between organisations linked to agricultural industries who are interested in valuing and measuring changes in natural capital; and
- Establish a Natural Capital Commission, under NFF stewardship, to elevate the challenge of developing market and dimensions, oversee the key political, legal, economic, and social aspects of introducing a natural capital component to the Australian economy and investigate Australia's positioning within the international marketplace as a market provider of significant ecosystem services as well as environmentally and sustainably produced commodities.