



23rd November 2012

Philip Weickhardt
Presiding Commissioner
Productivity Commission
electricity@pc.gov.au

Dear Philip,

RE: SUSTAINABLE REGIONAL AUSTRALIA'S RESPONSE TO PRODUCTIVITY COMMISSION DRAFT REPORT INTO ELECTRICITY NETWORKS REGULATORY FRAMEWORKS

Sustainable Regional Australia (SRA) is the lead proponent of Central Victoria Solar City: a consortium based industry trial investigating consumer energy use behaviour. Our trial investigates the impact of a range of energy efficiency measures on participants energy use over time. We collect participant's data using a smart meter, which has been installed at each of the 2,750 participating households. Our trial has been underway for four years and includes Origin, Powercor, Bendigo Bank and Central Victorian Greenhouse Alliance as consortium members.

To date we have found that home energy assessments offered in isolation, (without follow up from the home energy assessor) reduced the participant's average daily consumption by an average of 3%. We found that smart meters, when paired with In Home Display (IHD) reduced participants consumption by an average of 7%. In our experience, consumers were largely unaware of how much energy they consume on a daily, monthly or annual basis. We found that a simple energy assessment can improve the energy literacy of consumers, facilitating a better uptake of energy efficiency measures.

SRA designed cost reflective pricing products in collaboration with Origin and Powercor to trial within the project. We found that while the benefits of dynamic pricing to the distribution businesses in managing demand during critical peak events are clear there has been little work done to date to understand the potential social justice implications of the practice.

Our trial considered the social responsibility of retailers, distributors and government in educating consumers to a level where they can make an informed choice about whether a dynamic tariff is suitable for them. We also considered the need for a community wide education campaign ahead of the introduction of dynamic pricing at scale, to inform consumers about how to manage their health and wellbeing during a heatwave, particularly those households who have elected themselves onto a dynamic tariff.

Our experience to date is that there is no clear distinction about where responsibility for consumer education related to major energy reform sits, with government, distributors or retailers? While there is ambiguity about who is responsible for consumer education around energy reform, no one sector will take appropriate action to ensure customers understand the context in which dynamic pricing is being introduced, the potential net benefit to the community at large and how the industry as a whole will ensure dynamic pricing will not compromise customer's health and wellbeing.



We recommend that a review of energy regulation provide absolute clarity related to the responsibility for educating consumers ahead of pricing reform (in particular the introduction of dynamic pricing/critical peak pricing) being introduced at scale.

SRA has found that Home and Business Energy Assessments are the most effective way to engage individuals, communities and business. Through local trusted advisers equipped with education tools such as a free user friendly booklet, energy assessments are a powerful way to increase energy literacy as well as inform customers of the value of smart meters, particularly when complemented with an In Home Display or web portal access.

Providing real time information on energy use through an In Home Display are more amenable to reducing their energy use, where the display can be complemented with traffic light symbols to enhance the householders responsiveness to their energy use.

REGIONAL COMMUNITIES - THE VITAL LINK

Sustainable Regional Australia currently works in partnership with three regional communities to decrease energy use and establish community owned renewable energy power stations. The three projects are based in central and northern Victoria and are titled “Renewable Newstead”, “Renewable Kyabram” and “Renewable Murchison”.

The current regulatory requirements to pay a fixed price for transmission and distribution of electricity are a major economic barrier to the development of community owned and operated renewable energy power stations. In this submission we explore the potential benefits of Virtual Net Metering (VNM) and the potential for government incentives to expedite the take up of community owned and managed renewable power stations.

Benefits of distributed generation on a small scale (10kW-1MW) and medium scale (1-10MW):

- reducing general and peak demand
- enhanced reliability of supply
- potential for avoiding or deferring network infrastructure costs
- projects can be sited close to load
- projects typically feed into the distribution network, not the transmission network therefore are simpler and cheaper to connect to the grid than utility scale projects
- security to the grid
- relieve network congestion
- efficient network costs
- reduced transmission and distribution network losses
- lower greenhouse gas emissions
- greater energy security
- the ease of finding sites for small generators to meet demand
- shorter installation times than for conventional generation plants
- the ability to use energy sources such as waste products or renewable resources which might otherwise have no economic use



Additional benefits of community-owned small scale renewable energy assets:

Economic

- competitive return on investment
- profits that flow back to local sustainability projects (e.g. Hepburn Wind farm community fund is projected to distribute more than \$1 million over the first 25 years of the wind farm's operation)
- local employment in project establishment, delivery and ongoing operations
- investors can easily identify 'shovel ready' communities
- determine energy consumption benchmark for the community
- demonstrate the value of energy efficiency measures for residents, social organisations and business (SME to big industry)
- tapping into a new finance source that diverts, relieves and/ or leverages government spending, where investors are engaged in the financial structure and have a willingness to forego maximising their return on investment as a compromise for the suite of additional benefits. This adds additional appeal for the projects business case in a competitive investment environment and provides opportunities for co funding exclusive of government. The success of Bendigo Bank's Community Bank® model is an example of the potential of the 'community investor' where people who wouldn't normally invest are prepared to contribute towards community business because they trust their neighbours and feel a high personal affinity with their project. The Hepburn Wind project shows that communities will invest significantly in local renewable generation that is community driven
- provide an inspiring, evidence based and replicable model for regional Australian towns to entrench their future viability. This shines a light on the capacity of small towns to lead and stimulate Australia into a clean energy future
- filling the gap between individual and utility scale responses providing a range of scale in our energy supply chain
- can be strategically located to where infrastructure is earmarked for an upgrade
- demonstrating innovation, which may later be applied to utility scale infrastructure
- being opportunistic to the challenges faced by climate change and positioning Australia to have a competitive advantage
- developing eco tourism
- drive cooperation with electricity industry and their customers
- provide opportunity for community retail enterprise

Social

- greater independence and control in energy security, as well as safeguard residents on a low income against the rising price of electricity
- community empowerment as an avenue for the community to significantly contribute positively to the environment and provides practical pathways for concerned energy consumers to be ambassadors for renewable energy
- increased social connectedness in whole of community through a social enterprise with collective commitment, purpose, vision and pride

- improved governance and social capacity through developing local leadership
- provides a platform for grassroots decision making that is led by the community rather than corporate
- improved energy efficiency and literacy through participation in a project to reduce collective energy use and pursue renewable energy options through avenues such as home energy assessments, local independent knowledge and case studies
- improved energy literacy through effective engagement provides for greater acceptance and adoption of technology to reduce consumer demand such as time reflective pricing, smart meter and demand reduction enabling devices
- powerful community engagement, media and workshops to reduce energy consumption and pursue renewable energy options
- real engagement with the community by the community through community conversations, local passion and inspiration, energy assessments, media, forums and workshops
- scaled to the community's own energy requirements
- small scale project provide impetus and appeal to larger sized projects
- minimal opposition and greater public acceptance of projects, in particular wind, when the predominant stake of the ownership and/ or operational decision making is from the community

Environmental

- identifying and testing new fuel sources
- successful project engagement and delivery allows for further sustainability and climate change mitigation projects to be initiated, funded and delivered as well as improving people's broader environmental awareness

These comprehensive and compelling benefits form the driving forces behind local leadership groups to strive towards such a project that has obvious triple bottom line benefits – to unite people on energy transformation to enhance their local economy, social community and Australia's environment.

Sustainable Regional Australia is committed to decreasing consumption and establishing local, decentralised renewable energy generation that is community owned providing economic, social and environmental benefits.



Insert: Newstead Community



We are proposing some changes to the regulatory framework to allow for communities to become central players in the electricity market and renewable generation. We believe that the proposed changes for Virtual Net Metering and restructuring network costs for distributed generation to expedite community renewable energy projects that strongly supports the National Electricity Objective to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity.

SRA understands that reform to streamline connection procedures for distributed generation is taking place. Further reform to our network can take advantage of this opportunity for regional Australia and speed the development for community owned renewable energy projects so they can play a pioneering and critical role in Australia's clean energy future.

Due to this, SRA proposes the following strategies, that are complimentary or can be pursued individually, to the Productivity Commission to consider for the final report into the Electricity Network's Regulatory Framework:

1. VIRTUAL NET METERING FOR COMMUNITY AND REGIONAL RENEWABLE PROJECTS

Virtual Net Metering (VNM) is a proposed regulatory framework that adds direct financial value to the business case for community energy projects, without the need for feed in tariffs or other government subsidies or funding.

Definition of Virtual Net Metering

Virtual Net Metering (VNM) is where a component of the electricity consumption metered at one site (or sites), is 'netted-off' against the electricity exported from a generation site within the network area. VNM is also known as 'virtual private wire' over public wire networks. If electricity legislation can be amended to allow exemptions for VNM, this would effectively enable the sell price (\$/kWh) of electricity from the generation site to match the buy price (\$/kWh) of the electricity being purchased at the consumption site/s.

Implementation of each VNM project may require a single electricity retailer to coordinate the generation and customer billing arrangements. Currently the wholesale price is established through either the half hourly spot price market or through power purchase agreements PPA's and may range in the region of \$80 to \$120/MWh (8 -12c/kWh).

Precedence

An energy bill [SB 843](#) is progressing though the California Senate to allow VNM for renewable energy projects, similar to the VNM provided to [NW-Community](#) projects in Washington State. In Australia, the [Sydney City Council Project submission](#) has proposed VNM and distributed generation in a model equivalent to the Working model in the UK.

Background



During the delivery of the Central Victoria Solar City project 2009 to 2012 and our involvement with regional communities, we are aware that there is a significant appetite for regional communities to plan, fund, build, own and operate medium scale renewable energy generation assets.

Examples of such towns in Victoria are: [Castlemaine](#), Murchison and Kyabram who are developing feasibility studies, [Newstead](#) who have completed their feasibility study and Daylesford who have raised around \$12M and installed two 2MW wind turbines under the [Hepburn Wind](#) organisation.

SRA understands there would be several hundred towns across Australia with similar levels of appetite for community owned renewable assets. SRA receives ongoing enquiries from communities eager to access pathways, skills, knowledge and experience to pursue community owned renewable energy.

Our experience demonstrates that increased energy literacy through effective engagement, such as home energy assessments provides for greater acceptance and adoption of technologies to reduce consumer demand such as time reflective pricing, smart meter and demand reduction enabling devices.

Current Financial Modelling

Our discussions with these groups indicate in most cases, the feasibility studies show that the financial return on their investments is under the level required to move ahead. Moving to a VNM scenario may provide a doubling of the rate of return compared to that achieved through the half hour spot price market or with a PPA.

Distributed Generation – Innovation & Reform

Section 13.4 of the draft report outlines the network costs or complexities when considering Distributed Generation. SRA has considered these points and agrees that the renewable energy options must include a mix of despatchable energy sources such as bio-fuels that can be stored and converted to electricity on demand, solar energy which partly matches daytime peak demands and 'opportunistic' sources such as wind.

SRA suggests that VNM should be considered for each of these categories equally until significant amounts of renewable generation comes on line. When renewable energy generation begins to provide a reasonable proportion of total demand, for example 30 – 40%, then a higher preference in providing VNM may be given to projects that are despatchable or that include energy storage systems over sources that are not despatchable. Diagram 1 shows an example of comparing peak and averaged demand.

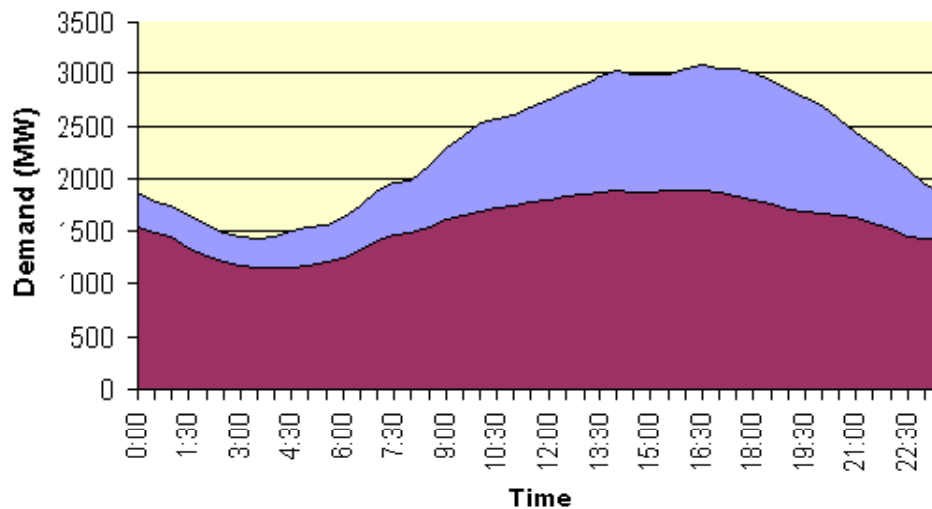


Diagram 1:

South Australia's Total System Peak Demand and averaged (dark shaded) across the period 1 December 2007 – 31 March 2008 (ESCOSA, 2008)

Source - Institute for Sustainable Systems Report 2009

Chapter 2 p106 of the Draft Report stated network costs are the sum of transmission and distribution costs. SRA proposes that increased Distributed Generation will ease the requirement for transmission upgrades especially in remote regional areas. If distributors, AEMC and AER can provide strategic sites and scale for Distributed Generation, and outline the preferred mix of despatchable and non despatchable renewable energy to match demand requirements, this could provide a roadmap for potential projects.

A well planned mix of renewables will avoid 'curtailment', or shutting off generation as renewable energy sources become a major proportion of generation capacity. The many benefits of Distributed Generation have already been outlined earlier in our submission and in Chapter 13.3 of the Draft Report.

Network Providers and Distributors

Distributors and Generators may argue that VNM allows the beneficiaries to have a 'free-ride' and give access to poles and wires without the normal distribution charges that are currently collected through normal retail billing practices. Even some renewable energy generators, whose customers currently pay a network fee, may argue that VNM offers an unfair advantage. Whole communities would perceive VNM as a step towards a level playing field. Some tradeoffs and limitations will need to be set in place to provide balance in this area as proposed below.

Proposed limitations and capacity limits to VNM

We expect California is setting limits under the [SB 843](#) such as capping the size of each generator which may be appropriate to investigate when adopting VNM in Australia. SRA suggests setting longer term limits such as capping total generation under VNM to a limit such as 1GW of installed capacity per state, and/or individual projects capped to 20MW for example.

SRA also proposes the 'Netting-off' be performed either annually or over a billing period. Netting daily or half hourly should be avoided in early years as this may require additional metering and may be hindered due to technical limitations.

The life of the VNM agreement could also be capped at 8-10 years to present it as a pioneering initiative.

Demand Curves

Diagram 2 illustrates in a simplistic way how a mix of renewable energy sources can work together to begin to match a daily load curve:

- Solar PV generation nominally starting production 7 to 8am and ending 5 to 6:00 pm – remaining daily peak load could be balanced with bio-fuel generation.
- Wind or other non controllable energy can be considered as background or 'opportunistic' energy.
- Most bio-fuel energy can be controlled or transformed to energy at required times.

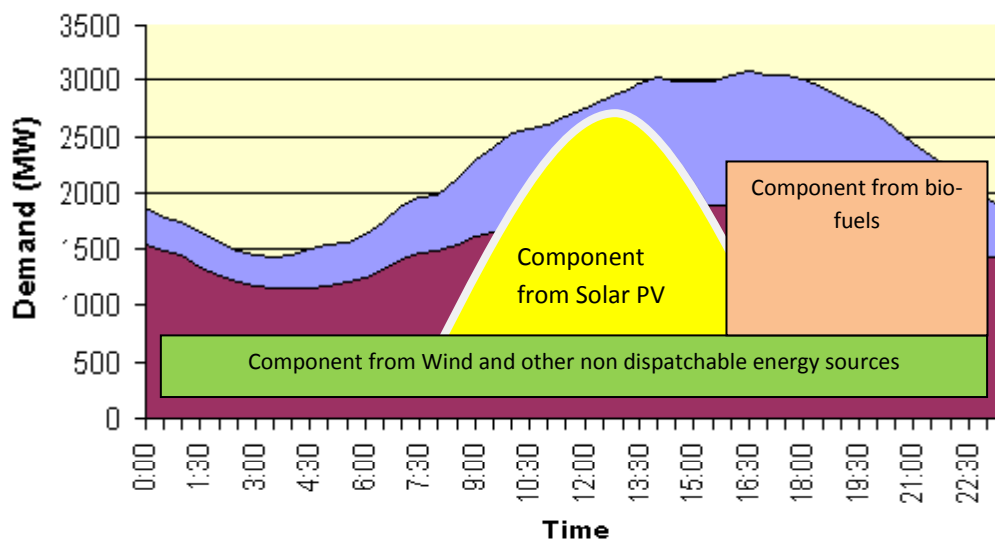


Diagram 2

CONCLUSION

An operating VNM facility would accelerate the roll out of many small to medium scale projects across regional Australia significantly contributing to our clean energy future and underpinning the 20% Renewable Energy target. The added advantage of community support is 'buy in' to energy policy, energy restraints and contribution to future solutions.



2. FINANCIAL INCENTIVE FOR COMMUNITY- OWNED RENEWABLE ENERGY PROJECTS

SRA proposes that a discount or exemption is provided to network costs for Renewable Energy projects that are deemed “Community Projects.” Such projects would need to meet specific criteria (e.g. local ownership and operation) to demonstrate their project will provide the many benefits of Community Owned Renewable Energy Assets.

Crucial to the business case for such projects is the payment for power generation that is sent to the grid through a PPA or on the open market. Reduced network costs such as transmission and distribution use of system charges (TuOs and DuOs) increase the economic viability of community renewable energy projects. Where infrastructure costs saving could be demonstrated, the equivalent or proportion could be:

- reduced off the network costs (TuOS and DuOS) to the customers in the local area
- Offset connection fees
- reallocated to an increase in a PPA agreement
- reallocated to introduce a feed in tariff (that does not have ‘green’ costs that is paid for by other consumers).

Focus on areas or locations where infrastructure costs may be earmarked will ensure the effective use of distributed generation to maximise network savings in those parts of the system subject to the greatest constraints.

Consideration should be given to network charges that represent a householder’s energy use rather than a ubiquitous cost, where householders pay transmission and distribution use of system charges, TuOs and DuOs respectively, that are applicable to them rather than paying network costs to cover the fixed capacity of connection or peak demand. Some customers have a higher connection and fixed costs than their actual consumption costs.

Many of the market costs are applicable to a centralised system. Reform to a more decentralised electricity market would need to remove the costs inherent in a centralised system to allow for greater efficiencies of an integrated system where the customer benefits through the reduced costs.

This provides the opportunity for collaboration between network service providers and community projects such as a Community Power company, where they work together to ensure the best outcome for their respective community members and consumers of electricity.

CONCLUSION

Distributed generation from community owned renewable energy assets has the potential to play a significant role in the transformation of our current electricity market to one that maximises value to electricity consumers with respect to price, quality, safety, reliability, and security of supply of electricity.



Regulation reforms that enhance the delivery of community-owned renewable energy assets will see many further benefits and value that supports industry, community and a viable regional Australia.

Please feel free to contact myself for further information as I am happy to assist in anyway.

Yours sincerely,

Leah Sertori
CEO
Sustainable Regional Australia