Zero Emissions Noosa 2021 Submission to the Australian Energy Market Commission (AEMC) regarding Draft Rule Determination:

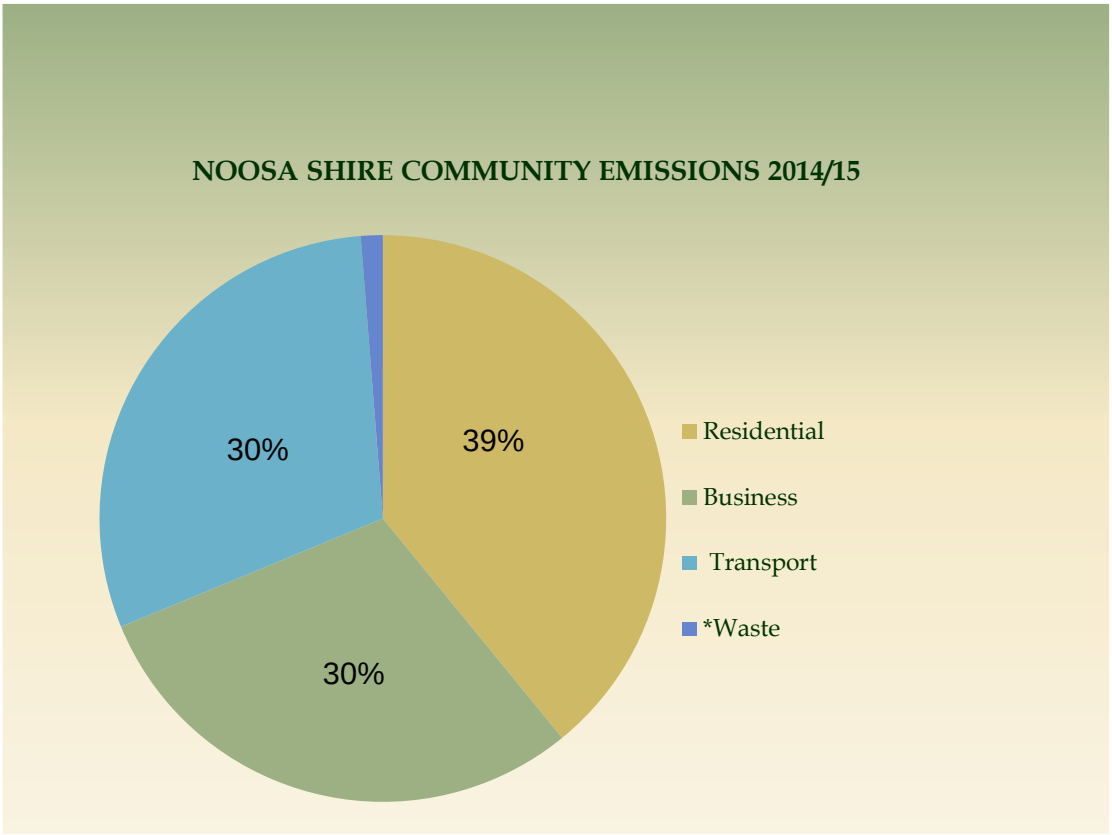
National Electricity Amendment (Access, Pricing and Incentive Arrangements for Distributed Energy Resources) Rule 2021

National Energy Retail Amendment (Access, Pricing and Incentive Arrangements for Distributed Energy Resources) Rule 2021

1. Background to Submission

Zero Emissions Noosa Inc. is a not-for-profit incorporated association with the goal of net zero greenhouse gas emissions in the Noosa Shire by 2026. Our key focus is on reducing emissions from electricity consumption and transport emissions. We work closely with partners such as Noosa Council and Tourism Noosa, and community and business associations in the Noosa Shire. We aim to achieve our goal through research, education and information on the environmental and financial benefits of energy efficiency (EE), renewable energy (RE) and sustainable transport options.

Based on research commissioned by Noosa Council we know that community emissions are in the order of 500 000 CO_2e tonnes with the breakdown of contributors as per the diagram below.



We have been monitoring the uptake of RE in the residential and business sectors[1]. As at 30 June 2020, we estimate that 51.5 MW of solar PV is installed in the residential sector, representing 42.8% of dwellings. We also estimate that business solar (assuming > 10kW) now constitutes 10.8 MW, representing 18.7% of businesses.

We also note that, at the end of 2009, the annual combined electricity consumption of residential and business was 336.79 GWh. Annual combined consumption as of 30 June 2020 was 298.37 GWh, representing an 11% reduction in grid consumption from 2009 levels.

From 2009 to 2018, however, the estimated population growth of the Noosa local government area (LGA) has been 10%, from 50,335 to 55,369.

This means that the average residential grid electricity consumption per person has fallen from 3,975 kWh to 3,052 kWh - a 23% reduction. While these are positive results, we know that key laggards in the uptake of EE and RE are business, strata and rental properties.

To reach our goal of net zero emissions by 2026, our focus is on overcoming barriers to the uptake of EE and RE and maximising their implementation, whether this is by individual or community initiatives.

Our assessment of the merits of the Australian Energy Market Commission **(**AEMC) Draft Rule Determination will therefore be on whether it contributes to or detracts from growing the uptake of EE/RE in the Noosa Shire.

2. Need for Draft Rule Determination (DRD)

Our understanding is that the need for the DRD is to respond to emerging grid stability issues arising from the growth of rooftop solar (distributed energy resources). The DRD notes the huge growth of distributed energy resources (DER):

> Around 20 per cent of all customers in the National Electricity Market (NEM) now partly meet their electricity needs through rooftop solar PV generation, and sell excess electricity back into the grid – compared with less than 0.2 per cent of customers in 2007…
>
> According to the Australian Energy Market Operator's (AEMO's) forecasts, rooftop-solar installed capacity across the market is set to far exceed that of the market's largest remaining coal generator in the near-future and will double or even triple by 2040.[2]

The DRD notes that this growth in DER presents emerging difficulties for the safety of the current energy system, which was designed primarily for one-way flows:

Limitations of networks built for one-way flows:

While there is no doubt that distributed energy resources provide many benefits to consumers and the energy system, without a change to the regulatory framework, consumers will face growing limitations to the amount of energy they can export.

[1] For details on sources and methodology, please see https://www.zeroemissionsnoosa.com.au/noosa-electricity-data.
[2] AEMC, DRD, p. ii.

This is because distribution networks have a base level of hosting capacity for distributed energy resources; however, most distribution networks were built when energy only flowed one way.

Now distribution networks are increasingly being used to export energy from customers and approaching the limit of their 'intrinsic hosting capacity'. As a result of these two-way flows, the ability of networks to transport and deliver electricity safely, securely and reliably is being challenged. These challenges raise medium to long-term planning and investment issues.[3]

It appears the AEMC sees possible consequences to this problem as follows:

1) A need for significant investment in upgrading 'poles and wires' to cope with these increased two-way flows, the cost burden of which is likely to fall on consumers least able to pay for it; or

2) A need to restrict or even prohibit export from DER, which would discourage the growth of renewable energy uptake at a time when it is most needed to reduce Australia's emissions and provide low-cost energy.

Zero Emissions Noosa is aware of emerging system problems in the Noosa Shire, particularly for larger business solar systems. One large business in the Noosa Shire installed a 100KW system as required to pay for upgrade of the street transformer serving its business in order to gain permission to install the system. We intend to undertake more rigorous research with business consumers and solar installers to document the extent of this emerging problem.

3. Proposed DRD change

The AEMC claims:

> The reforms crystallise distribution networks' obligation to connect distribution energy resources to their network in a way that benefits everyone – not just those who can afford them.
>
> The draft rules propose a framework for consumers, distribution networks, and the Australian Energy Regulator (AER) to decide the type and level of services – both consumption and export – that they desire and contributes to the transition to a lower-cost electricity system. [4]

The AEMC DRD notes that "the existing incentives framework may not provide balanced incentives to networks for providing export services". [5] Further it states, "under the current arrangements, networks face no financial penalties for providing poor quality export services or rewards for providing higher quality of service". [6]

[3] AEMC, Draft Rule Determination, p. iii.
[4] Ibid, p iv.
[5] AEMC, Draft Rule Determination, p. v
[6] AEMC, Draft Rule Determination, p. v.

The key therefore, as Zero Emissions Noosa understands it, is to facilitate the development of incentives that motivate networks to grow their export capability and outcomes. The incentives include:

a) Enabling Distribution Networks to offer Two-Way Pricing for Exports

This proposal would enable networks to charge for export of energy to the grid. This capability would be dependent on local circumstances, subject to consultation and regulated by the Australian Energy Regulator. The DRD includes modelling for the likely cost impact on consumers, although we believe there can be no certainty regarding cost impacts at this stage. The DRD notes,

> To be clear, the draft rule does not mandate export pricing. Implementation is optional. The Commission's decision to enable export pricing options under the regulatory framework is not a decision to mandate the implementation of export pricing. We do not propose all customers with rooftop solar should start paying ongoing export charges. The AER, as the economic regulator, oversees revenue determinations and pricing proposals for each distribution network. Any decision to implement export pricing would be part of the AER's regulatory process and would be subject to consumer safeguards.[7]

b) Allowing Flexible Pricing Solutions at the Network Level

According to the AEMC, the draft rules create flexibility for innovation around new pricing and service options. They do this by removing the current prohibition on charges for energy exported into the grid and clarifying that networks may create tariffs that reward customers for exporting energy to the grid at times of high demand and charging them when the grid is congested.

4. Zero Emissions Noosa Response

Zero Emissions Noosa acknowledges that the need for export constraints are already emerging in some sections of the NEM, and implementation of export barriers will become more common without network upgrades to enable and enhance 2 way energy flows.

System reform is necessary to respond to these emerging network constraints however, existing Retail customers who export energy should not be expected to bear the full burden of the cost of this reform given that they have made significant investments in generation assets based on the rules in place at the time.

System reform must also not disincentivise those who may be considering investment in solar.

It is argued that the rule changes will provide a benefit to those who currently have limited access to the benefits of solar such as low-income households and renters however Zero

[7] AEMC, Draft Rule Determination, p. vii

Emissions Noosa believe that the benefits already provided to those customers and indeed the entire network by small scale exports through the significant reduction in wholesale energy costs feeding through to reduced retail tariffs far outweighs the cost recovery that is proposed to be imposed on a small but significant proportion of customers in the name of "equitable" energy supply.

The changes penalise only one form of generation and therefore distort the mechanism and forces of an open market. Any network investment to accommodate for new technology should be borne as a general cost. If a contribution is to be levied generators it should be charged on all generators proportionally to their capacity.

A blanket charge for export does not take the impact of individual systems on their local networks into account and will unfairly impact the operators of systems with a large degree of self consumption and low exports.

For typical residential PV systems with high self-consumption, the proposed charges as outlined, in combination with existing metering charges will exceed the returns from exports. Therefore the charges constitute a fee for no economic return. The alternative, retrofitting of systems to achieve zero export, requires significant additional investment in the order of several hundred Dollars from owners.

Zero Emissions Noosa believes that a change to the existing process is urgently needed.

1) It must be immediately announced that any changes will only apply to systems installed after the commencement of any changes ie conditions for existing installations are grandfathered unless customers choose to take up a new offer.
    a. As a result of media relating to the proposal there has been a significant reduction in enquiries for solar system installation. The premise of the proposed rule changes is that they are required to increase the ability to host solar PV systems on the distribution network but the reality is that their announcement will result in an immediate reduction in expected growth. This will result in Wholesale energy costs being higher over the long term than they would be under existing rules.

5. Proposed amendments to the Draft Rule Proposal

With respect to the proposed rule changes Zero Emissions Noosa is in agreeance that networks need to be upgraded to be modern and efficient but recommends the proposal is amended to include the following:

1) The primary aim should be that Networks are upgraded and modernised to enable 2 way energy flows.

2) Funding for these upgrades should be provided by the existing framework whereby Networks charge all customers though the Network charges levied on retail customers to recoup their authorised investment.
    a. The suggestion that Retailers should have to negotiate with multiple network providers to then on charge different recovery levies to different customers is inefficient and illogical.

3) Recognition needs to be made of the substantial benefits that small scale exports of renewable energy have provided to all customers through the lowering of wholesale energy costs and the subsequent lowering of standard retail tariffs.
    a. The annual benefits to all customers far outweigh the costs that are proposed to be imposed on a small but growing segment of the Network that has provided this benefit. This highlights that those who are economically locked out of purchasing small scale renewable energy systems do still receive substantial benefit from renewable energy despite not being able to afford a system of their own.

4) Social housing energy systems such as have been provided in South Australia where Public Housing tenants have had solar systems installed on their properties is a far better solution than simply charging a levy on a portion of customers.
    a. The VPP their systems belong to provides network support and stability control at the same time as providing the tenants with access to discounted power.

5) Networks need to investigate, cost and implement Demand Response solutions that provide granular control and network management and fully utilise the possibilities of modern technologies.
    a. Incentivising customers to enable network load management through the remote control of appliances such as air conditioning, hot water systems and pool pumps together with promoting the uptake of batteries (both household and community) will enable exports to be time shifted reducing the impact and increasing the benefit to the network.
    b. Distribution network level battery storage should be considered to manage local load issues.

6) The option for Networks to be able to flexibly limit exports for new installations such as occurs with SAPN is generally supported.
    a. This should however, be viewed as an interim network support mechanism to support the implementation of the comprehensive changes proposed above and not a solution in itself. Implemented without other necessary Network Upgrades will simply see systems curtailed for longer each day again reducing the benefit to customers to install solar systems.

7) Energy provision should be based on the best outcome for networks and major customer groupings – Residential, Commercial, Industrial etc.
    a. Provision of social policy outcomes should be left to Governments to administer through rebates or other retail incentives as they see fit. It is not the role of the energy market to attempt to right social wrongs or inequities.