



QUEENSLAND FARMERS' FEDERATION

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Submission

3 March 2017

Department of Environment and Energy
John Gorton Building
King Edward Terrace
PARKES ACT 2600

Via email: NEMSecurityReview@environment.gov.au

Dear Dr Finkel

Re: Response to the Independent Review into the Future Security of the National Electricity Market: Preliminary Report

The Queensland Farmers' Federation (QFF) is the united voice of intensive agriculture in Queensland. It is a federation that represents the interests of 15 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 Irrigators
- Central Downs Irrigators Limited
- Bundaberg Regional Irrigators Group
- Flower Association
- Pioneer Valley Water Board
- Pork Queensland Inc.
- Queensland Chicken Meat Council
- Queensland United Egg Producers
- Australian Organic.

QFF welcomes the opportunity to provide comment on the 'Independent Review into the Future Security of the National Electricity Market: Preliminary Report' (the Report). QFF provides this submission without prejudice to any additional submission provided by our members or individual farmers.

The united voice of intensive agriculture



Summary

QFF and its members are significantly concerned about the unsustainable increase in electricity prices in Queensland which are damaging on-farm productivity and critical export markets (see Attachment 1). The National Electricity Objective is to “*promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality, safety, reliability, and security of supply of electricity*”. At this point in time, the National Electricity Objective is not being realised. Under current market governance arrangements, existing loopholes are enabling price gouging by network businesses and preventing a fair and effective pricing structure for consumers.

The issues of high energy pricing or reliability are being unhelpfully politicized. The argument is not ‘renewables versus fossil fuels’ it is about the inadequacy of the networks and the organizational governance hindered by a set of rules which are no longer fit-for-purpose. Under Australia’s current quasi-federal system, there is no clear accountability for the increasing costs, falling productivity or inadequate supply.

Oversight of electricity networks and retail markets used to be managed by the states and territories, clearly making them accountable for pricing and reliability; and avoiding the complex yet inadequate governance systems currently in place, which enable the current political ‘blame-game’.

QFF welcomes the priority the review affords to energy security, and notes that it needs to consider the energy security at the local level. Farmers in parts of the distribution network face regular and significant supply disruptions, which directly impact on productivity and highlight the need for action to improve localised energy security. These issues are driving farmers to consider the feasibility of reducing reliance on the network, or even disconnecting key infrastructure completely to mitigate against supply security and cost risks which may compound the issues of grid underutilisation.

QFF consider the review needs to:

- be expanded to quantify the cost impacts on customers, including irrigators and primary producers (including but not limited to, dairy, eggs, poultry and horticulture)
- consider how the current electricity price rises influence decision making processes of consumers’ particularly those decision relating to adoption of new technologies and also disconnection from the grid
- consider the inflated regulatory asset base of the current distribution and transmission network service providers and the associated on-costs to consumers
- consider the issue of grid transformation and how new technologies will provide opportunities which will ultimately lead to cost-benefits to consumers
- recognise the role COAGs energy productivity targets in further reducing the amount of energy consumed per unit of economic output as an opportunity to allow for greater capacity for economic growth provided by the existing network provided the Government can manage this *Energy Trilemma* effectively.

QFF draws attention of the review to the significant volume of literature pertaining to the ‘utility of the future’ where it is acknowledged that we must move away from providing electricity as a commodity to a structure where regulators and industry directly connect revenue requirements and earning to performance (including innovation and development of services) and not to expenditures.

Background

In 1999, Australians were paying some of the lowest electricity prices in the world – today they are among the highest in the world. Since 2007, energy prices across Queensland irrigated agriculture have increased at least 120 per cent. For some irrigated businesses, these cost increases have been as high as 300 per cent.

Over 307,000 people are directly employed in agriculture across Australia, of which over 55,000 are employed in Queensland¹ representing the largest employer in rural and regional communities. Australia's 135,000 farmers produce enough food to feed 80 million people providing 93 per cent of the domestic food supply, and support an export market valued at more than AU\$41 billion per annum (over 13 per cent of export revenue)². With population growth and rising personal income, the emerging middle class in Asia provides the major market for over 60 per cent of Australian agricultural exports².

In supplying the increasing demand for food in the region, Australia faces some serious competition and major institutional impediments. Rather than to rely on global markets, most of the world's wealthiest industrialized countries have sought to protect their farmers from competition through maintaining high import tariffs, import quotas and direct price support-mechanisms. Australia does not support this approach, meaning our farmers are at a global disadvantage. The sector also continues to experience long-run price declines in real terms for a number of commodities and cost-price squeeze pressures.

Electricity prices in Australia are higher than overseas jurisdictions³, disadvantaging our commodity exports on the global market. A communique from Australia's Agricultural Industries Electricity Taskforce (March 2015) detailing this issue and impacts to overall productivity is included as an attachment to this submission (see Attachment 1).

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 cases, can only be secured through a sustainable 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 patterns and water shortages will inevitably mean surrendering their farms as production falls and the level of farm indebtedness becomes unsustainable. QFF considers that the government therefore has a role to assist agribusinesses to manage this risk and ensure future food security. A critical tool for this is the ensuring that electricity is fairly priced.

Significant investments in infrastructure and technology, and growing innovation across the agricultural sector will provide some opportunity, but as agriculture is and will always remain relatively higher risk than other sectors, it 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 power.

Chapter 1: Technology is Transforming the Electricity Sector

QFF acknowledges that farm operations adapt to higher energy (and fertilizer) prices by shifting to more energy-efficient production practices and input use. In some cases, higher production costs due to increased energy prices lower net producer returns, and farmers respond by reducing overall production. In other cases, farmers respond to higher energy prices by finding other ways of reducing or

¹ Queensland Treasury and the Department of Education and Training, Jobs Queensland Occupational Data, 2016.

² Australian Bureau of Agricultural and Resource Economics and Sciences. (2014). Agricultural Commodity Statistics.

³ CME. (2012). Electricity Prices in Australia: An International Comparison. A Report to the Energy Users Association of Australia.

otherwise offsetting their energy purchases. For example, the installation of off-grid energy generation capacity including solar photovoltaic (PV) and use of stand-alone diesel generation on end-user premises. If electricity prices increase in the future, more farms may find on-farm power generation (in terms of substitution of grid power through to 'renewable energy farming') profitable.

New technologies now permit for the continuous access to energy (e.g. solar with storage). Coupled with decreasing technology costs, some farmers are installing generating capacity to manage peak demand or the entirety of their energy needs. A continuation of this trend will further reduce grid-utilisation and may negatively impact the remaining connections through further price increases.

It is also important to recognise that as well as the 'hard' technologies and 'big data' innovations, there is rapid growth in software, including systems to optimise on-site energy use and enable energy to be securely and transparently traded between counterparties. These innovations are expected to accelerate in the near-term and it is difficult to predict what will be available to the market in the future. The market should be prepared to assess and embrace these technologies quickly.

Programs such as the *Energy Savers Program* that QFF is delivering in partnership with Ergon Energy (with Queensland Government funding) are demonstrating that there are energy efficiency and demand savings available (energy productivity) to farmers with varying paybacks and costs.

Many farmers are implementing energy productivity projects where there is an attractive and certain payback period and/or where it reduces the exposure to future price increases and structural tariff reform. The extent of these efficiencies varies considerably as does the cost of implementation, and the opportunity cost of implementation. In cases where the payback period is less clear, farmers may be reluctant to implement projects where the payback may be affected by external factors such as structural tariff reform or water availability.

The Queensland Government is working closely with the Australian Energy Market Commission (AEMC) and stakeholders to develop new models for grid usage such as virtual net metering, peer to peer trading etc., including but not limited to:

- where a farmer has multiple network connections, they can have renewables connected to the main NMI/account, and credit against consumption at a separate pump connection against the solar generation (with a 'grid transport fee');
- a farm business could generate enough power at one site with a bioenergy plant to cover the consumption at a number of separate (but nearby) sites, by offsetting that consumption against generation at the main site (with a 'grid transport fee').

To allow these new grid usage models to work, the Queensland Government needs to work proactively with the AEMC to support new rules. For example, the current discussions regarding a rule change for Local Network Generation Credits which the AEMC has indicated in a draft determination that it will reject (see ERC0191). Rule Changes will be required to allow virtual net metering and the Queensland Government should be seeking to create the conditions for greater renewable energy deployment and network utilisation by leading a rule change, and Queensland-based trials, to encourage virtual net metering.

Meters

Smart meters (or interval meters acknowledging limitations in some regional communications networks) at end-user premises, as opposed to simply metering energy use for bulk billing purposes, are required to provide usable information. In many cases, larger agricultural users have been mandated to 'upgrade' their meters at their own cost. Smart meters allow both distributors and end users to have better information on how energy is consumed, and to better control that use, including in the use of end-user generation systems. According to the Energy Networks Association "*As technology and energy markets develop rapidly, smart meters and other devices will benefit individual consumers. Customers should*

receive practical information and more rewarding tariff structures that match their needs; be able to control their energy use to get better deals and participate in new markets, such as exporting energy to the Grid through solar panels or supporting energy storage options as these develop commercially”⁴.

One of the challenges of making use of smart device technology is the quantity of data that requires storage, analysis and presentation in a meaningful way. This may require additional computing and software infrastructure which has an associated cost. Given the diversity of activities and scale of some farms, this can require the management of several datasets. The full utilisation of this technology also requires consistent and robust internet, wireless/cable, access via mobile devices and, in some cases, cloud access which disappointingly is not available or insufficient in some regional areas. Such systems can also be designed to notify land users of power failures, mechanical shut-down and location of faults, minimising downtime and cost and streamlining valuable resources, including man-hours.

The installation of appropriate meters is a priority for many agricultural end-users. Without detailed information on their electricity usage, it is not possible to determine appropriate tariffs and any benefits from moving between tariff options to reflect off-peak or seasonal variations/changes to on-farm activities. A lack of interval metering makes it impossible for customers to access cost benefits of energy efficiency and demand management options. Some larger energy users have been required to upgrade their meters, but this has come with large associated costs that smaller farm businesses cannot afford.

Further stakeholder discussions have raised a number of matters regarding metering and tariffs. For example, perverse (agri-)processing outcomes for those on monthly tariffs (meaning that whatever peak is reached in that month is what they pay that month) which lead to production and processing delays.

Chapter 2: Consumers are Driving Change

The context for this proposal is the AEMC’s 2014 rule change on distribution network pricing arrangements and the Queensland Competition Authority’s (QCA) requirement to set regulated electricity prices that reflect the cost of providing the service (i.e. ‘cost reflective’ prices) since 2012-13.

In Queensland, a transition is already underway. The QCA originally intended a one-year transition for customers on transitional and obsolete tariffs in 2012–13, but practical constraints such as metering plus concerns about bill impacts, extended the transition. The QCA is now gradually adjusting these tariffs to more closely align with cost-reflective tariffs by 1 July 2020, when transitional and obsolete tariffs will become unavailable. The transitional process has already resulted in the closure of six tariff classes as part of a rationalisation of tariff offers. In addition, this approach fails to take into account that the standard business tariff continues to change through upward movement of costs and the structure of tariffs.

Overall, farmers are poorly informed about the ‘transition’ to new tariffs and do not have access to a transitional program which would help them to understand their daily and seasonal demand patterns, and provide adequate forward cost analysis to help decision making about options for future energy supply. Insufficient work has been undertaken in Queensland to date to assess irrigators’ capacity to successfully transition to new tariff structures given the likely price increase.

In Queensland there are about 42,000 electricity connections for businesses in regional areas. Almost a third of regional business connections are on eight different tariffs classified as transitional or obsolete. Almost half of connections are for agricultural purposes. Specifically, for the transitional irrigation tariffs, (based on the calculated bill impacts from the QCA and customer numbers from Energy Queensland):

⁴ Changing the Face of Energy Management. Electrical Comms Data. Jan/Feb 2015. Vol. 14 No.6. pp. 32-34.

- Tariff 62 – over 50% of the 8,800 small customers would experience a significant bill increase, and 93.8% of the 290 large customers would be worse off.
- Tariff 65 – over 40% of the 4,900 small customers would be considerably worse off, and 98.4% of the 100 large customers.
- Tariff 66 – almost 30% of the 2,900 small customers would be considerably worse off, and 100% of the 100 large customers.

These issues are being magnified by a 2014 rule change made by the AEMC to establish ‘cost reflective tariffs’. This rule change will force 185 irrigators in NSW onto Time of Use and Demand Driven Tariffs, resulting in cost increases of up to 100 per cent with no corresponding change in electricity usage. In Queensland, an additional complexity arises because of the existence of seasonal Time of Use tariffs.

While QFF consider there to be benefits in energy efficiency assessments on farm, more opportunities need to be scoped for irrigators and primary producers in Queensland to find a sustainable, long term solution to rising network costs – in particular given the advance of new technologies.

The Report acknowledges the growing role customers will have in the future of the electricity system, though greater emphasis on this is needed. The fact that customers are taking decisions to increase their independence from the grid reflects a lack of faith and control that their interests are being best served.

“Customer Engagement” will no longer be a concept limited to retailer choice, tariff choice, and load shifting. Customers are increasingly managing their price risk by looking to new technologies and business models. The network and its operating rules need to quickly adapt to allow this transformation without disadvantaging any sectors of the community and economy. Current regulations and pricing mechanisms are constraining innovation in regional Queensland and limiting opportunities for grid connected renewables that will have a network benefit. New technologies will allow the grid of the future to act as an energy transportation network, where customers and their agents trade energy in the most cost-effective way and therefore be more engaged in the generation and availability of power.

QFF consider there could be potential opportunities in:

- the recent amendment to clause 6.6.4 of the National Electricity Rules and the resulting re-development of a new demand management incentive scheme and innovation allowance scheme;
- the recently released COAG Energy Council Energy Market Transformation Project on stand-alone energy systems;
- the Australian Energy Market Commission Electricity Network Economic Regulatory Framework Review;
- the recently released preliminary report for the Independent Review into the Future Security of the National Electricity Market; and
- ensuring the NEM is able to accommodate the rapid development of new technologies and business models including, battery storage and virtual net metering technologies.

Power of Choice – the need to increase retail competition in regional Queensland

Irrigated agriculture is a cornered demographic – constrained in its access to and reliability of electricity supply through its rural location.

For regional Queensland customers (i.e. those outside South East Queensland – 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 Queensland Government supports regional and rural Queenslanders by subsidising them for the additional costs involved in supplying electricity outside SEQ through payments to Ergon Energy. This subsidy is called the Community Service Obligation (CSO) payment. Unfortunately it results in no retail competition

within the network area so most regional customers are on a standard retail contract with Ergon Energy. This is a monopolistic arrangement.

The case of inadequate competition in regional Queensland is a significant inequity issue. The full opportunities created by competitive choice have not been fully investigated and articulated to regional communities (as has been the case in SEQ). QFF strongly supports opportunities to increase retail completion in regional Queensland in principle. However, the net costs of moving to a network CSO are stated to range from \$90-\$150 million⁵.

Ergon Energy Corporation distributes electricity to approximately 720,000 customers throughout regional Queensland, from Stanthorpe in the south, to the Torres Strait in the north and to the western border with the Northern Territory⁶. These stated costs appear to be significant when divided between the number of regional customers or even accounts (acknowledging that there are more accounts than customers). QFF understands that there is ongoing government support for the continuation of the CSO and Uniform Tariff Policy (UTP) to ensure that regulated prices for regional customers reflect the costs of supplying customers in the south-east⁷.

There are a number of questions surrounding the relationship between demand reduction and electricity prices for regional areas, where high prices provide incentives to use the network less must be answered/modelled following a clear and decisive policy direction by the Queensland Government. However, this ongoing uncertainty may result in more agribusinesses, amongst others, choosing to leave the current grid network (moving to a decentralised model), and concentrating further impacts for those who remain.

A report by Sapere⁸, commissioned by QFF member CANEGROWERS critically examines two network tariff proposals put forward by Ergon Energy:

- **Summer peak (energy and demand) tariffs** apply hefty penalty rates to businesses using a lot of power during weekday business hours and for residential customers using a lot of power during afternoons and early evening, every day of the week. This benefits off-peak users, but is a cost to businesses and families who cannot easily change the times they use electricity.
- Under **inclining block tariffs**, rates go up in three steps as usage increases. These do not reflect network supply costs but instead unfairly penalise above average users of electricity and reward lower than average users. Under this scenario larger families, more energy intensive businesses, including irrigators, and those without solar panels would pay more.

The report concludes that Ergon is apparently trying to avert a hefty network expansion bill with these penalising tariffs which aim to reduce electricity usage, despite Ergon's own data showing that there is a lot of spare capacity in the network. Indeed, Ergon's *2016 Distribution Annual Planning Report*⁹ shows that 98 per cent of the low voltage network has enough spare capacity to meet all forecast peak demand growth for the foreseeable future.

The report also concluded that the network congestion data used by Ergon in its tariff proposal overstates congestion by a factor of approximately 375. The scale of this pricing distortion adding up to \$1.8 billion over five years. QFF understands that the situation facing regional Queenslanders getting

⁵ Queensland Productivity Commission. (2016). Draft Report: Electricity Pricing Inquiry. February 2016.

⁶ IBISWorld. (2015). Profile Company Report: Ergon Energy Corporation Limited.

⁷ Queensland Competition Authority, Regulated retail electricity prices for 2015-16, June 2015.

⁸ Sapere. (2016). *Errors in Australian Energy Regulator's Draft Decision on Ergon Energy's 2016 Tariff Structure Statement*, November 2016. Commissioned by Canegrowers. Launched on 15 February 2017. See <http://files.canegrowers.com.au/queensland/web-CANEGROWERS-Sapere-Report-Launch-document.pdf>

⁹ Ergon Energy (2016). Distribution Annual Planning Report. DAPR covers a five year period from 2016-17 to 2020-21. See <https://www.ergon.com.au/network/network-management/future-investment/distribution-annual-planning-report>

their power from Ergon is not an isolated example. The same flawed approaches are being applied to Energex (also in Queensland) and in other parts of the NEM.

In January 2016, Professor Ross Garnaut released a paper¹⁰ stating that “forcing high network charges on consumers in the face of declining use of the grid would impose a bigger penalty on consumers and businesses than a consumption tax, or even a carbon price. Metrics including the falling cost of renewables, reduced demand levels, should be applied to network assets to ensure that the network was priced properly...and the first step towards rational pricing is to write down the value of redundant grid capacity”.

Future Tariffs

Future network pricing structures must introduce incentives for efficient investment in the grid into the future, which is commonly accepted to be an economically efficient pricing structure that charges mainly for the use of peak capacity, and avoids purely fixed charges for access to the grid. There must be due consideration and investigation into the mechanisms for encouraging farms to maintain their grid connection into the future whilst still encouraging the efficient use of decentralised power generation (including but not limited to solar and diesel) and storage to minimise overall costs of using power (particularly peak); whilst also reducing the network costs associated with supply peak demand.

Current demand-side tariffs simply focus on peak use from individual users, rather than network peaks, signifying that they are more about revenue security for the network provider than economically efficient tariff structures. This conclusion is strongly supported in the analysis within the Sapere Report⁹.

QFF suggests the formulation/design and communication of new tariffs (for all users) which promote a balance between centralised and decentralised power supply for regional areas that reduces overall costs for both users and the network supplier. Tariff design must also take into account the wider policy opportunities for minimizing unintended consequences or negative behaviours which would undermine the reduction of greenhouse gas emissions, ensuring a reliable energy supply, and its impact on economic activity (energy markets and their regulation). There is customer uncertainty regarding the initial impacts of demand-tariffs, many of which are anticipated to be negative.

QFF also has a number of concerns regarding the proposed 2020 timeframe for the phasing out of transitional and obsolete tariffs in Queensland, most notably that over 35,500 regional electricity connections are still on these tariffs.

QFF has dealt directly with a number of farmers across a range of industries who did not understand the information provided on energy bills, or how to interpret this information to their benefit. Some parts of regional industries will remain highly vulnerable to electricity prices with the removal of legacy transitional and obsolete tariffs.

QFF understands that a customer is vulnerable when they are at risk of experiencing significant financial stress due to a moderate increase in their energy bills, due to their own personal financial circumstances. Such financial stress may result in a customer missing one or a number of bill payments. It is important to realise that a customer’s personal financial circumstances are likely to change over time, and so any individual customer may move in and out of our concept of vulnerability over their life. Similarly, vulnerability is not a binary condition – a customer is not simply ‘vulnerable’ or ‘not vulnerable’. Rather, vulnerability is more accurately a continuum, where the degree of vulnerability increases with the financial stress which is caused by changes in energy costs.

¹⁰ Garnaut, R. (2016). Australia after Paris: Will we use our potential to be the energy super-power of the low-carbon world? Public lecture hosted by the Young Energy Professionals, State Theatre Centre of Western Australia, Perth 21 January 2016.

It is also worth noting that for agricultural customers, many are ‘asset rich’ but depending on commodity sector and time of year, may be considerable cash flow constrained. Many agricultural businesses do not have regular or predictable cash flows.

The lack of phone and data coverage and reliable service in many of Queensland’s regional areas can increase customers’ vulnerability due to decreased opportunity for communication with retailers. These customers have less access to information and fewer technology opportunities such as ‘smart metering’.

Farms and other businesses can be both the (family) home as well as work. As such, individuals cannot escape or detach from the issues. Agricultural and farming businesses are also experiencing increasing periods of vulnerability due to changing weather patterns.

The Queensland Productivity Commission’s Draft Report acknowledged that some parts of regional industries will remain highly vulnerable to electricity prices with the removal of legacy transitional and obsolete tariffs; and, furthermore, “that the terms of reference specifically consider the electricity concessions framework, noting that electricity rebates are inefficiently targeted and do not assist the most vulnerable customers”.

Chapter 3: The Transition to a Low Emissions Economy

QFF requests that the Report consider further sources of power beyond electricity, particularly where other fuels and energy types may be substituted for electrical power.

For example, in November 2016, QFF welcomed the Queensland Renewable Energy Expert Panel’s recommendation that the ‘target’ should be applied to the electricity generation sector (see section ‘4.1.1. What should be included in the target: Energy sector or electricity generation sector’¹¹). The Panel notes that their ‘Terms of Reference’ specifically requires them to provide advice on whether the renewable energy target should be limited to the electricity sector or be applied more broadly; and a broader target might include fuels used in the generation of electricity, transport, on agriculture, manufacturing, construction, mining and other sectors. This approach would capture the use of renewables in electricity generation (e.g. solar, wind, hydro and biomass), transport (e.g. biofuels) and other forms of stationary energy (e.g. industrial heat and LNG production).

Section 17 of the *Renewable Energy (Electricity) Act 2000 (Cth)* identifies eligible energy sources for renewables including several agricultural wastes and by-products from agri-processing activities.

Many farm businesses have already installed considerable PV capacity. This capacity is behind the meter and not included in the target. In addition, farms are unable to export this renewable energy to the grid/network where excessive administrative or financial barriers are used to ensure this power does not benefit others within the network.

The Queensland Government has a vision for a \$1 billion sustainable and export-oriented industrial biotechnology and bioproducts sector. The Queensland BioFutures 10-Year Roadmap and Action Plan¹² sets out a pathway to achieve this goal, including the BioFutures Acceleration Program, which has the specific aim to attract and support the development of new biorefinery projects within Queensland. This is supported by the current Bioethanol Mandate (noting the recommendation of the Productivity Commission’s Draft Report into the Regulation of Australian Agriculture to remove this provision). As

¹¹ Queensland Renewable Energy Expert Panel. (2016). Draft Report: Credible Pathways to a 50% Renewable Energy Target for Queensland (October 2016). See <http://www.Queenslandrepanel.com.au/draft-report>

¹² Queensland Government. (2016). Advance Queensland BioFutures 10 Year Roadmap and Action Plan. See <https://www.statedevelopment.Queensland.gov.au/industry-development/biofutures.html>

policies and incentives move this agenda, it is likely that some potential renewable energy materials (agricultural wastes in particular) will transfer opportunity from domestic renewable energy generation to the manufacture and export of biofuels for example. This market change is already occurring in the cane industry, where cane trash which has been traditionally used as a fuel at the sugar mills to offset a proportion of the processing energy is being diverted towards future biorefinery contracts.

Further policy development must clearly align the relationship between renewable energy, biofuels and the broader energy strategy.

The agricultural sector supports decarbonising the economy and managing climate change impacts but acknowledges the lack of coherent policy and a lack of connection to the broader energy agenda. Investment and meaningful research has been hindered due to policy instability and uncertainty driven by numerous reviews into the renewable energy target and the lack of clarity about the policies to reduce emissions after 2020.

The agricultural sector continues to undertake research on addressing the water-energy nexus. Addressing water and energy efficiency together can lead to substantial cost-effective savings. These increased efficiencies have multiple benefits including mitigating climate impacts and increasing the agricultural sector's resilience, allowing farm businesses to better manage acute stressors like drought as well as chronic stressors such as high energy and water bills.

The sector is striving to better understand the connection between climate change and the water-energy nexus and how efforts to increase efficiency in both energy and water end uses can increase the sector's resilience. Climate change is continuing to affect water availability and put new stresses on energy systems (particularly in constrained areas) but the degree of impact is uncertain. Further research is needed on efficient technological solutions and policies to support uptake of these solutions. The research must document how efficiency in energy and water end uses can reduce the sector's exposure to acute and chronic stressors, including high utility bills.

Chapter 4: Integration of Variable Renewable Electricity

QFF supports the continued adoption of renewable energy and the Queensland Government's agenda to decarbonize the economy where it makes social and economic sense to do so. QFF notes the Queensland Government's investigation into a 50 per cent renewable energy target for the state, no doubt in part, a substitution for direct action on a price for carbon.

QFF notes the Report's emphasis on the urgent need for further gas supply. Gas has the potential to smooth the transition to a lower emissions electricity sector and provides the synchronous operation that is key to maintaining technical operability with increased renewable generation until new technologies are available and cost-effective. Furthermore, gas is dispatchable when required.

The need for greater gas supplies for electricity generation is increasingly urgent. However, QFF is aware that the gas fired power stations in Queensland are either significantly under-utilized or are not currently operating in any capacity due to the supply issues associated with domestically sourced gas reserves. This is in line with the report that notes, however, that gas-fired generation has fallen in recent years, finding:

A reduction in gas-fired generation capacity has implications for the security and reliability of the power system, due to the loss of its contribution to ancillary services and its ability to be rapidly dispatched to meet increases in demand or shortfalls in supply. These services are especially important at times of peak demand and low or fluctuating renewable generation.

QFF notes the release of Department of Natural Resources and Mines 'Queensland Gas Supply and Demand Action Plan: Discussion Paper (November 2016)'. This paper seeks to develop a strategy for maximising gas exploration, extraction and yields across Queensland, ring-fencing some of this gas for domestic use only in an effort to maintain domestic supply and control prices.

QFF did respond to this paper noting that whilst the agricultural sector acknowledged the role of the CSG industry in regional Queensland, the issues surrounding coexistence continue to be debated. While there is always a perceived tension between development and the protection of high quality agricultural land and the environment, the paper appeared to provide undue weighting for gas industry development, particularly where scientific evidence and precedent does not exist with regards to extraction of new gas fields and its impact on environmental soil and water values.

The recent events in South Australia have placed a degree of perceived urgency on maintaining energy security. QFF notes that Queensland's transmission provider, Powerlink, and ElectraNet are proposing a new Queensland to South Australia Interconnector.

Powerlink is proposing that the RIT-T consultation process be completed by the end of 2017, with energisation of any new interconnection possibly as early as 2022. As this project could be largely completed by the end of Powerlink's 2018-22 regulatory period, it is considered reasonable that these recent developments, which reflect the industry's response to customer and consumer concerns, be accommodated as a contingent project in Powerlink's Revised Revenue Proposal submitted to the AER in December 2016.

The Queensland to South Australia Interconnection (Queensland Component) option would require Powerlink to establish new 330kV switch-bays at Powerlink's Bulli Creek Substation and construct approximately 100km of new 330kV double circuit line from Bulli Creek to the Queensland / NSW border area west of Goondiwindi. The proposed contingent project is estimated to cost approximately \$120 million. It does not include any costs for works outside Queensland.

QFF understands that the RIT-T applies to investments in new electricity transmission assets in the NEM where the estimated capital cost exceeds \$6 million, subject to certain exceptions. It seeks to ensure that networks consider all viable options, in consultation with stakeholders, before erecting more poles and wires (for example, demand management alternatives).

QFF is aware that the RIT-T is currently under review, running in parallel to this review of the NEM, and ahead of the review of emissions reductions policies in 2017. It is important that the RIT-T process reflects the decisions taken about the strategic direction of the NEM under a broader post-2017 policy framework.

Until the review of the RIT-T is completed, it is unclear if RIT-T remains the appropriate assessment of strategic interconnection for the development of a truly national, efficient interconnected NEM and therefore will provide appropriate assessment for the contingent project (Interconnector) proposed by Powerlink in its Revised Revenue Proposal.

When properly implemented, regulatory tools such as the RIT-T are an important part of such an approach which should permit for proper assessment and scrutiny of proposals. Whilst QFF acknowledges the issues arising out of the South Australian blackout, the sense of urgency surrounding recent events must not be used to hurry decisions about significant investments that will impact electricity prices for the forecast life of the asset, which could be in excess of 50 years.

With the increasing rate of technological change and associated market development (and rule changes) which will be necessary, alternatives that involve less long-lived capital investment may provide the

required flexibility that deliver the required level of network services (including reliability) at a cost acceptable to consumers for the service they receive.

Should the Queensland to South Australia Interconnection proceed, QFF recommends consideration of a contestable interconnector service provision which could require some independent functions to be established, to enable Powerlink and others to compete fairly.

One approach could be a requirement for Powerlink to assign an independent technically qualified party to conduct the tender process and select a service provider. The National Electricity Rules would need to provide principles to ensure a fair and accountable process. Once a service provider has been selected and commercial terms settled for the provision of the service, then Powerlink would assume contractual and network pricing responsibilities for the interconnector.

A contestable framework for the provision of interconnector augmentation can be practically implemented and may ensure that future infrastructure is designed, constructed and operated at the lowest possible cost to customers.

Chapter 5: Market Design to Support Security and Reliability

Farmers make immediate choices in response to shocks and longer term decisions based on their expectations. Part of these expectations depends on prospects for transition to new energy sources and the impact of government choices with respect to tariff design.

The Queensland Government must be agreeable to be more interventionist as it seeks to resolve tensions in the energy sector but, as it does so, it faces great challenges with regard to policy coherence. Input prices provide valuable information for the formulation of government policies and programs aimed at promoting efficiency, stability, growth, and equity in the agricultural sector. Energy costs are of utmost concern not just to farmers, but to consumers who face these costs embedded in the price of their food.

QFF recognises that network assets are very long-life assets and the consequences of under-building assets can be catastrophic; and that there is a genuine need to replace ageing infrastructure. However, regulatory decisions and overinvestment in both generation and distribution infrastructure have been based on incorrect forecasts of rising demand; despite demand actually falling and all indications that it may fall further, particularly as larger users leave the grid. QFF recognizes that while grid connections are not always reliable in rural and remote areas, they do provide 'back-up' power for farmers, their families and the broader community.

A significant issue for agribusinesses, particularly processing, is the reliability of supply. Stakeholder feedback to QFF has highlighted the decreasing electricity-grid reliability experienced by many farmers and ancillary activities, such as processing and pumping of water. In some regional areas, reliability has been an ongoing issue and, in some case, it is decreasing. 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.

This factor is further informing decisions to go off-grid and impacting the long-term viability of the electrical distribution network in these regional areas particularly as distributed energy storage opportunities present (energy storage device that is located on a customer's premise and behind the customer's meter). Security and reliability have historically been a significant driver in electricity prices in Queensland. While customers highly value reliability, they may not wish to pay for this; and with the increasing commerciality of off-grid generation technologies, the decision-making process to move off-grid for some is becoming more rationalised and more attractive.

Modelling undertaken by Energeia¹³ has concluded that around 40 small towns, particularly those at the edge of the grid, will find it more cost effective within a few years to cut the main link and provide the power with local generation – principally solar and battery storage. A growing number of larger, regional towns will fit this category by 2025, subject to amendments to regulation to allow the true cost to be reflected. One of the biggest barriers to towns leaving the grid is the cross-subsidy paid to provide networks to regional towns. This is particularly visible in Queensland where in the Ergon network, the average network costs alone to regional towns amount to around 20c/kWh⁴.

The network rules do not allow the operating models to allow localised solutions to develop with the existing network as its backbone. For example, businesses in regional areas are unable to ‘net-off’ their generation and use with nearby sites without full network and retails costs; or they may face regulatory, technical or financial barriers to connection. Solutions such as peer-to-peer trading may offer greater local network utilization and stability, and result in less sub-optimal options such as ‘do nothing’ or investigating independence from the grid. QFF can provide examples to illustrate these scenarios if required.

QFF does recognize the potential of a micro-grid model as a ‘safety net’ and cost-effective approach to increase the reliability of electricity supply above current grid levels and which can be accompanied by cost measure benefits of ‘local energy trading system’ – where utilities can provide customers with solar and storage and allow their output to be traded in a suburban network. Such approaches require significant changes in the way incumbent utilities (e.g. Ergon) manage their business models and will require networks to look to a more ‘distributed’ model, while the implications for centralised generation, and for retailers, will also be significant. As such, QFF suggests that there is significant opportunity for further investigation into the consequences for regional communities regarding these issues.

Technological change and access to cheap finance have enabled more opportunities for decentralised solar power generation and storage in batteries, and also diesel generation on many farms to reduce peak demand. This in turn reduces demand for investment in increased network capacity. QFF understands that while peak demand drives investment, aggregate demand is important for recovering costs because you recover over the total demand, and that determines prices. Energex for example, has previously noted that “deteriorating network utilisation as total energy consumption has moderated is forcing up network prices as the costs of providing, operating and maintaining the network are spread over a lower consumption base whilst maximum demand remains at record levels”¹⁴. The current policy approach attempts to use tariffs to achieve ‘actual’ change. However, this is a blunt instrument if not coupled with appropriately designed supply-side policy.

QFF believes that targeted and appropriate demand management strategies can solve the energy tri-lemma of affordability, reliability and sustainability

Chapter 6: Prices have Risen Substantially

QFF notes that electricity prices in Australia are higher than overseas jurisdictions¹⁵, disadvantaging our commodity exports on the global market and refers again to Attachment 1 (a communique from

¹³ Energeia. (2013). *Over the Edge: The Australian Outlook for Embedded Microgrids to 2027*.

¹⁴ Mr Darren Busine, Acting Chief Executive Officer, Energex Limited, Select Committee on Electricity Prices. Proof Committee Hansard, 3 October 2012, p. 27

¹⁵ CME. (2012). *Electricity Prices in Australia: An International Comparison. A Report to the Energy Users Association of Australia*.

Australia's Agricultural Industries Electricity Taskforce), which outlines some of the impacts to overall productivity.

To reiterate the points made on chapter 2 (pp. 5-6), there are about 42,000 electricity connections for businesses in Queensland's regional areas. Almost a third of regional business connections are on eight different tariffs classified as transitional or obsolete. Almost half of connections are for agricultural purposes. Specifically, for the transitional irrigation tariffs, (*based on the calculated bill impacts from the QCA and customer numbers from Energy Queensland*):

- Tariff 62 – over 50% of the 8,800 small customers would experience a significant bill increase, and 93.8% of the 290 large customers would be worse off.
- Tariff 65 – over 40% of the 4,900 small customers would be considerably worse off, and 98.4% of the 100 large customers.
- Tariff 66 – almost 30% of the 2,900 small customers would be considerably worse off, and 100% of the 100 large customers.

These bill increases are unsustainable.

Electricity costs are crippling the agribusiness sector and handicapping growth and innovation. In the past five years, Australia's food, fibre and foliage producers and value chain partners have been subject to exponential price increases. This is at a time when new production, processing and cold chain technology demands are increasing electrification.

This is encouraging businesses to exit from network electricity back to diesel, particularly in the irrigation and refrigeration sectors and is symptomatic of a systemic energy crisis in regional industry. For too long national energy policy and the energy industry has avoided addressing the special challenges presented by Australia's low density regional electricity loads. Action can no longer be delayed. In this regard, QFF urges the review to develop explicit strategic recommendations for regional and remote electricity supply.

Chapter 7: Energy Market Governance is Critical

QFF would like to formally record our concern with the broader framework and rules, including the role of the AER. QFF proposes that an examination of the way network companies present information in their submissions to the AER and the volume of material involved must be undertaken. The arrangement adopted in the NEM, known as the 'propose-respond' model, results in an imbalance in the current system, where network businesses propose their business case and the regulator is required to respond.

The 'propose-respond' arrangement creates a significant advantage for network (and distribution) businesses relative to the regulator, and effectively places the onus of proof on the regulator to demonstrate that the businesses' proposals are incorrect or flawed. While the AER is able to interrogate and question various aspects of network submissions during the pricing determinations, and seek information, the regulator is not free to set the agenda.

This process leaves the regulator constrained and enables network businesses to effectively inundate the regulator through the weight of material it provides. This weight of material also disadvantages consumers and organisations such as QFF who do not possess the resources to adequately review and respond to this material. As such, consumers (rightly or wrongly) place an additional expectation on the AER to provide clarity on the proposals, their decisions and to also answer any queries that arise, particularly where there is a range of conflicting views presented.

For example, QFF attended the Public Forum in Brisbane on 19 October at which the AER presented its draft decision on Powerlink's revenue proposal. It was clear from the evidence presented by the AER and from AER's Consumer Challenge Panel (CCP) members, that there is a fundamental 'disconnect' between the role and outcome from the CCP and the value which the AER places on that process. QFF notes that the AER appears to have ignored the information and views provided by its own CCP, and even at the meeting, the fundamental role of the AER was interpreted quite differently between the parties. For consumers, this is disappointing and increases concerns about the process in general. There was no clear path of 'truth' from the divergent assessments (of Powerlink's submission) which were presented.

We acknowledge that the AER engaged a consultant to review the effectiveness of the CCP initiative. It is disturbing that the AER expressed the opinion that the advice provided by the CCP did not substantially alter the matters or issues considered in their regulatory decision making and this was clearly evident during the public forum. This lack of a 'common pathway' adds additional resource requirements on energy consumers to undertake or seek further analysis and independent review of the AER's decision as well as the assessment provided by the CCP – a resource intensive process for any organisation.

While QFF acknowledges that there are wide variations in the relative strength of regulators and utilities, and divergent perceptions of how proactive or customer focused regulators such as the AER should be, the AER must respond to the assessment provided by their own CCP or any credible alternative assessments which may arise pertaining to any revenue proposal.

Concluding comments

Australia, particularly Queensland, is blessed with a surplus of every conceivable energy source and the technical and managerial human resources to capitalise on them. In today's globalised world, governments that do not recognise, leverage and exploit our energy comparative advantage are not acting in the best interests of taxpayers or the nation as a whole.

Governments must heed the recommendations from this review, reverse the unsustainable increase in electricity prices, and implement significant reform of the NEM. If COAG fails to act, the competitiveness of many agricultural industries will continue to be challenged and the future supply and value adding of Australian food and fibre will be severely impacted.

If you require further clarification or have questions about this submission, please contact Dr Georgina Davis on (07) 3837 4720 or email georgina@qff.org.au.

Yours sincerely

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