

18 October 2017

Productivity Commission  
Locked Bag 2, Collins St East  
Melbourne VIC 8003, Australia

**By email: [water.reform@pc.gov.au](mailto:water.reform@pc.gov.au)**

Dear Commissioner

### **Inquiry into National Water Reform**

Thank you for the opportunity to provide a submission in response to the draft report arising from the Commission's inquiry into National Water Reform. As a proud member of the Queensland Farmers Federation and the National Farmers Federation, CANEGROWERS provides this submission to both add to and support any submission made by both those organisations.

In the Terms of Reference (ToR) the Treasurer directed the Commission as part of its investigation to also consider, amongst other things:

- “broader water policy issues and the role of the NWI in improving outcomes, in particular:
  - the interaction of water policy with other policy areas such as energy, agriculture, planning, urban supply
  - whole-of-cycle water management
  - provision to regional, rural and remote communities, and
  - the economically efficient provision of water infrastructure.”

CANEGROWERS agrees with the Commission's assessment that matters directly related to energy policy (including energy prices) are beyond the scope of the inquiry. CANEGROWERS also agrees with the Commission's assessment that the extent to which the regulation of the irrigation sector influences the sector's ability to respond to changing costs (including energy prices) is within scope. In this context, it is concerning that energy is only dealt with in passing in the draft report with no critical consideration given to the water-energy nexus. Both water prices and energy prices influence irrigation decisions. It follows that the achievement of water use efficiency goals is significantly influenced by access to energy at current (and rising) pricing levels.

The connection between water and energy costs and policy settings for the efficient delivery of water is a major issue for irrigated agriculture. In the sugar industry, the cost of electricity to pump irrigation water is higher than the cost of the water itself. This emerging price dynamic is influencing investment decisions as the **attached** case studies illustrate.

It would be helpful if the report placed the use of agricultural irrigation water and the drivers of changes in usage patterns in context. Among other things, the Commission should report how much water and energy is used by irrigators, and how changing water and energy price relativities affected usage patterns in order to understand the impact rising energy prices has had on the NWI's water use efficiency (WUE) goal.

Delivering irrigation water requires significant on-farm investment in water delivery systems, farm layout, design of field profiles (some irrigation systems require laser levelling of fields, others require fields to be terraced), selection of irrigation system, selection of pumping technology and timing of water application.

Farm layout and field profiles are often designed to take advantage of gravity to move water. In most instances this does not negate the need for water to be pumped, powered by diesel, solar, grid supplied electricity or in an increasing number of cases a combination of technologies.

## **Water Use Efficiency and Irrigation**

### On-farm

Farmers care for their environment. In irrigated agriculture, efficient management of land and water resources is a pivotal driver of profitability. Minimising waste in the farming systems is as critical for farming businesses as it is for any other business. But, it is important to acknowledge that their irrigation decisions involve trade-offs.

Irrigation systems that use water efficiently are generally more energy intensive and expensive to operate than inefficient systems. In general, the most significant gains in water use efficiency occur when delivery systems are switched from open to closed. Examples include changing from running bulk water in open channels using gravity as the principal source of power to a system which uses pipes with pumps used to optimise flow rates. On farm water use efficiency initiatives might include trickle, drip or low pressure overhead pivot systems replacing gravity fed flood or high pressure overhead irrigation systems.

Investing in a water efficient system is a major on-farm business decision for irrigators. It usually means taking on additional maintenance and energy costs to operate the systems. It also increases the irrigator's exposure to energy prices. Essential elements of the decision are the capital cost of the new equipment and management system, projections regarding future cost and availability of water, the future cost of energy, the water savings that will be achieved, expected crop productivity gains, expectations around commodity prices, and the irrigator's own financial situation and risk appetite.

Australia's highly variable climate and rainfall patterns increase the uncertainty associated with the on-farm investments. Given the risks and uncertainties, it is not surprising that irrigators focus strongly on the private benefits and costs of their decision matrix. Although important, water use efficiency is only one component of the whole. In the context of rapidly rising energy prices, the economic efficiency of the total irrigation system is more important to the irrigator than a partial measure of water use efficiency. Within this context irrigators might rationally choose systems with lower water use efficiency to save on energy costs.

### Community Service Obligations

Governments and the community more generally have a wider perspective than private economic benefit from water use. In Australia water is an important scarce resource required to meet a range of productive, environmental and social objectives. In broad terms, the productive uses of water delivers primarily private benefits and the environmental and social uses deliver public benefits.

However, the provision of water for irrigation purposes does not carry solely private benefits. Irrigation schemes contribute to the social and economic fabric of the regional communities they help sustain. Significant society wide benefits flow from economically vibrant regional economies built on irrigation schemes. It is important that their community service role as an

enabler of regional economic is taken into account by government when considering investment decisions and determining the private / public mix when calculating cost recovery contributions.

Where governments require businesses, private or public, to carry out activities that they would not otherwise do on a private basis for commercial gain those activities should be seen as activities intended to satisfy government objectives with the associated costs met by government in the form of a community service obligation (CSO) payment.

In the case of water, environmental and social uses are *bona fide* public benefit uses of water. The associated water infrastructure and operating costs are costs for government to bear. Where governments also seek on-farm water use efficiency targets to be met, in pursuit of NWI goals, the associated scheme and on-farm capital and operating costs, compared with those that would otherwise have been incurred as private costs, should also be borne by government.

It is important that the regulated water pricing framework is structured in a way that ensures private uses of water pay for no more than the prudent and efficient costs (renewables and operating) of delivering water.

Where assets are gifted or otherwise transferred from public to private management, it is important that the terms of the exchange take full account of any ongoing community service obligation and that government fully fund the CSO. Who will pay for what should be transparent to the community as a whole as well as to the direct beneficiaries of the assets, from the outset: retrospective changes must be avoided in the interests of both equity and efficiency.

#### Parliamentary Inquiry

CANEGROWERS notes the federal Parliamentary inquiry into Water Use Efficiency is due to report in December. Several submissions to that inquiry highlight the tensions between the different extractive uses of water in the quest to secure public benefits. A clear source of tension is the water-energy nexus and the growing incentive for irrigators to favour energy efficiency to the detriment of water use efficiency. Meanwhile the preliminary report of the ACCC Retail Electricity Pricing Inquiry shows that energy prices are unnecessarily high because government policy is failing and energy markets are operating inefficiently. Government policy settings must be better coordinated to ensure they deliver economically efficient outcomes and do not work in opposition to each other.

#### **Future Challenges**

Population growth and urbanisation; climate change; and changing community expectations are identified as the three key challenges facing the water sector that have emerged or intensified in the 13 years since the NWI was signed.

CANEGROWERS agrees with the Commission's assessment that these challenges need to be addressed in policy frameworks, including the NWI, "to ensure that policy frameworks are up to date and can continue to serve the Australian population into the future". We are surprised and perplexed that energy is not identified as an issue in meeting these challenges as clearly the relationship between these two critical policy issues is the other significant change since the formation of the NWI.

There are several reasons, clearly within scope of the investigation, why there needs to be a strong focus in the Commission's final report on how changing costs (including energy prices) influence the sector's ability to meet the challenges.

- Energy use in irrigated agriculture, and in water management more generally, is high. The price of delivered electricity is high and forecast to continue to increase.
- As noted above, for irrigation use, water efficient systems are generally more energy intensive than water inefficient systems. Irrigators must optimise across all farm inputs, not just water.
- Increasing energy costs may result in economically rational irrigators actually moving away from water efficient systems. Such a situation would clearly impede achievement of the NWI objective of increasing water use efficiency. The Productivity Commission report should acknowledge this threat to achievement of the NWI goals.
- By influencing demand for water, energy prices are increasingly influencing water trade. Regional differences in energy prices will influence patterns of water trade, and may hinder water moving to its highest value use if energy policy settings are flawed or at least not considered through the lens of interdependency to water policy.

## **Conclusion**

Significant community benefits flow from having vibrant regional communities and the NWI goals embody a range of other public benefits. These add scheme and on-farm capital and operating costs that would otherwise not have been incurred as private costs. The associated costs should be borne by government as a CSO payment.

Ongoing reform of the water market is important. Because both water and energy prices influence irrigation decisions, the drivers of water use efficiency cannot be properly assessed without critical consideration given to the water-energy nexus. Government policy settings must be better coordinated to ensure they deliver economically efficient outcomes and are not working in opposition to each other. The potential adverse flow on effect to water markets of energy markets not operating efficiently is clear, as is the risk to the NWI of inefficient energy markets.

Yours faithfully

Dan Galligan  
Chief Executive Officer

## Attachment

### Sugar Industry Case Studies

In the sugar industry, the cost of electricity to pump irrigation water is higher than the cost of the water itself. This emerging price dynamic is influencing investment decisions as these case studies illustrate.

Kelvin Griffin is a cane farmer at Bargara, near Bundaberg, on Queensland's central coast. The high cost of electricity was a key factor in his decision to invest \$100,000 in a solar system designed to power his farm's high-pressure irrigation pumps. To reduce their electricity costs, the family was irrigating off the head pressure on the SunWater system and using grid power sparingly on weekends or at night using cheaper tariffs. This approach however, was holding back their production and as electricity prices rose, production dropped by around 15% on the area which required high pressure irrigation.

In 2014, the family made the decision to move to solar powered high-pressure irrigation. The initial outlay was \$20,000 to install concrete slab bases for the solar panels. The system was completed over an eighteen-month period, with some changes along the way driven by the need to find the right technology.

The Griffins are confident of significant savings and a boost in production of 10% to 20% over the system's 25-year life. Had the family remained with the electricity grid and the ever-increasing cost of power, they would have faced a power bill of around \$35,000 to \$50,000, more than double the bill he now pays. Mr Griffin says he would have preferred to spend the \$100,000 on improving his farm layout and lifting over all cane production and productivity rather than investing it to generate electricity.

Also near Bundaberg, sugarcane grower Mr Allan Dingle uses electric powered pumps to water 110 hectares of his cane fields. The price of electricity to run those pumps has more than doubled over the past decade.

In 2007, the off-peak price of power on tariff 65 was 8.83c/kWh, the peak price was 16.04c/kWh and the service charge of just \$10.32 a month. Now, on that same tariff the off-peak rate is 20.321c/kWh, the peak rate is 36.894c/kWh and the service charge is \$23.73 a month. Mr Dingle asks, how is that justified?

Limited by the topography of his farm, Mr Dingle has installed soil moisture probes and taken other measures to improve his water use efficiency. He keeps a close eye on passing storms in making his irrigation decisions. Mr Dingle says I've had to lift my productivity, yet I'm seeing little evidence that Ergon is lifting its game.

Local irrigators' council representative and CANEGROWERS District Manager, Dale Hollis, is hearing about electricity price hikes right across the district. He says right now, irrigators have two options: switch off the pumps and go back to dryland cropping, or go off the grid and look at alternatives.

While some farmers now find it economical to install solar panels, many growers require power to irrigate at night. Although battery prices are falling, currently battery storage is more expensive than conventional diesel generation. Some irrigators, like Bundaberg Sugar which produces 220,000 tonnes of raw sugar every year, are returning to diesel pumps.

Simon Doyle, in charge of farm operations at Bundaberg Sugar, says it's already 30 per cent cheaper for Bundaberg Sugar to pump water with diesel than electricity, and electricity prices set to rise even higher in the future, that number will become even greater.

While Mr Doyle considers electricity is "cleaner, more user-friendly and probably more reliable. But it is becoming cost prohibitive." As he turns to alternatives to manage costs, he is concerned that abandoning the grid altogether will hurt his neighbours by increasing their prices.

Dean Cayley operates a 150 hectare farm in the Bundaberg district, Queensland. Although its predominately a sugarcane farm, it also produces peanuts and some of the land is leased to sweet potato production.

Mr Cayley mainly uses his irrigation systems from September through to April. In 2016 responding to ever increasing electricity costs (his power bill for the year was more than \$70,000), Mr Cayley invested more than \$200,000 on a new lateral move and associated equipment and delivery upgrades just to stay in business. This has reduced his power costs by around 50 per cent and lifted production by 25 per cent. Without this investment, Mr Cayley says he may have reduced the area of cane production and switched to higher risk small crops and macadamia nut trees.

With rising prices, the payback period is shorter. But the upfront capital cost is large. World sugar prices have fallen sharply this year. Unsustainable electricity prices are forcing farmers to cut back on the irrigation or turn off their pumps, just to stay afloat. They're not getting the best out of their crops. Everyone loses. Our incomes are down. With farmers not earning, they're not spending. That hits local towns hard, jobs are lost. The viability of the local sugar mill is put at risk and everyone suffers.

In eight years Australia has gone from having among the cheapest electricity in the world to among the most expensive. We are being forced to make investments that would not otherwise be needed. As exporters, we can't pass the electricity price hikes on to our customers. Our competitiveness in the world sugar market is at stake. If the electricity price spiral is not stopped, we simply must find a way to regain control of our costs.