Queensland Conservation

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Queensland Productivity Commission
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Queensland Conservation Council submission to the Public Inquiry into a Fair Price for Solar Exports

Queensland Conservation Council (QCC) is the peak environment organisation in Queensland. QCC represents over 60 environment organisations in the state and collectively supports hundreds of thousands of individuals concerned about the environment throughout Queensland. QCC is pleased to provide a submission to the Queensland Productivity Commission on the *Public Inquiry into a Fair Price for Solar Exports.*

We know that 90% of the community think it's smart to invest in renewable energy instead of coal. Over $2.8 billion has been invested in solar power and nearly 400,000 Queensland homes have solar panels on their rooftops. QCC believes that there needs to be a significant change in the way we look at energy to accommodate the needs of the future instead of relying on the old technologies of the past. The world is changing with storage for solar becoming every increasingly available.

QCC has concerns that the 2013 Queensland Competition Authority Inquiry into Solar Feed-In Tariffs seriously damaged the development of household rooftop solar power supply in Queensland and urge the Queensland Productivity Commission to consider this inquiry objectively.

QCC is also increasingly concerned about the continuation of heavy cross subsidies enjoyed by over half of the businesses in Queensland. The Commission has admitted these heavy cross subsidies will continue at least for the next decade and therefore any discussion about the solar feed-in tariff needs to both acknowledge this subsidy and consider this subsidy when considering any changes to the solar feed in tariff.

QCC believes that feed in tariffs that are properly designed and implemented offer the best opportunity to address the substantial market failures that exist in the NEM with respect to the cost-effective utilisation of solar PV. QCC is of the view that the future of the solar feed-in tariff is not about a 'subsidy' or an 'incentive' but how to remunerate the pure economic value of any solar electricity exported into the energy market.

Whether households and business are already fairly compensated for public and consumer benefits (such as renewable energy programs, rebates and market contracts?)

A salient feature of a Solar PV installation is the measure of energy conservation directly applicable as well as its usable energy output. Both energy conservation and energy efficiency are about using less energy, but energy conservation refers to behaviours that result in not using any energy at all. The speed of up-take in the Queensland residential sector of such technology has been truly astonishing. From less than 1000 to over 400,000 roofs in something short of five years with a resulting export to the grid of
power, some 1045GWh per annum from an additional 1328 MW of installed power is remarkable.

The QPC solar feed-in inquiry should recognise the resulting conservation of energy, from fossil fuel use – this is in the order of 6000 GWh per annum. This should be considered in any financial equation of the QPC. Furthermore, the provision of an estimated $2 billion[1] in householder capital outlayed to install solar PV panels means that it has enabled avoided costs to the Queensland Government and tax payer of business loan capital for the provision of additional fossil fuel powered power stations. These economic savings must be recognised and considered in any equations for a fair price for solar.

The usual business economic models generally are vastly different from those of ordinary householders who do not enjoy extremely favourable taxation regimes. Nor do they enjoy the considerable direct monetary financial subsidy that 10,000 businesses in Queensland also receive in their power bills. In 2013-2014 the value of this subsidy was to the tune of $130million.

The Queensland Residential Solar Roofs program is a useful demonstration of the interaction between government and householders as a base case demonstration in Energy Conservation.

The Public and Consumer benefits from exported solar PV generation, including social, economic and environmental benefits

The Energy Conservation industry is still embryonic with perhaps PV Solar Panels the exception. Even at this early stage of market development, the resources of the industry are under-utilised and subject to intense organised negative lobbying by entrenched interests. Because it is a fragmented young industry, it does not have the visibility or muscle of the fossil fuel derived energy supply industries such as coal, gas and oil. To combat the substantial resources of these sectors, successful development of energy conservation would require the provision of comparable resources and it is difficult to see how this could happen.

The case for development of Energy Conservation is strong in economic, political and social terms. The case is so strong that it is one of the few areas without opposition. Energy Conservation serves as an attack on inflation, job creation opportunities, a long term economic necessity and provides some solution of environmental problem

QCC is of the view that the energy market and Governments, together, are not allocating enough resources to energy conservation to achieve community long-term targets. A rationale, similar to that used by the energy supply industries could well provide both consumers and Governments, to further developed model investment strategies for energy conservation projects to meet these targets.

[1] This is based on 396,036 rooftops with installed capacity of 3kW at $5559.00 market value http://www.solarchoice.net.au/blog/what-size-solar-power-installation-should-you-buy/

In spite of this and even with the decisions impeding seeking to delay the rapid implementation of solar rooftop installations, the community has acted and wishes to continue acting in a responsible way. QCC believes that households under the present tax regimes are inadequately compensated.

Further to this, any fair price for solar exports much recognise three benefits that we believe have as yet not been acknowledged:

1. That solar PV panels substantially reduce the wholesale price of electricity for all consumers,
2. That the hidden externalities of relying on fossil fuel power has never been economically valued, and
3. The role that solar PV plays in reducing greenhouse gas emissions.

The externality cost, or 'damage cost', is calculated by multiplying a unitized cost of damage by an amount of pollution. Any discussion on pricing methodologies should include designing cost appropriate emission abatement subsidies. A fair value for feed-in tariff payments should include an externality cost of fossil fuel use. Solar PV should be recognised as providing a value to society that should be remunerated to solar PV producers for reducing net global warming and human health damages. Solar PV can save in the order of 3 tonnes of greenhouse gas emissions for every household, every year. Further considerations must then be given to additional values of solar PV energy such as the value of supporting longer-term innovation of solar PV.

Currently the cost of feed in tariffs is charged to the retail arm of the electricity supply industry. As mentioned previously, due to the poor performance of the rest of society to investment in energy conservation, this charge should be levied against generators and distributers as it was originally.

Any increase in the so-called Solar network charges to low income consumers can and should be dealt with under the state government billed rebate scheme. This should also include an allowance for the benefits of the energy conservation from Solar for such households.

Moreover, externality costs are not currently accounted for in market price. The costs of conventional fossil fuel use to the Queensland tax payer are outlined in the Queensland Budget papers (see Table 1 below). Table 1 demonstrates the expense borne by the Queensland taxpayer for capital expenditure on maintenance of large-scale fossil fuel power stations, this cost totals $2.15 billion for the 2015-16 financial year. By acknowledging external costs and giving them a tangible monetary value, externalities are internalised to the cost of production/consumption. Internalisation is thus a step towards holistic economic assessment of resource usage. In short, it designates a monetary cost to pollution.

Table 1: Capital expenditure for government owned energy corporations

Company	Projects	Type	Amount	Details
CS Energy Limited			$99.9million	capital expenditure program planned for 2015-16
	Callide	Coal	$33.9 million	including $24.8

	power station projects			million for overhaul work
	Kogan Creek power station projects	Coal	48.7 million	including $39 million for overhaul work
Stanwell Corporation Limited			$225.1 million	planned capital purchases for 2015-16
	Tarong Power Stations projects	Coal	$76.4 million	including $43.9 million for two major overhauls on Tarong Unit 4 and Tarong North
	Meandu Mine projects	Coal	$56 million	including $20.2 million for the replacement of mine fleet equipment, $7.1 million for mine exploration and development and $9.2 million for the Coal Handling Processing Plant replacements and upgrades
	Mica Creek Power Station projects	Gas	$11.8 million	including $7.2 million for the A6 overhaul
Energex			$634.3 million	the regulated electricity capital expenditure program for 2015-16
Ergon Energy Corporation			$864.4 million	capital expenditure for 2015-16
Powerlink Queensland is the high voltage electricity transmission entity for QLD			$323 million	budgeted capital expenditure for 2015-16
TOTAL			$ 2.15 billion	

Source: QLD Budget papers: Capital outlays by entity – Capital statement 2015-16
http://budget.qld.gov.au/budget-papers/documents/bp3-3-2015-16.pdf

There is a need to develop a specific Queensland externality accounting framework that addresses:

- Greenhouse gases and global warming are non-excludable and requires accounting for complex global ecological and social effects.
- Health impacts of pollution are often contingent to site location: population density, atmosphere (humidity, weather), fuel composition (for instance Australian coal is lower in sulfur than European coal), and height of flew stacks).
- Full life cycle assessments require a systemic view of technologies, entailing complex resource and production chains, as well as site specific environmental and human health effects.
- Applying monetary values to damages requires applying the relevant monetary value of abatement – such valuation may then become dependent on context (e.g. national health systems may charge more or less for health care; or the future value of externalities may change [i.e. discount rate]), or determined by ethics (e.g. what is the monetary value of human life or biodiversity)

Such a database should be a key energy policy resource for designing cost appropriate emission abatement subsidies.

The costs and benefits across the electricity supply chain due to the exported PV solar energy, taking into account temporal and location factors.

Time of day use of electricity has still to be dealt effectively within the current market. Sufficient evidence is however available to proportion somewhat electricity demands by sector and time of day. It is clear that substantial cross subsidies to large volume users exist. 10,000 business customers at least receive approx. $130 million in subsidies that must be addressed to ensure a level playing field for all energy participants.

The FIT should be paid by a mix of public, retailer and consumer money in reflection of the respective benefits of solar PV production accrued by these parties. By reducing net demand, retailers are thus less likely to deploy more expensive additional generation, reducing costs for all consumers. This benefit to consumers should therefore be remunerated to solar PV investors

As such, the market value of solar PV production is a surplus value, benefiting retailers and consumers, and should therefore be remunerated appropriately, rather than being seen as a deficit cost to be subsidized by consumers. The perception of electricity customers about whether any cost to them resulting from the fair value is “unreasonable”.

This question is typical of a point of view that any monetisation of solar power for small household generators represents an unfair application of technology, available to only a privileged few in society. Any reasonable examination of those householders that have taken up solar rooftop installations at some personal cost indicates they are mainly low and moderate income families adopting a “survival policy”.

Furthermore, any inquiry into solar feed-in tariffs cannot be isolated and a look at the entire electricity pricing including the subsidies afforded to almost 10,000 business who are paying less than half the actual cost of their electricity supply also needs to be taken into consideration. While the media and some politicians like to point the blame on new technologies – there are often other factors to be considered.

Moreover, QCC believes that the QPC should actively look at the hidden costs: externality costs and calculate them appropriately for Queensland's energy capacity.

Are there mechanisms in the electricity system which may prevent the true value of exported solar energy being realised, monetised?

It is clear that the take up of rooftop PV was possible due to the large investments by the solar panel and associated inverter system producers and the ability of the existing well-trained and well-regulated electrical installers as well as the deliberate Government intervention in the market-place.

Is the Government's 1 million rooftops target by 2020 possible and if so should it be extended to include an even higher target with compulsion for those sectors not currently pulling their weight?

The short answer is yes. The rate of Queensland Solar Roof installations was approaching 130,000 per year until the ill-advised change to feed in tariffs. To meet the 150,000 per year target for the next four years, is well within both the capital availability requirement of household capital reserves and the physical supply of the hard equipment.

The 1 million rooftop programme does not have to merely rely on residential customers to harness the sun. There are hundreds of businesses, small or large scale that should be required with the incentive to install solar PV.

It would be of greater benefit if the majority of the equipment used was manufactured in Queensland. A simple change to the planning requirements mandating the installation of Solar PV on all new construction (business as well as residential) will provide the necessary impetus for local constructution.

Existing work has been done with financial institutions to provide home loans that include the cost of solar PV. It has been found that including the cost of solar PV upfront in a home loan makes the financial burden markedly reduced.

Finally, a rigorous time of day pricing regime which includes maximum demand incremental pricing inclusive of standby power marginal costs allowances would be sufficient to provide sufficient incentive to the majority of the business community and the more high income households to adopt both solar PV and better energy conservation practices.