Jim McMillan

Renewables Adoptee

[redacted]

13th November

Dr. Kerry Schott AO
Chairman Energy Security Board
Level 26, 1 Bligh St,
SYDNEY NSW 2000

REF: COAG MEETING RE: NATIONAL ENERY GUARANTEE

Dear Dr. Kerry Schott AO,

This letter is in respect to the Hon. Josh Frydenberg MP minister for the Environment and Energy, Ref: PDR MC17-019899 of his direction to the Energy Security Board (ESB) for review and report to COAG.

In reference to this forthcoming meeting I would like to make available to you some of my experiences and observations over the last 10 years I have been involved in the Renewables industry.

Back in 2007 the cost of electricity to the home was 14.05c per kWh and 10 years later it is now 26.379c per kWh nearly double the price.

Apart from the kWh cost the network costs have jumped from $5.40 per month up to $38 per month a staggering 700% increase.

Just looking at the annualized cost to the consumer with an average of 19kWh usage per day it is clear to see there is a considerable increase in the costs. Lets do the sums here.

Year 2007
19kWh @14.05 = $2.66 per day X 365 days= annual cost of $970.00
12 months @ $5.40 per month network fee = annual cost $64.80
Total annual cost **$1,034.80**
Or $258.70 per quarter @ 14.9c per kW

Ten years later 2017
19kWh @ 26.379c = $5.01 per day X365 days= annual cost of $1,828.00
12 months @ $38 per month network fee = annual cost of $456.00

Total annual cost **$2,284.00**
Or $571.00 per quarter @ 32.9c per kW

In the same time frame of 10 years the cost of solar has plummeted from $8.50 per watt installed to now sit at $1.00 per watt installed.
This translates to a whole of life (25 years) cost now below 4c per kW including the inverter replacement at 15 years.

It is no wonder people have been turning to producing their own electricity.
The result below was published 2015 year.

Australia leads world in household solar panel installations

The World Today By Samantha Donovan
Posted 29 Sep 2015, 4:02pm
Tue 29 Sep 2015, 4:02pm

PHOTO: The report found about 15 per cent of Australian homes have solar panels. (ABC News)

Australia has the highest rate of household solar panel installation in the world, according to a new report from the Energy Supply Association of Australia.

"We're clearly leading the world in rooftop solar," said the association's chief executive, Matthew Warren.

"There's literally daylight [coming in] second."

The report found about 15 per cent of Australian homes had solar panels.

"The country that's nearest to us is Belgium with about 7 per cent and most other countries are in low single digits, so we're kind of pioneering the experiment of rooftop solar and the world is watching," Mr Warren said.

Installation rates are highest in South Australia and Queensland, and in some Brisbane and Adelaide suburbs more than half of all homes have solar panels.

Mr Warren attributed that to more generous schemes in those states.

"South Australia has 25 per cent of dwellings, which is the highest in the world, and Brisbane's not far behind with 23 per cent,

Australia lags with large-scale solar projects

While Australians are taking to small-scale solar projects enthusiastically, the report found large-scale solar projects are less common than in other countries.

"It's one of those peculiarities," Mr. Warren said.

"What we're seeing here is an accidental experiment both in the way we deploy policy and what happens.

"So we've seen almost no utility scale in Australia, whereas countries like Germany and the US have predominantly utility scale solar, and that's been because of the way our renewable energy target has been designed.

"So it has tended to bias us towards lowest-cost renewable generation like wind at the expense of slightly higher-cost utility scale like solar."

The association said the comparatively low number of utility solar projects left Australia ranked sixth in the world for total solar installation per capita.

Base Load V Stored Power

As mentioned at the outset, over the last 10 years we have seen the cost of electricity virtually double. This resulted in the adoption of domestic solar systems in all States of Australia in large numbers.

Well here we go again! With the plummeting cost of batteries, now at $800.00 per kWh usable with a guarantee of 10 years life, (this is done with lithium-Ion batteries), we now have reached a whole of life storage cost of 21.9c per kWh and falling. It is worth noting this cost was in the vicinity of 40c per kWh just some 5 years ago. A big change!

So with further gains in efficiencies coupled with reductions in cost of battery storage it is clear history will simply repeat itself. People will utilize their unused power generated from their rooftop solar to be stored for base load (night time) energy.

This has not gone unnoticed. We have all seen the many news bulletins on Elon Musk’s 100mW battery installation in South Australia.

Other examples of base load power through renewable energy abound.

Former Macquarie banker Bill Moss has plans for a $2bn lithium-ion battery factory in the Queensland city of Townsville. Obviously the opportunity to provide base load power for self consumption has already been realized. This is expected to employ some 1000 people.

Another utility based option that is very common all over Europe with well documented efficiencies is pumped hydro. This option is also being considered. Please see link below.

https://www.brisbanetimes.com.au/national/queensland/more-than-1700-potential-hydro-sites-identified-in-queensland-20171026-p4ywo2.html

Conclusion:

As with the experiences from 2007 to 2017 the power consumer has developed an appetite to take the initiative of self provision when it comes to roof top power.

In the past the challenge has been to find a way forward in implementing a satisfactory base load option for the domestic market. Great strides have been achieved in this regard as previously mentioned. With the advancements of both battery technology and price points these two factors are the primary mover in base load power emerging as a fundamental player in the current domestic market. Are we having a déjà vu moment here?

Commercial and industrial markets have not reached these crossroads but the future of providing renewable base load power to these markets until now virtually untouched is inevitable. It's just a case of when.

There is nothing to suggest renewable energy is wrong or cannot provide certainty of delivery. All the technologies employed in this sphere are inert. In other words the technology just performs as it should, like a car.

A bad driver will often crash and burn. It's not the car but the driver. In the case of renewables it falls on the policy settings from governments be they state or federal. Hopefully we are in good hands.

With the consultant's commissioned review of interconnectors currently underway, I truly hope that intellectual honesty, equity and thoroughness is applied to ensure that the missing links that will allow renewable to reach their full potential at the earliest opportunity are reflected in this report.

Anything less will not stand the scrutiny test and will result in an unacceptable lack of trust in our responsible institutions to recover from the unnecessarily difficult path that the renewable industry has encountered in the journey to date.

It is astounding to reflect on the 700% increase network charges, yet the obvious network interconnectors that the national energy market needs have not been implemented. It truly beggars belief.

The proposed Tasmanian second link's potential has long been obvious.

So too has the SA NSW interconnector, that utilities have proposed and been blocked from doing.

A western Queensland link should also be looked at such as the Copper String proposal that collapsed because Glencore went for gas and generating its own power, leaving the renewables projects that could have fed into this stranded. With gas prices having risen dramatically, it proves this infrastructure was needed.

Indeed it is important for the eastern sea board to be linked to renewable energy rich regions of the west where the

overwhelming historic data shows the sun is shining and the wind is blowing when it is not in their consuming locations.

I wish you and the ESB board the very best in these most important complex deliberations to arrive at the future setting recommendations to be forwarded to COAG.

Yours sincerely

Jim McMillan