



Queensland Productivity Commission,  
PO Box 12112,  
George St,  
Qld, 4003

16-11-2015

Dear Commissioner,

**Re: Electricity Pricing In Queensland**

Cotton Australia is the peak body that represents Australia's 1200 cotton growers, of which approximately half farm in Queensland. Cotton Australia welcomes the opportunity to provide input into the Queensland Productivity Commission's (QPC) inquiry into Electricity Pricing in Queensland.

Over the past decade electricity pricing has become an issue of increasing importance for a large number of Queensland's cotton producers who have a significant reliance on electricity both to irrigate their crops, and process their cotton through the ginning stage.

Attached to this letter are a large number of submissions that Cotton Australia has made to organisations such as the Australian Senate, the Queensland Government, the Queensland Competition Authority (QCA), Ergon Energy and the Australian Energy Regulator.

In writing to the QPC it is not the intention of Cotton Australia to fully re-create these submissions, but to provide an overall summary of the key issues, and respond directly to a number of the questions raised by the QPC in its issues paper.

Cotton Australia sincerely apologises that it was unable to attend the QPC hearing in Toowoomba on November 12, but notes that it will be meeting with QPC staff on November 19. Cotton Australia would like to request an opportunity to brief Commissioner Woods.

Cotton Australia is an active member of the Queensland Farmers Federation (QFF), and endorses the submission to the inquiry made by QFF. However, to avoid any confusion, if there is any disparity between the views communicated by QFF and those provided directly by Cotton Australia, it is those provided directly by Cotton Australia that represent the views of the organisation.

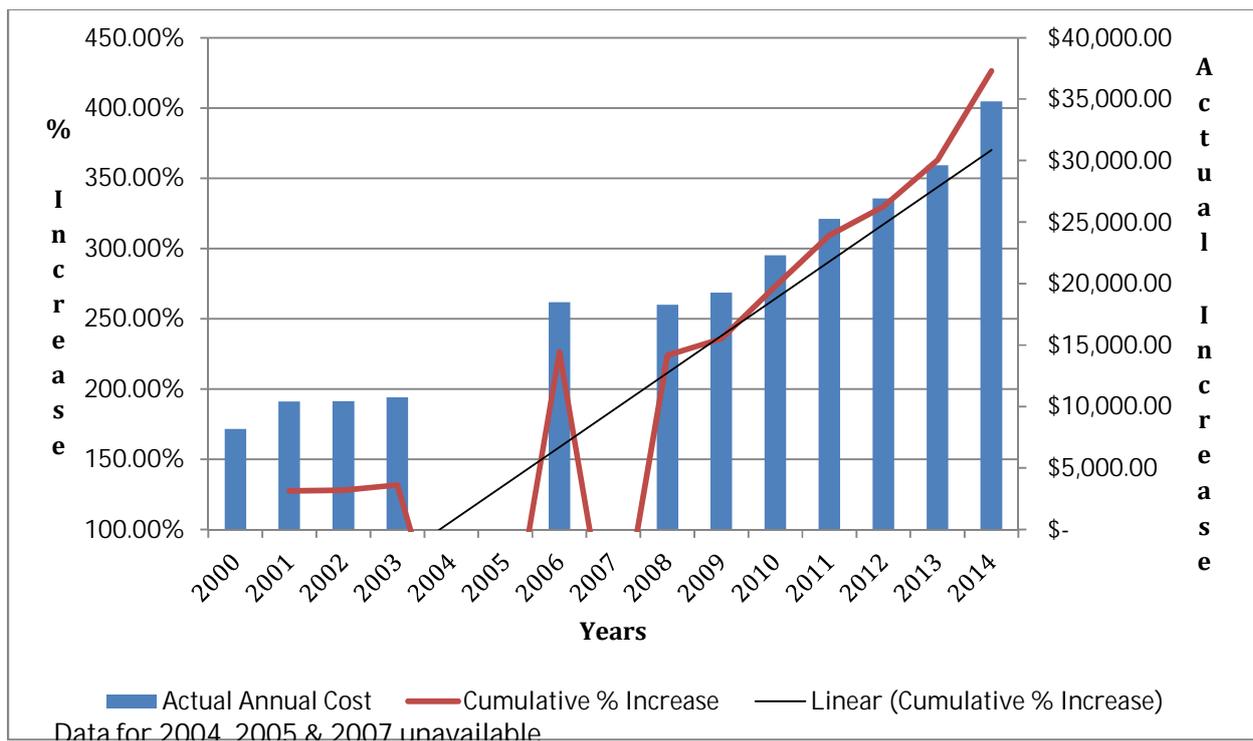
The following is a summary of the key issues that Cotton Australia would like to bring to the attention of the commission. Further details are contained in the documentation attached to this submission.

**Explosion in Electricity Costs**

Like all Queenslanders, cotton producers who rely on electricity for irrigation have experienced exponential increases in electricity prices over the last 15 years.

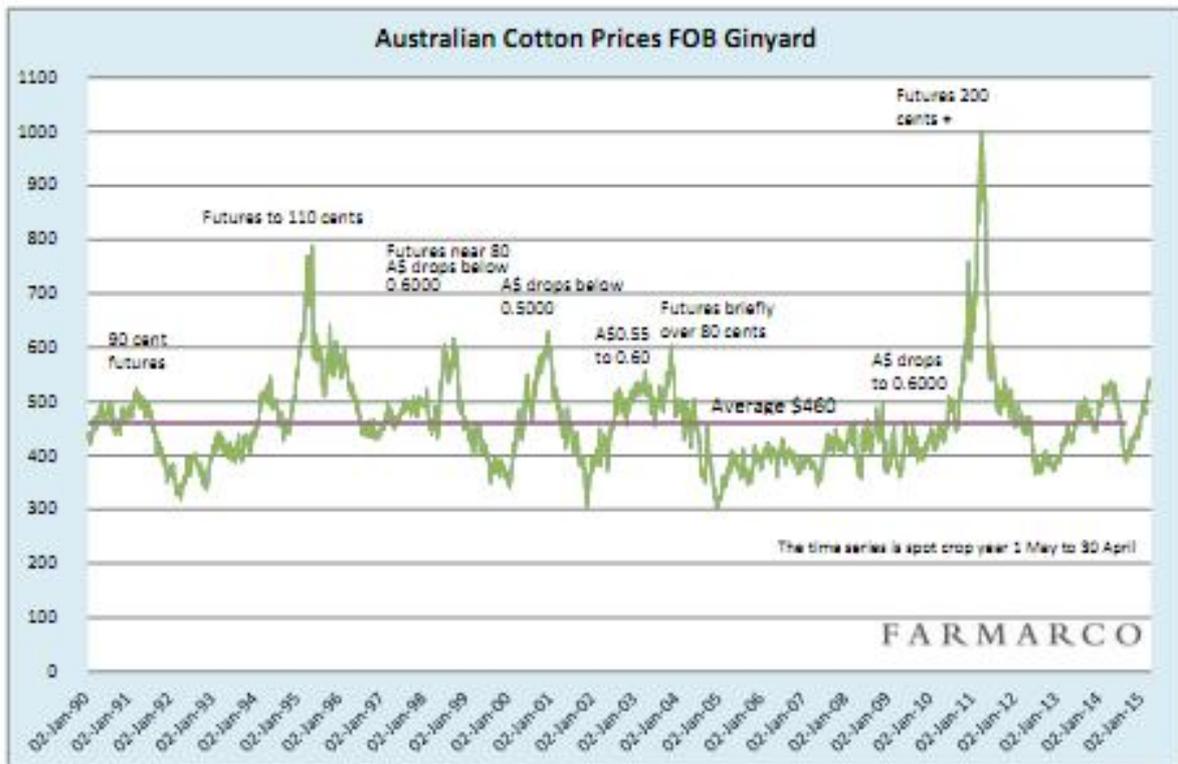
In some cases, irrigators have seen close to 300% increases in their electricity bills (adjusted for constant consumption). The following graph illustrates the exponential increase in electricity prices as demonstrated by the bills faced by an Emerald based cotton irrigator.

**Figure 1. Emerald irrigation electricity bill demonstrating the sharp increases in electricity prices (2000–2014)**



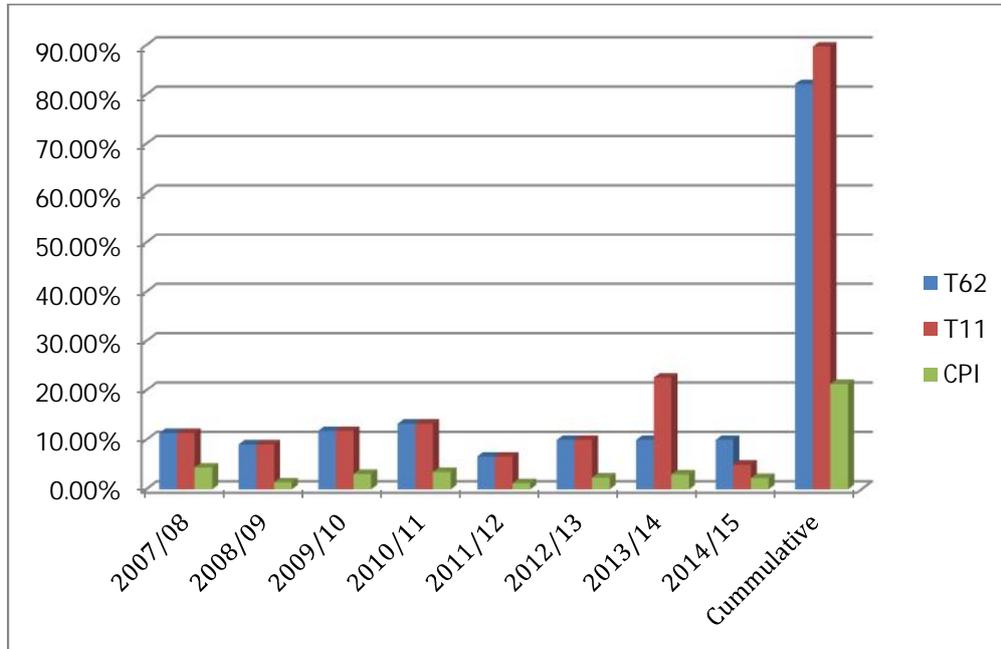
It is of interest to note that during this period the average price of cotton per bale received by the grower has only nominally shifted as illustrated in the following graph.

**Figure 2. Cotton price per bale (1990–2015)**



The increases in electricity prices is further illustrated by the following table which shows the average annual increase in the commonly used Ergon irrigation Tariff 62, compared to the standard domestic tariff 11 and CPI since 2007.

**Figure 3. Comparison of Ergon tariffs and CPI (2007–2015)**



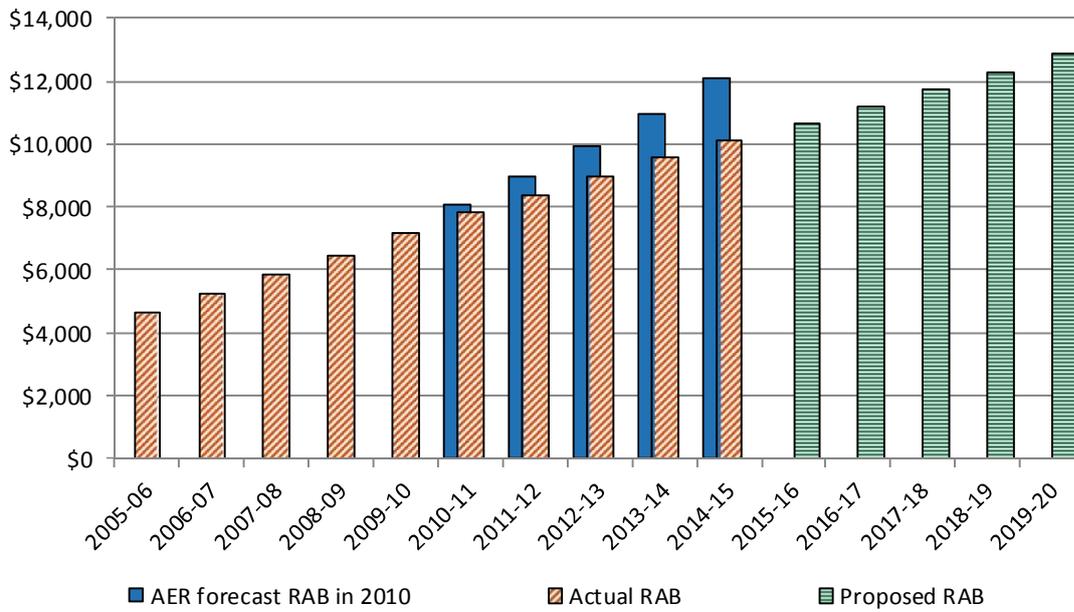
It is clear that over this period electricity prices for both domestic users and irrigators have significantly and consistently increased at a rate well in excess of CPI.

Over the past five years Cotton Australia has devoted considerable resources to firstly trying to understand the Australian and Queensland electricity market, and contributing through various policy discussions and review processes in an attempt to bring down the cost of electricity for all Queensland users, but in particular irrigators.

It has become clear to Cotton Australia that the most significant driver for increase costs has been the upward spiral of network charges, which in many cases account for 50–60% of an irrigator’s bill. However, there have also been substantial contributions from the increase in “green” costs including the solar feed-in tariffs, and retail costs.

As documented in detail in the attachments included with this submission, Cotton Australia is particularly concerned with the ever growing Regulated Asset Base (RAB) of Ergon as illustrated in the following graph.

**Figure 4. Regulated Asset Based for Ergon (2005–2014) and forecasted growth (2015–2020)**

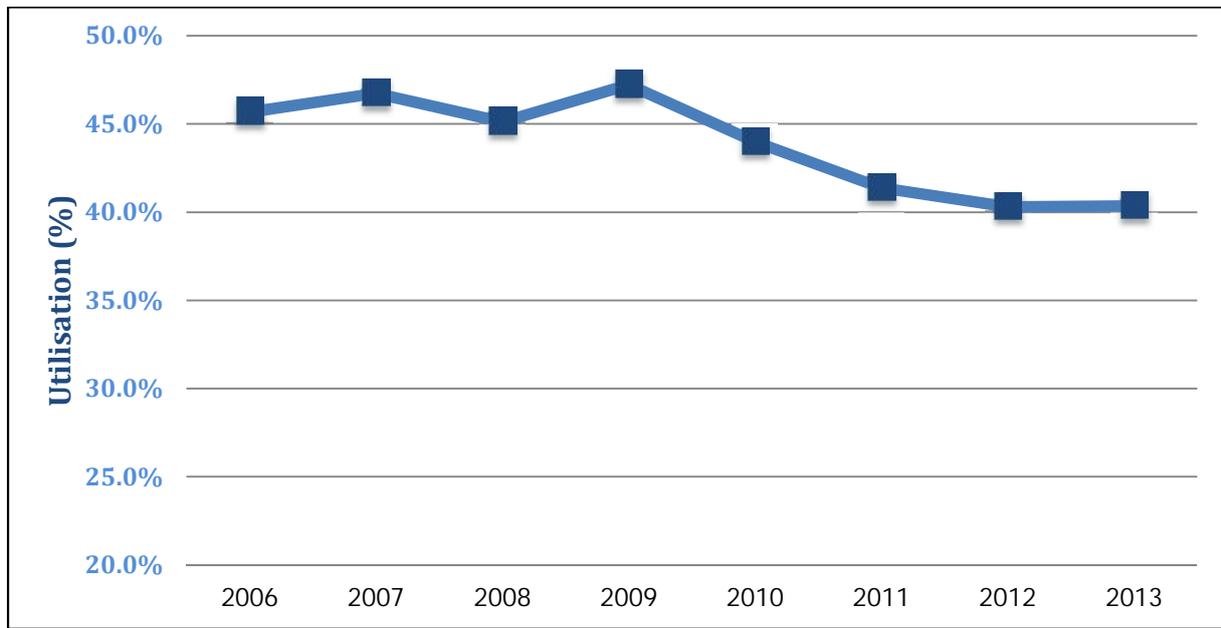


Source – AER Qld Determination Issues Paper

This ongoing major growth in RAB, underpins a significant proportion of the increases in networks charge, as the Weighted Average Cost of Capital (WACC) is applied to the RAB.

The ridiculousness of the situation is highlighted by the following graph which illustrates the declining nature of Ergon's system utilisation. In summary, consumers, including irrigators, are being forced to pay more and more for a growing network, which is being used less and less.

Figure 5. Ergon system utilization (2006–2013)



Source – Hugh Grant, Qld AER Determination(Consumer Challenge Panel)

In addition to the combined impact of the WACC and the RAB, Cotton Australia has demonstrated significant concerns around the efficiency of operating costs of the network, as demonstrated by our submissions to the AER.

Two other cost drivers deserve special mention.

The application of the 5% Headroom Charge to Ergon Tariffs by the QCA defies all logic. The purpose of the “headroom” charge is to provide retailers with a buffer so they can offer “discounts”, and therefore stimulate competition.

This is a bit like a supermarket being allowed (by a government regulator) to inflate their prices one day, so they can offer “sale” the next.

Competition should be stimulated by the retailers, in this case, identifying and implementing operational savings, and then passing those savings onto consumers.

In Ergon’s case the argument for the “headroom” charge is even more ridiculous because there is no retail competition, and therefore the “headroom” charge is nothing more than a direct contribution to Ergon’s profits.

The solar feed tariff is also a major cost driver being paid for by Queensland network supplied electricity users.

Cotton Australia has very significant concerns regarding the justification of the original Solar Bonus Scheme (and indeed the ongoing solar feed-in tariffs), believing the “Bonus” represented a government

policy and therefore should have been paid out of Consolidated Revenue, rather than by those who remain fully reliant on network supplied electricity.

We now have the unsustainable situation where those enjoying the benefit of the Solar Bonus, are contributing to the falling system utilisation, leaving it to the remaining consumers not only to fund increased network charges that result from falling utilisation, but also to fund the bonus.

### **Typical Cotton Irrigator Electricity Use Profiles**

Electricity use among cotton growers varies enormously. This ranges from irrigators relying solely on either electricity or diesel for their energy use, a combination of both or incorporation of alternative energy sources.

To assist with understanding the use of electricity by irrigators, the following provides a number of broad irrigator energy profiles.

**Large Users:** Typically, these are larger users with a high reliance on supplemented, unsupplemented and overland irrigation flows. When water is available in the river at levels that satisfy all water licence requirements, irrigators activate their pumps, and will pump 24hrs a day, seven days per week while the water is available.

However, the reality is that months, and sometimes years, may pass with no pumping. When pumping does occur is activated it may be for as little as a day, could extend to several days or even weeks, but is unlikely to extend to a month of continuous pumping.

Typically such irrigators use large capacity pumps, which have relatively high electricity requirements.

Their usage profile can be summarised as a relatively high demand requirement that is highly climate dependant, and exhibits episodic usage.

This user profile is greatly impacted by the move towards demand based tariffs.

**24hr Users:** Typically these are users with smaller water licences than the larger users described above, who use electricity not only to draw water from their primary source be it river, bore or overland flow, but may also use electricity to power irrigation systems such as drip irrigation, centre pivot irrigators or recycling pumps.

When they pump, they tend to pump for 24hr periods, and their usage is a little more predictable than the large users describe above, but still with significant variability, primarily related to seasonal conditions.

Their usage profile can be summarised as a medium demand requirement, broadly predictable, but still subject to significant climate induced variability.

**Off-Peak:** Usage is similar to the 24 Hour users described above, except these users have invested in higher capacity infrastructure, allowing them to operate primarily during off-peak/shoulder periods, such as nights and weekends.

Their usage profile can be summarised as having a higher peak demand per hectare irrigated (when compared with 24hr users), broadly predictable, but subject to significant climate induced variability and a high preference for off-peak/shoulder use.

Off-peak usage is also favoured by many growers for their recycling pumps.

It is imperative that suitable tariffs that reflect the above usage patterns are available to irrigators. All irrigators should have access to volume based tariffs, with significant incentive provided to growers to access off-peak power.

### **Cotton Gins**

Cotton gins tend to run reasonably consistently through the ginning season (March/April through to August/September), often, but not always 24 hours per day, seven days per week. Due to the ongoing and predictable electricity use of gins “demand charge” based tariffs do not have the severe negative impacts that they have on larger irrigator users as they are able to spread costs over a significantly longer period.

However, Table 1 demonstrates the massive impact that “site specific demand charges” that are being discussed, would have on ginning costs. There is no doubt that if these charges were imposed on ginners, these would be passed directly back on to growers, further impacting on grower profitability, over and above the increases in electricity charges currently borne by irrigators.

**Table 1. Impact of site specific demand charges on cotton ginning electricity charges.**

<b>Gins</b>	<b>Current Retail Tariff</b>	<b>Forecast 2012-13 Bill (Current Tariff)</b>	<b>Forecast 2012-13 Bill (Site Specific Tariff)</b>	<b>Change in Bill</b>	<b>% Increase</b>
1	48	\$600,411	\$1,202,162	\$601,750	110
2	48	\$588,864	\$1,445,070	\$856,206	145
3	48	\$271,882	\$819,422	\$547,540	201
4	48	\$554,198	\$1,387,192	\$832,994	150

### **Catastrophic Impact of Demand Based Tariffs for Flood Harvesters**

As discussed earlier in this paper, Queensland cotton producing irrigators face the same fundamental problem as all Queensland network supplied electricity users face, a crippling increase in electricity costs.





Date	kWh	44	45	46	62	% Night	kWh/day	Days	Current Tariff	62	
21/09/2012	3251	\$ 56,280.99	\$ 50,351.89	\$ 49,744.51	\$ 584.34	87%	37.80	86	Possible Savings		
27/08/2012	39942	\$ 99,336.55	\$ 88,291.08	\$ 86,458.90	\$ 11,055.18	36%	434.15	92	44	-\$ 283,617.57	-67.2%
27/03/2012	435054	\$ 150,065.83	\$ 138,505.08	\$ 136,562.81	\$ 97,041.59	48%	4404.37	97	45	-\$ 243,416.11	-63.8%
21/12/2011	139010	\$ 116,053.72	\$ 104,387.81	\$ 102,438.57	\$ 28,458.42	59%	1448.02	96	46	-\$ 237,113.06	-63.2%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
16/09/2011	0	\$ -	\$ -	\$ -	\$ -	0%	0.00	0	-	-	0.0%
Low Voltage	618157	\$ 421,737.09	\$ 381,535.63	\$ 375,232.59	\$ 138,119.53		Average 534.53	371		855.50 Average	

\* Please check the tariff conditions to ensure that you understand, accept and agree to those conditions.

Demand kWh  
952.00 Maximum

	Current	Tariff Options					
	Tariff 62	Tariff 20L	Tariff 22L	Tariff 44	Tariff 45	Tariff 46	Tariff 66
Bill 1	\$ 13,621.02	\$ 13,745.87	\$ 14,208.79	\$ 80,761.13	\$ 74,871.71	\$ 74,184.90	\$ 35,967.55
Bill 2	\$ 54,570.98	\$ 71,991.58	\$ 61,083.01	\$ 134,583.37	\$ 125,205.12	\$ 123,262.58	\$ 67,380.46
Bill 3	\$ 110,722.72	\$ 143,957.94	\$ 127,139.40	\$ 107,813.09	\$ 103,575.49	\$ 103,425.98	\$ 104,209.59
Bill 4	\$ 101,315.77	\$ 127,305.49	\$ 116,525.48	\$ 175,691.92	\$ 164,094.12	\$ 161,407.28	\$ 98,182.51
Bill 5							
Bill 6							
Bill 7							
Bill 8							
Bill 9							
Bill 10							
Bill 11							
Bill 12							
Totals	\$ 280,230.49	\$ 357,000.87	\$ 318,956.67	\$ 498,849.50	\$ 467,746.44	\$ 462,280.74	\$ 305,740.11

It is in no way an exaggeration to say that if these users are forced onto demand based tariff charges, they will exit the grid and switch to an alternative energy source, the most likely at this stage being diesel, although developments in technologies such as solar and battery storage will open up other alternatives.

The new seasonal time-of use tariffs introduced by Ergon, do not rectify this problem, as pumping events while not limited to summer months do occur over summer months. Therefore, irrigators will still be subject to excessive “demand charges” when pumping opportunities occur over the summer months.

When a river pumping event is available an irrigator has no capacity to modify energy usage by choosing to pump only at specific times.

### Efficiency Opportunities

Cotton Australia accepts that there are significant opportunities for many irrigators to improve the efficiency of their electricity usage.

In some cases this can be achieved through better selection of existing tariffs, and greater use of off-peak opportunities, and in other cases through investment in improved infrastructure.

With this in mind Cotton Australia has been an active participant in a number of efficient programs including the Queensland Government funded Irrigator Energy Savers Program and the Energy Savers Plus program.

In addition to these programs Cotton Australia in partnership with the Cotton Research and Development Corporation and the CottonInfo team have devoted considerable resources into both energy efficiency research and extension.

However, while improved efficiency will offer tangible benefits to irrigators, it is not in itself an answer to the impacts of the numerous structural issues that have been outlined in this submission.

## **Solutions**

- Continued and on-going access to tariffs 62, 65 and 66 for existing irrigators, including those classified as “large energy users”. Access to these tariffs would be lost if the irrigator requested an increase in demand capacity or for new installations (except for replacing an installation with same capacity or less).
- Continuation of the Uniform Tariff Policy. Adoption of such concepts as Site Specific Demand charges would effectively signal the end of electricity use by industries west of the Great Dividing Range.
- Development of irrigator tariffs that provide significant incentive for off-peak pumping. Definition of off-peak should be as wide-as-possible, to encourage decreased network use at times when the network is genuinely constrained. It is extremely important to keep in mind that the utilisation of the Ergon network is less than 40%.
- Transfer of responsibility of Solar Bonus payments to Consolidated Revenue streams.
- Removal of the “Headroom” charge.
- A state government initiated review of Ergon’s Regulated Asset Base, that adjusts in line with the network utilisation, and consequently leads to a downwards adjustment in Ergon’s Allowed Revenue.

## **Response to Issue Paper Questions**

**2.1** Given the declining demand for network supplied electricity considerable effort should be invested in making electricity and network use more attractive, particularly to existing customers. Cotton Australia is very concerned that the combination of general price increases, and the move toward greater demand based charging is contributing greatly to the electricity “death spiral”.

While Cotton Australia understands the principle of “Peak” and “Off-Peak” pricing, it is concerned that the definition of “peak” is far too broad.

Cotton Australia points to the ongoing downward trend in system utilisation, which strongly suggests that existing capacity in the network is more than adequate for the vast amount of time during the year. “Peak” pricing should only be applied when the network is genuinely constrained.

With regards to the significant increase in alternative energy, which still requires access to the grid to export energy, or meet energy requirements at times of low alternative production, there should be a significant connection/access fee.

**2.2** There is significant opportunity to encourage energy efficiency. However, this in part exacerbates the challenge of having to maintain and fund a network while overall usage is declining. It is extremely important that electricity consumers are not saddled with additional costs for unnecessary network growth.

**2.3** While alternative energy should be supported, it is extremely important that the network remains the preferred way to distribute electricity. Battery storage has the very real potential to be a much more economical alternative for a whole range of electricity consumers. The future of an affordable grid depends on maximizing the number of users.

**2.9** Much more effort needs to be invested in determining the genuine demand requirements of the network. At the moment a very significant investment is being made to meet very small maximum peak demand periods. Higher network costs, much of which is associated with meeting these peaks, is a significant disincentive for electricity use, and therefore contributing to the “death spiral”.

While the networks have made some efforts to meet and manage peak demand in innovative ways, more must be done in this space. Rather than seeking greater prices for peak demands, the networks could offer significant discounts for shedding demand during these limited peak periods.

**2.11** Consumers should be educated on the cost/reliability trade-off. Naturally consumers would like a 100% reliable power supply. However, for many lower reliability would be acceptable if it resulted in significantly lower power costs.

**2.12** The use of new technologies should focus on ways to make the network more affordable, rather than as an alternative to the network. There is a very real risk that the network will end up being a provider of “last resort”, with the result being very high charges for those consumers who for whatever reason cannot access alternative energy sources.

**2.20** The Solar Bonus Scheme is the result of direct government policy decision and therefore should be funded out of the Consolidated Revenue stream. In addition, network charging should be reformed to

ensure those consumers exporting solar energy to the grid, or using the grid to access energy when solar production is low, pay a grid access charge that fairly reflects the service provided.

4.1 Cotton Australia is a strong supporter of the Uniform Tariff Policy. It believes that the provision of electricity is a basic right, and all Queensland residents should have access to affordable electricity for both domestic consumption and business. As evidenced earlier in this submission, if site specific tariffs were applied to businesses (such as cotton gins) it would significantly increase the cost of electricity, and be a major disincentive for businesses west of the Great Dividing Range, with the real possibility of making them uncompetitive. Cotton Australia does see that there is some possibility for specific areas, businesses or individuals to receive discounts on UTP tariffs, where they can demonstrate that their actions have significantly reduced the costs of providing electricity services. For example, if in a network constrained area, the cotton industry agreed to manage demand by balancing pumping and gin use during peak periods, and as a result significant new network expenditure was avoided, there should be an opportunity for the industry to directly benefit from those savings.

4.4 Cotton Australia believes that there is some opportunity for increased competition in regional areas, but not at the expense of the UTP.

4.9 Providing the UTP payments direct to Ergon Network, should allow for some competition at the retail level.

4.16 The percentage of electricity costs as overall irrigator input costs varies enormously. However, Cotton Australia does not accept any argument that may suggest that if the percentage input is low, then it is not an issue. Irrigators need all their inputs to be delivered at the most cost effective price possible.

4.17 As documented earlier in this submission Cotton Australia believes that the “transitional tariffs” should remain available to existing users while ever there maximum level of demand does not increase. If irrigators are forced onto demand based tariffs, they will simply leave the grid, resulting in increased capital expenditure for themselves and lower network utilisation.

4.18 While energy efficiency and demand management should be encouraged, they are not solutions to the removal of the transitional tariffs. Once irrigators are forced onto demand tariffs, they will exit the grid, and contribute to the “death spiral”.

ends

**Listed of Attachments (Emailed as separate documents)**

**Australian Government**

- Senate Inquiry into Electricity Networks
- Energy Green Paper

**Australian Energy Regulator**

- Submission to the AER on Ergon's Regulatory Proposal
- Submission on the Ergon Draft Determination
- Submission on Ergon's Revised Proposal

**Queensland Government**

- Submission to the 30-Year Electricity Strategy

**Queensland Competition Authority**

- Submission to QCA Transitional Issue paper 2012
- Response to Draft Prices 2013-14
- Initial Submission for 2014-15
- Response to the Draft Determination 2014-15
- Submission to Draft Determination for 2015-16

**Ergon Energy**

- Submission to the Ergon Tariff Review
- PowerPoint presentation to the Ergon Agricultural Forum