

SUBMISSION TO ADVANCING CLIMATE ACTION IN QUEENSLAND – MAKING THE TRANSITION TO A LOW CARBON FUTURE

The united voice of intensive agriculture





Queensland Farmers' Federation

The Queensland Farmers' Federation (QFF) is the united voice of intensive agriculture in Queensland. It is a federation that represents the interests of 17 of Queensland's peak rural industry organisations, which in turn collectively represent more than 13,000 primary producers across the state. QFF engages in a broad range of economic, social, environmental and regional issues of strategic importance to the productivity, sustainability and growth of the agricultural sector. QFF's mission is to secure a strong and sustainable future for Queensland primary producers by representing the common interests of our member organisations:

- CANEGROWERS
- Cotton Australia
- Growcom
- Nursery & Garden Industry Queensland
- Queensland Chicken Growers Association
- Queensland Dairyfarmers' Organisation
- Burdekin River Irrigation Area Committee
- Bundaberg Regional Irrigators Group
- Central Downs Irrigators Limited
- Fitzroy Basin Food & Fibre
- Flower Association of Queensland Inc.
- Pioneer Valley Water Board
- Pork Queensland Inc.
- Queensland Chicken Meat Council
- Queensland United Egg Producers
- Australian Organic
- Queensland Aquaculture Industries Federation.

Introduction

QFF welcomes the opportunity to respond to the Queensland Government's platform document 'Advancing Climate Action in Queensland – Making the transition to a low carbon future'.

In recent years, Queensland (and Australia) has seen much political toing and froing across emission reduction strategies, climate change policies and renewable energy targets and plans. The constant changes in priorities and effort at both state and federal levels has resulted in lost opportunities and uncertainty and undoubtedly cost both business, especially agriculture, and the environment.

It is challenging for businesses just to keep up with policy changes in this area. However, what is certain for business is the rising liabilities from climate and carbon related exposure. This includes increasing electricity costs; rising environmental compliance; the increasing scrutiny of customers and investors; through to the possible reintroduction of a price on carbon.

QFF notes that there are currently numerous documents and policies under development by the Queensland Government which provide dialogue to, and will directly influence carbon emissions and climate change. For example, the Queensland Renewable Energy Expert Panel Issues Paper and Queensland's Biofutures 10-Year Roadmap and Action Plan. These documents whilst synergistic, do



not appear to be fully aligned and their development is across several portfolios/departments. In some cases, there appears to be contention between these portfolios and the policies being developed. These documents also have a direct impact on accompanying documents and stakeholder aspirations including the FNQ Regional Plan and a number of Major Projects under investigation.

QFF also notes the increased funding of \$1.8 million (\$6.8 million over four years) to lead the development of the Government's climate change strategies, including climate change adaptation and mitigation announced in the 2016–17 Queensland Budget as well as the Drought and Climate adaptation project occurring in the Department of Agriculture and Fisheries. Whilst it is commendable that the Government has increased funding, the amount is still inadequate to meet the challenges and changes required to effectively plan and manage climate change in Queensland. With a number of different government departments working on areas related to and impacting on the state response to climate change, communication between government and key stakeholders is critical to avoid duplication and wasted resources.

QFF provides this submission without prejudice to any additional submission provided by our members or individual farmers.

A Strategic Approach to Climate Change Mitigation

The document lacks a strategic approach to climate change mitigation, and would be more valuable if it suggested a target for carbon emission reductions, or at least a process to determine one. For example, considering Figure 2 (p. 10) how will the state lead a scientific process to determine carbon abatement priorities across the key emissions?

- Electricity + direct combustion, which is consumed in almost every home and business throughout the state, likely to increase from 70 to 90 MT CO2-e over the life of the plan. McKinsey's Marginal Abatement Cost Curve for Australia (2008)¹ indicates approximately 50 MT CO2-e in abatement nationally through "negative cost" initiatives such as motors, air conditioning, heating and refrigeration, lighting. What are the opportunities in this sector and at what cost?
- Transport a sector that relates to every home and business, and a sector closely linked to Land Use Change and Forestry (LULUF). McKinsey's Marginal Abatement Cost Curve for Australia indicates emission reductions of around 10MT CO2-e available to transport with a net benefit of \$65 per tonne CO2-e. What are the easy wins and what potential abatement could occur in stages from this sector?

What Queensland is already doing

This list of initiatives lacks an integrated group of tangible proposals that will lead to direct emissions reductions. Much more integrated proposals are required, relating to:

• Pattern of development to reduce the overall distance travelled by people and freight, and then to shift to low-carbon modes and low-carbon fuels.

¹ McKinsey & Company - An Australian Cost Curve for Greenhouse Gas Reduction (2008).





- Design of buildings and infrastructure to require less energy initially (orientation and then efficiency).
- Efficiency industry and agriculture, where energy productivity (i.e. yield for each unit of energy applied) is increased.
- A smooth economic and technological transition to low-carbon energy and new energy market models as our incumbent generators are out-competed.

The paper should recognise the potential for energy savings identified through the ecoBiz program, funded by the Department of Environment and Heritage Protection and delivered by the Chamber of Commerce and Industry Queensland in partnership with the University of Southern Queensland, and the Energy Savers program, delivered by Ergon Energy and QFF.

Impacts of a changing climate

Impacts of climate change on agriculture (p. 15) fails to list impacts from increased storm cell/super cell activity. These storms are likely to cause increasing impacts to crops, valuable farm infrastructure (solar panels to equipment) and disrupt supply chains and off farm infrastructure needs (grid/electricity networks).

Regarding the third bullet point under impacts of climate change on agriculture ('Salinity related to rising sea levels adversely affecting crops in coastal areas'), it is worth noting that much of the salinity impacting Queensland's agricultural land (even in some coastal areas) is 'dryland salinity' which refers to the gradual loss of farm and grazing land to rising salt. Salt incursion in soils is a major issue but the salt is not necessarily as a result of rising sea levels - there is salt everywhere in Australia, originating from the weathering of rock minerals or the simple act of sea salt dropping via rain or wind.

Agriculture - A Trade Exposed Industry

In supplying the increasing demand for food in the region, Australia is subject to competition and major institutional impediments. Despite sustained attempts by Australia to create a level playing field that relies primarily on global markets, most of the world's wealthy industrialized countries continue to protect their farmers from competition by maintaining high import tariffs, import quotas and direct price support-mechanisms. The sector also continues to struggle with falling commodity prices to some sectors and declining profitability.

QFF notes that electricity prices in Australia are higher than overseas jurisdictions², disadvantaging our commodity exports on the global market and leaving farmers heavily trade-exposed. A communique from Australia's Agricultural Industries Electricity Taskforce (February 2015) detailing this issue and impacts to overall productivity is included as an attachment to this submission.

More than any other sector of the economy, agricultural productivity in Australia is highly dependent on seasonal variations in rainfall and access to a reliable water supply which in most

² CME. (2012). Electricity Prices in Australia: An International Comparison. A Report to the Energy Users Association of Australia.



cases, can only be secured through a sustainable energy (electricity) supply. Changes to weather patterns are influencing both the intensity and duration of rainfall and thus redefining the suitability of many areas for farming; and resulting in many irrigators having higher-than-average load factors compared to other energy consumers. For some farmers, changes to rainfall patters and water shortages will inevitably mean surrendering their farms as production falls and the level of farm indebtedness becomes unsustainable. The government therefore has a role to assist agri-businesses to manage this risk and ensure future food security.

Significant investments in infrastructure and technology, and growing innovation across the sector will provide some opportunity, but as agriculture is and will always remain a high risk industry, the sector often fails to attract the required investment capital. Historically, farmers have responded to their eroding terms of trade by increasing productivity. In many cases this requires access to water which in turn can only be achieved and guaranteed by the corresponding access to affordable, reliable energy which will assist farmers to compete on the global market.

Vegetation Management – Land clearing in Queensland

As stated in the introduction, it is a challenging time for business to keep up with policy changes. For too long, vegetation management in Queensland has been the subject of a political pendulum swinging back and forth on the whims of successive governments. QFF has repeatedly called for a genuine consultative process to achieve a position on vegetation management that could be supported by all stakeholders and may lead to long term stability.

The lack of stability creates uncertainty, does not allow best management practices to be employed and discourages investment. The recent draft report by the Australian Government Productivity Commission, 'Regulation of Australian Agriculture', supports QFF's long standing position. A sensible, sustainable long term vegetation management framework must be founded on current evidencebased science and genuine risk. It must enable landholders to employ best farm management practices, reward environmental services and support responsible growth. The framework must be balanced and deliver a sustainable social, environmental and economic future for Queensland and its landholders.

QFF notes the document has been overtaken by events, as it references vegetation management legislation introduced to the Parliament in March 2016, which was defeated in August 2016. QFF was opposed to the proposed changes to the vegetation laws put forward by the government. More details are available in QFF's submission to the Agriculture and Environment Committee.

Energy Efficiency

QFF notes that the document requires further emphasis on energy efficiency as an important tool for avoiding carbon emissions. Energy efficiency is recognised as a low cost, low risk, and low emissions energy resource, but continues to face barriers to implementation. The document does not adequately recognise the role of energy efficiency as a primary activity for managing carbon emissions. Queensland needs to question the role of energy efficiency in achieving climate policy and related goals for the state, utilities and rate-payers. For an example, please see the US EPA's



Clean Power Plan³, which establishes the first CO2 emissions guidelines for existing fossil fuel-fired power plants under the Clean Air Act [Clean Power Plan 2015]. Although it is worth noting that this Plan is currently being challenged through the U.S. Supreme Court system.

In 2007, McKinsey and Company identified that through a range of initiatives, Australia could reduce its emissions to 35% below 1990 levels at no net cost to the economy. In particular, it was noted that:

- Significant reductions in greenhouse emissions are achievable, pointing to a reduction of 60% below 1990 levels if all measures below \$65 per tonne of CO2-e were implemented.
- There are significant quantities of 'negative cost' opportunities available, allowing Australia to reduce emissions by 20% on 1990 levels by 2020 at no net cost to the economy, leading to 35% by 2030 at no net cost to the economy.
- Further reductions would be available at a low cost, amounting reduced GDP growth of around 0.02% per year.
- Australia has a greater-than-average opportunity for emissions reductions than global counterparts with relatively higher emissions in power and forestry.

There are large negative cost opportunities across the economy in motors, commercial and industrial buildings, residential heating and cooling and vehicle fuel economy savings.

If encouraging energy efficiency as a compliance tool is a goal, stakeholders may also want to consider the role of complementary programs and policies, such as:

- energy efficiency resource standards
- ratepayer-funded energy efficiency programs provided by utilities or by third parties on behalf of utilities or the Queensland Government directly
- building energy codes (such as NABERS)
- privately provided energy services, such as energy savings performance contractors
- efficiency provision for low-income and other vulnerable parties
- appliance standards.

Complementary policies can ensure energy efficiency investments contribute to compliance by avoiding generation and thereby reducing emissions at the source. These policies can help ensure investments are made in cost-effective emissions reduction measures that face barriers to implementation.

QFF encourages the government to strongly emphasise an energy-hierarchy approach to encouraging emissions reductions: reduce the amount of energy used (energy reduction); using energy efficiently (energy efficiency); generate heat and electricity from renewable sources (renewable energy); use low carbon sources (low carbon energy); finally sourcing from efficient conventional options (conventional energy).

The document currently prioritises renewables and while QFF supports the widespread adoption of renewables, they do not reduce the amount of energy consumed. Reductions in energy consumption will lead to direct energy benefits in two stages:

³ ENVIRONMENTAL PROTECTION AGENCY - Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units. Federal Register / Vol. 80, No. 205





- 1. significantly reducing operational costs to homes and business with lower consumption and lower demand;
- 2. and will also lead to reduced capital cost of any renewables and subsequent energy storage requirement.

At the utility level, strong reductions in energy consumption and demand will reduce pressure to upgrade electricity network infrastructure and reduce the rate of investment in energy infrastructure, leaving funds available for productivity initiatives. Network capacity will remain available for new market models such as virtual net metering or peer-to-peer electricity trading.

The document makes several references to advancements and (emissions) targets in California as an example. It is worth noting that California relies extensively on complementary policies to achieve its greenhouse gas emissions targets under its Global Warming Solutions Act of 2006 (CARB 2008). California's rationale for coupling complementary policies with the price signal from its mass-based emissions trading program stems from the persistence of traditional barriers such as "lack of information available to energy consumers, different incentives for landlords and tenants to conserve energy, and different costs of investment financing between individuals, private corporations, and the state government". The document does not demonstrate either the understanding or strategic direction required to mimic an approach taken by many of the US states, particularly California.

Queensland's Agricultural Fuel Mix

QFF acknowledges that farm operations adapt (where they are able) to higher energy (and fertilizer) prices by shifting to more energy-efficient production practices and input use. In some cases, farmers respond to higher energy prices by finding other ways of reducing or otherwise offsetting their energy purchases. For example, the installation of off-grid energy generation capacity including solar photovoltaic and use of stand-alone diesel generation.

As electricity prices continue to increase, more farmers are moving to on-farm energy generation using renewable and non-renewable energy technologies (in terms of substitution of grid power). Many new technologies now permitting for the continuous access to power (for example, solar with battery storage), coupled with decreasing technology costs are allowing farmers to install generating capacity to manage/shape peak demand and manage grid-reliability issues.

A significant issue for farmers and agribusinesses, particularly for processing and water pumping, is the reliability of the current electricity supply in edge-of-grid areas (often constrained areas). Disruption in electrical supply results in processing down-time, and unnecessary wear and tear on machinery, reducing the life-span of critical assets and infrastructure including energy efficiency measures. On farm electrical generation from solar and other renewables can assist with managing unreliability in regional and 'edge-of-grid' areas.

The opportunity for the supply of excess electrical generation from regional renewable generation to the grid should be permitted and a suitable rebate paid to farmers (and other generators) where new generation capacity is avoided. In the case of regional areas, permission for connection is granted by Ergon Energy Corporation (the network arm), not Ergon Energy Queensland (the retail arm).



From 1 July 2016, South East Queensland (SEQ) retail electricity prices were deregulated. This means the Queensland Competition Authority (QCA) no longer regulates retail electricity prices for residential and small business customers (those businesses consuming under 100MW of electricity per year) in SEQ. Retail prices for large customers (businesses consuming over 100MWh per year) in SEQ have been deregulated since 2012. Instead, SEQ-based retailers now determine electricity prices and publish their market and standing offers online and on the Australian Energy Regulator's independent price comparator website⁴ where customers are able to compare and evaluate available product offerings. This reform, it is hoped, will stimulate retailers to set competitive prices and offer SEQ customers a greater range of products and services.

For customers outside SEQ, the QCA reviews the regulated electricity tariffs each year and determines new prices based on a number of factors. These regulated tariffs or prices are sometimes referred to as 'notified prices'. The QCA has released its final determination for regulated retail electricity prices for 2016–17. Many of QFF's members have seen double-digit price increases annually over the past decade, with the current QCA data showing that a typical business can expect a further 11.2 to 15.8 per cent increase on their electricity bill next financial year.

The continuous increases in electricity prices coupled with reduced reliability is resulting in more agricultural businesses increasing their use of diesel. According to 2011 data⁵, diesel accounted for 81 per cent of agricultural energy use, equating to 76 per cent of total sector annual energy cost. However, more recent data⁶ indicates diesel is now 87 per cent of the energy cost (noting the reduction in diesel prices, between 2011 and 2015).

QFF is aware of agricultural businesses currently moving 'off-grid' in regional areas. Whilst electricity prices remain high and the reliability of electricity delivered via the grid, diminishes, the value proposition offered by the traditional network is decreasing. The Queensland Government must use evidence-based strategies to address the future of the electricity distribution networks in regional Queensland and provide future policy certainty to users. The management of electricity prices for regional Queensland (through the Community Service Charge and Uniform Tariff Policy) including impacts on electricity prices from renewable energy generation must also be included in the broader decision making process if unintended consequences are to be avoided.

Examples of Barriers to Low-Carbon Energy

QFF is aware of farmers who are currently unable (through technology constraints or simply the administrative burden of the process) to provide their excess energy generated on-farm via solar PV back to the local grid. The lack of retail competition in regional Queensland and the inability to secure other service providers for 'grid-services' (including for the installation of new electrical meters through to transformers), prohibits opportunities.

⁴ https://www.energymadeeasy.gov.au/

⁵ Australian Bureau of Statistics. (2013). Energy Accounts 2011-2012. Catalogue No. 4606.

⁶ National Centre for Engineering in Agriculture. (2015). Improving Energy Efficiency on Irrigated Australian Cotton Farms. Publication No. 1005371/1.



QFF understands that older-technology meters without interval recording capability are an impediment to facilitating the feed-in of excess renewable energy generated from on-farm sources; and that greater competition in metering will promote innovation and lead to investment in advanced meters that deliver services valued by consumers at a price they are willing to pay. The AMEC Rule change (repealing Part 8A of the National Electricity Law) will, in theory, expand competition in metering and related services and create competitive certainty. However, it is unlikely that regional Queensland (western region) will be attractive to third-party providers.

Whilst meters are not immediately engaging to customers per se, it is critical for customers to be totally engaged with the energy products and services enabled by them such as energy efficiency, load management and renewable energy technologies. Retailers, for example, will increasingly demand product and service differentiation as the markets move away from basic metering. Any meters/metering products installed now must take into account future needs, and the quality and functionality of the (smart) meters must be of sufficient standard to permit the feed-in of excess electricity generation from renewable energy technologies to the grid or effective energy efficiency programs.

Land use

The document demonstrates a lack of understanding of the agricultural impacts of land use and the effects climate change will have on agricultural production in Queensland.

Land use is critically important for mitigation of climate change. Already we are seeing industries move location as the climate and associated weather patterns change. The government needs to understand this and have set a process for the development of new agricultural land as existing agricultural land becomes unfit for purpose. Responsible land clearing does have the ability to exist in a low carbon future and play a part in preparing agriculture for the inevitable changes while maintaining vegetation as carbon stores and biodiversity.

The document touches on carbon farming, but a much more holistic and detailed approach to land use services needs must be developed. Environmental/ecosystem services provided by agriculture needs to be included in any 'carbon farming' policy. Where landholders are providing environmental outcomes for the community, governments should 'buy' these environmental services – a position supported by the Australian Government Productivity Commission.



Attachment A

COMMUNIQUE Agriculture Industries Electricity Taskforce

Australia has the highest electricity prices in the world. The Agriculture Industries Electricity Taskforce¹ calls on the federal government to address the critical industry and market reform necessary to fix the broken regional electricity pricing system.

Unsustainable electricity costs are destroying the viability of irrigated agriculture businesses and eroding Australia's international competitiveness. An international comparison of Australia's key agricultural trading partners conducted in 2012² showed that Australia's average electricity prices had grown by 40 percent since 2007. Cost increases for irrigated agriculture have been in excess of 100% for most and as high as 300% for others over the same period.

The Electricity Taskforce, representing Australia's key agricultural industry organisations, was established in 2014 to advocate for a more sustainable system to remove the burden of high electricity costs on food and fibre producers. Members of the Taskforce have long advocated for in the order of a 30% reduction in electricity prices through the Australian Energy Regulator (AER) pricing determination process.

The energy productivity of Australian agriculture has declined more than 33% since 2008. The Government's aim to double the productivity of Australian agriculture is an impossible task without also increasing energy productivity and at the same time providing the energy security that farmers need to stay in business, let alone increase scale.

Typically government regulated network costs and other charges account for around 70% of a farmers' electricity bill while the actual cost of electricity makes up just one-quarter of the electricity bill. It is a perverse outcome of an electricity pricing policy that allows networks to burden customers by passing on the costs of unwise and, in some cases, redundant investments. These costs are forcing irrigators to go off grid.

Something is seriously wrong when small scale diesel generation is a better option for farmers than using a modern electricity network. Australia is a low cost energy producer; this is our comparative advantage.

The Taskforce acknowledges the work of the AER through the draft pricing determinations in Queensland, New South Wales and South Australia in delivering significant price reductions. However, due to the electricity networks vigorously challenging the AER determinations and the constraints within the Australian Energy Markets Commission (AEMC) rules that govern the regulatory process, the sector is back where it started, facing unacceptable costs across those states.

¹ Members of the Electricity Taskforce: National Irrigators' Council; NSW Farmers Association; National Farmers' Federation; Cotton Australia; NSW Irrigators' Council; CANEGROWERS; Queensland Farmers Federation, Central Irrigation Trust (SA), Bundaberg Regional Irrigators Group (BRIG)

² 'Electricity Prices in Australia: An International Comparison': A report to the Energy Users Association of Australia by Carbon + Energy Markets, 2012.



The Taskforce seeks:

- electricity pricing, policy and programs that drive water-efficient irrigation practices and increased electrification of pumping, thereby reducing diesel consumption and increasing the energy productivity of Australian agriculture.
- as part of this:
 - o a national food and fibre tariff model tailored to the unique needs of producers
 - a \$250 million water and energy productivity program ³to fund and accelerate adoption of energy solutions in irrigation that enable smart, water efficient irrigation practices (pressurised, water efficient irrigation is energy intensive and data intensive)
 - a regional electricity policy framework that drives efficient demand management at the ends of networks and avoids large electricity users moving off the grid (leaving stranded network assets)
- policy and R&D that advances farm-scale renewable energy as part of integrated region energy supply and demand management solutions, thereby leveraging existing distribution assets.
- examination of a rule change at the Australian Energy Market Commission (AEMC) to change the way the regulated asset base (RAB) of network companies is calculated.
- write off of underperforming network assets to avoid consumers paying for past overinvestment in network infrastructure (poles and wires).

Taskforce members will progress the significant work undertaken to date with relevant bodies to identify alternative energy solutions for the sector. This includes working with the Alliance to Save Energy 2xEP campaign to develop and advocate cross sectoral solutions, the Australian Renewable Energy Agency (ARENA) to identify renewable energy technologies, securing grants through Energy Consumers Australia (ECA) and identifying opportunities through the Clean Energy Regulator and the Clean Energy Finance Corporation.

The Taskforce will also continue its campaign to advocate to government to ensure that network supplied electricity remains a cost-effective energy source for Australia's food and fibre producers.

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Tom Chesson: 0418 415 597 National Irrigators' Council

³ The water energy nexus is well documented globally. Optimal water efficiency in irrigation can only be achieved by piping irrigation networks and pressurising delivery, ideally regulated using smart, automated control systems. Operating such systems, however, entails far higher energy usage that flood and other gravity based systems, which are wasteful of water.

State and Federal governments have invested billions in water efficiency programs without addressing the energy part of the equation. We argue that a national irrigation energy productivity program funded by ARENA is needed to develop and incentivise adoption of irrigation systems that optimise both energy and water usage. In addition to increasing energy and broader agricultural productivity, the program would help reduce pressure on national bulk water resources, and in so doing may reduce water allocation conflict in the Murray Darling Basin and other irrigation catchments.

The proposed \$250 Million program would comprise R&D, demonstration pilots, extension and outreach, and training for service providers, linked to a capital fund that farmers can access for new infrastructure. In a variation from existing ARENA programs, funding criteria would embrace the portfolio of measures required to optimise energy productivity and sustainability and would not be restricted to renewables. Funded works would include digital control systems, pump and layout optimisation and hybrid energy solutions (eg network energy supplemented by solar). The program would also cover energy planning for irrigation districts to identity demand management, load shifting and distributed generation opportunities.





