



#E2016/94294
Your ref:
Contact: Kim Mallee, Sustainability Officer

25 October 2016

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Dear Ben Shafran

Proposed rule change for local generation network credits

Byron Shire Council supports a positive determination to the proposed rule change for Local Generation Network Credits. The Byron Shire has a high energy literacy both in the community and amongst its businesses which has facilitated numerous innovative energy projects in our area. Set in this context Byron Shire Council has committed to reducing the carbon impact of its operations and the community at large and has invested in a range of renewable energy, energy efficiency and fuel efficiency projects.

In 2013 it became clear that the combination of the strong environmental culture of the Byron Shire and the increasing network costs was leading residents to invest in renewable energy with a view to going off grid. Byron Shire has had a long history of consumers going off grid for their energy needs since the 1970's and the falling price of solar technology paved the way for one of the highest solar uptakes in the nation. The rise of customers leaving the grid alerted Council to the concept of spiralling customer loss and this coupled with the widening socioeconomic gap created a need for Byron Shire Council to investigate a solution.

Byron Shire Council partnered with the Institute for Sustainable Futures (ISF) in the trial of Local Energy Trading and Local Network Credits due to the above mentioned pressures in our community and the need to find a site specific solution to the energy cost of Council's West Byron Sewage Treatment Plant.

Council has chosen to invest in renewable energy generation on its most energy intensive facilities as a means to improve the long term financial sustainability of the assets. The West Byron Sewage Treatment Plant has very high energy consumption with a proportionally small roof space. One kilometre away is the Cavanbah Centre (recreation centre) which has a comparably small energy use and a significantly large roof space. A logical solution is to generate energy from solar on the Cavanbah Centre and attribute it the consumption at the sewage treatment plant. This scenario was modelled by the Institute for Sustainable Futures alongside the option to create a private wire between the two sites.

As outlined in the ISF trial fact sheet¹ (see attached) the current system of network charges has created a perverse situation where it is more financially viable to construct a private wire to solve



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the generation issue at the sewage treatment plant. This outcome is not Council's preferred option as it duplicates a perfectly sound network infrastructure and goes against the tenets of sustainability.

The current lack of mechanism for proportional use of the network for decentralised energy generation is a significant barrier to further investment in renewable energy. Systems are scaled to meet 'behind the meter demand' rather than capitalising on physical site potential or network zone energy needs. This impedes the development of flexible grid solutions into the future and does not value the contribution of avoided long range marginal costs to the network.

Byron Shire Council notes with disappointment the AEMC's draft determination on the proposed rule change and the published preferred rule. It appears that the AEMC have missed a prime opportunity to move the electricity market forward in a way that maintains utilisation of the grid in an equitable way to all consumers. The AEMC's draft determination appears to have examined the proposed rule change in the narrowest of scopes and has not made provisions for adapting or building on the proponents work. As outlined in the submission made by the Institute for Sustainable Futures a lower limit for generation system size and the exclusion of existing generation units would create an equitable cost implementation model for Local Generation Network Credits to be delivered. Furthermore the modelling completed by the AEMC seems not to include generation technologies other than PV which have a higher dispatchability value and appears not to have thoroughly considered the benefits to the transmission network level to which most of the benefit of a LGNC would occur.

The preferred rule change proposed as an alternative solution by the AEMC appears quite cumbersome and fails to make available any new information that is not already available via the Network Opportunity Maps. Furthermore the preferred rule change assumes that the contractual cost involved in generators negotiating network support payments are negligible whilst in fact they are not financially viable for small and medium scale projects.

Whilst the potential solutions to disproportionate energy equity and creating a flexible and nimble grid for a decentralised energy future are many, the appropriate valuing of network use via cost reflective tariffs is a logical and necessary component. Byron Shire Council strongly supports a positive determination to the rule change for Local Generation Network Credits. The current foundation of research created by the Institute for Sustainable Futures coupled with the supportive stakeholder group formed by the project would be an opportune platform for Network Service Providers to build their tariffs from. I urge you to consider further investigation into a viable framework for implementing a Local Generation Network Credit.

Yours sincerely



Simon Richardson
MAYOR

Encl: E2016/71964 – ISF Trial Fact Sheet

¹Rutovitz, J., Atherton, A., McIntosh, L., Teske, S. & Langham, E. (2016) Virtual trial of Local Network Credits and Local Generation Network Credits for Sustainable Futures, UTS.



The Byron Shire Council trial aims to test the economic impact of Local Network Charges (LNC) and Local Electricity Trading (LET) on local energy projects, and assess the real-world requirements for these two measures to be applied.

The trial has been undertaken as part of a one-year research project, Facilitating Local Network Charges and Virtual Net Metering, led by the Institute for Sustainable Futures (ISF) and funded by the Australian Renewable Energy Agency (ARENA) and other partners. It is one of five 'virtual trials', in New South Wales, Victoria and Queensland. The trial investigates the potential impact of a local network charge, as well as the effects of netting off energy between the sites.

Local Network Charges

Local network charges are tariffs for electricity generation used within a defined local network area, to recognise that only part of the network is used. These have been applied as a credit to the generator in these trials. In most cases, this would reduce the network portion of the electricity bill.



Local Electricity Trading (LET)

Local electricity trading is an arrangement whereby generation at one site is "netted off" at another site on a time-of-use basis, so that Site 1 can 'sell' or assign generation to nearby Site 2. This would reduce the combined energy and retail portion of electricity bills for local generation.



TRIAL KEY FACTS

Proponent	Byron Shire Council
Network service provider	Essential Energy
Electricity retailer	Origin Energy
Generator	150kW new Solar PV
Location	Cavanbah sports centre (generation site) and the West Byron Sewage Treatment Plant (netting off site)
Generation/customer model	Single entity, 1-to-1 transfer between two Byron Shire Council sites. The Cavanbah sports centre with low consumption and good roof space transfers energy to the nearby sewage treatment works which has high consumption but little space.
Project status at time of trial	25 kW installed, with very small amount of export. Council is investigating adding 150kW at the Sports Centre, with a significant proportion of the generation exported to supply the West Byron Sewage Treatment Plant.

What the trial looked at

The trial compares the business case for new solar generation in current conditions, as well as with and without a Local Electricity Trading arrangement and a Local Network Credit. The trial scenarios look at the impact on the proponent, the network business, and the retailer. The different scenarios are:

BAU: business as usual – current electricity and network charges, without any new generation.

Current Market: installation of new generation, with the market as it is now.

LNC only: includes new generation, with payment of a Local Network Credit.

LET only: new generation with Local Electricity Trading in place for the exported electricity.

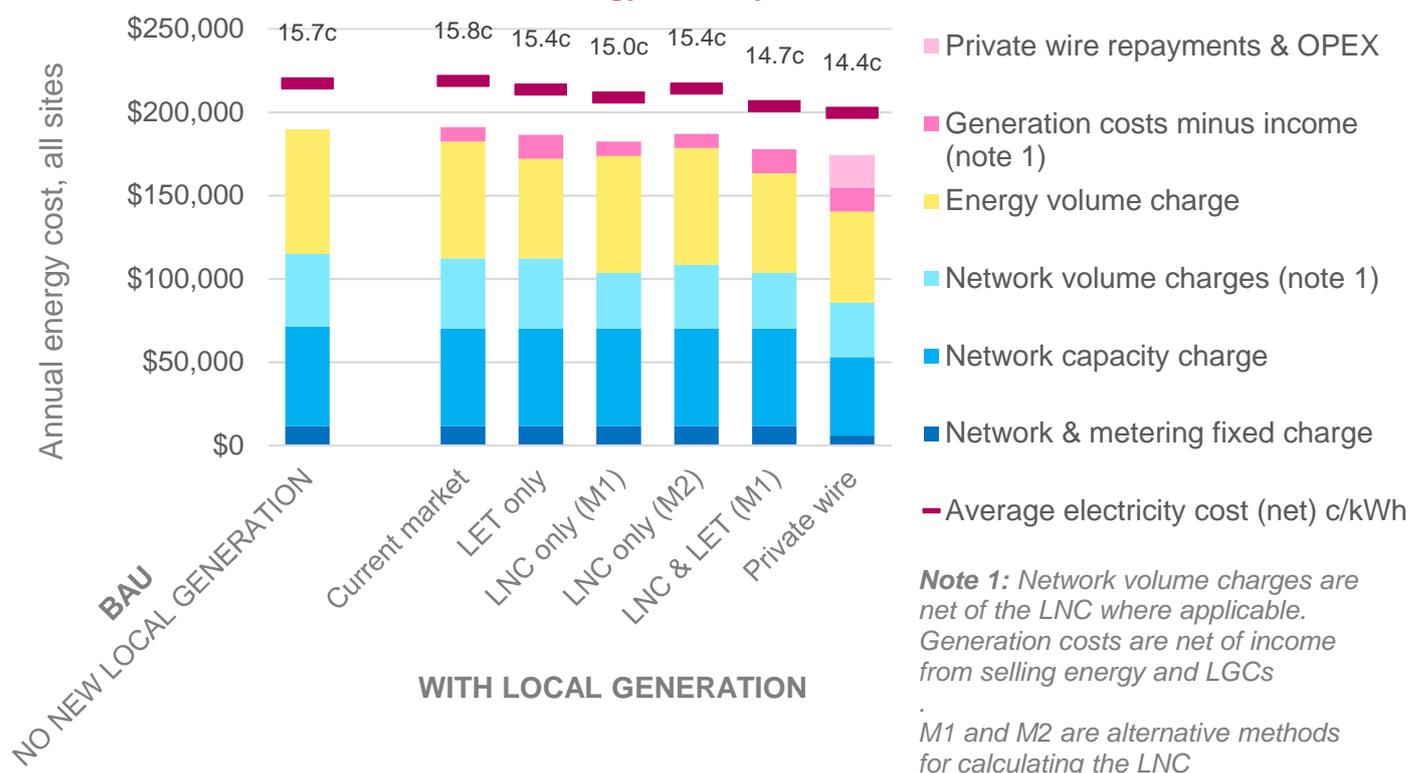
LNC and LET: new generation with both measures in place.

Private wire: new generation, with the two sites are connected together with a private wire so they become the same meter point.

Trial results

The total cost shown in the graph is the net energy cost for the two Byron Shire Council sites. This includes the energy and network charges, capital repayments on any new infrastructure, such as the solar panels and the private wire, and any income the generator may receive. Income includes renewable energy credits, the new LNC, and any buy back income from electricity which is exported and not used at the netting off site.

Byron Shire Council: Cavanbah Sports Centre & West Byron STP Annual Energy Cost by Scenario



BYRON SHIRE COUNCIL	Current market	LET only	LNC only (M1)	LNC & LET (M1)	Private wire
Annual savings compared to BAU	-\$1,200	\$3,300	\$7,400	\$11,900	\$15,400
Simple payback	11 yrs	10 yrs	9 yrs	8 yrs	8 yrs
Net effect on network charges	-\$2,700	-\$2,700	-\$11,300	-\$11,300	-\$29,400
Effect on retailer income	-\$2,800	-\$6,100	-\$2,800	-\$6,100	-\$6,900
Greenhouse emission reduction (all scenarios with new local generation)					229 tons/yr

Conclusion

All scenarios except the current market conditions result in a saving compared to business as usual, so the project has a cost benefit with the assumptions used if either LET or LNC is available, or with a private wire. The private wire scenario results in the greatest benefit, with estimated annual saving of \$15,400. The next most advantageous is the scenario with both the new measures, the Local Network Credit and Local Electricity Trading.

Network charges are the most significantly affected in the private wire case, with a loss of \$29,400. This is 2.6 times worse than the next best scenario from the network's point of view. Despite this the outcomes are similar for Byron Shire Council.