28 May 2018

Attention: Ms Sarah Jane Derby
AEMC
ELECTRONICALLY SUBMITTED

Dear Ms Derby

Directions Paper: Reliability Frameworks Review

CS Energy welcomes the opportunity to respond to the Directions Paper of the Reliability Frameworks Review.

In response to the paper, CS Energy makes the following submissions:

- producers cannot ensure the system is perfectly reliable, as building assets for low probability events is just too expensive and risky for them;

- ahead markets and strategic reserves, or even forecasting, aren't direct reliability measures per se, but measures to deal with other potential problems; and

- the most appropriate way of improving reliability and reducing the cost of a reliable system, is the encouragement of demand side participation.

CS Energy's recommendation would be to improve real time price signals and provide the market, including the demand side, the maximum flexibility and discretion to respond. The expectation is demand side participation becoming more competitive, more often, removing any need for involuntary load shedding.

This submission also makes comment on the Reliability and Emergency Reserve Trader (RERT). Accordingly, submissions should also be read as a response to the consultation on the proposed Rule change for Enhanced RERT and restoration of Long notice RERT.

You will find attached further comments from CS Energy.

Yours sincerely,

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The objective

CS Energy agrees that the electricity sector should improve its productivity.

Policymakers should target marginal pricing incentives, removing existing distortions, that have the capacity to re-shape the electricity demand profile. Measures to improve demand side participation will achieve more effective utilisation of electricity infrastructure and enable the market to provide competitively priced electricity to the consumer.

The illustration below schematically represents how the electricity industry is structured to respond to the daily electricity demand profile. In a 24-hour period, electricity demand increases in the morning, enters a lull and then increases as evening approaches, peaks, and then reduces overnight. Base load generators such as CS Energy's Kogan Creek Power Station power the state throughout the day, with intermediate and peak generators operating across the corresponding points in the daily demand cycle.

Illustrative electricity demand profile

The P50 and P10 lines represent peak electricity consumption that will occur on a high probability and lower probability.

Investing for the low probability peak with assets that have a high capital costs is an incredibly risky business. Therefore, the NEM has incentives, such as the Market Price Cap calculated from a target level of reliability, that try to encourage generation investors to manage this risk effectively.

A more productive electricity industry is illustrated schematically below.

The adjusted demand profile (green line) is noticeably flatter than before, and the difference between the demand probabilities is far smaller. With such a profile, electricity assets will have greater utilisation and lower per unit costs of production. The risks associated with investing in network or generation development will be far lower due to greater certainty around utilisation of assets.

Under this scenario, the most cost-effective base load generation will represent a greater proportion of generating capacity. The ability to produce electricity in higher volumes will allow producers to concentrate on incrementally reducing per unit production costs rather than managing the uncertainty of 'peaky' consumer demand.

This will allow the normal market drivers in the to encourage an efficient generation mix as technological advances improve the capacity of alternative generation sources to deliver consistent electricity supply at a reasonable cost.

Under this scenario, network infrastructure will also be more effectively utilised throughout the year, rather than just peak periods. Consumers will be able to afford a high level of reliability and security as, because the assets are highly utilised, the cost per unit of consumption is low. The stranded risk associated with building the infrastructure for peaks and troughs will be reduced, fostering prudent network development.

If the electricity industry achieves these objectives it will improve its productivity while supporting the economic and lifestyle aspirations of consumers.
What directly affects reliability?

The NEM is an "energy only" market auction. Producers are remunerated at increasing prices to the point where the cost of supply exceeds the price the consumer is willing to pay.

Ideally, the NEM auction should have efficient price signals, where consumer demand is rationed with reference to price.

In a free market the economic surplus represents monetary profit obtained by consumers and producers. For consumers this is from purchasing at less than the highest price they were willing to pay (their marginal benefit).

Conversely the producer surplus is the profit by selling at more than the lowest price at which they were willing to sell (their marginal cost).

This is shown in figure 1, which is called "Free-market", with an equilibrium quantity and price being where the two curves intersect.

In the example the demand that chooses not to consume saves money, as it doesn't spend more than it earns – this is called the 'Demand Side Participation (DSP) benefit'.

When the NEM was established, due to the instantaneous nature of electricity production and in the absence of significant voluntary demand side response (rationing), a reasonable marginal benefit of the consumer was expressed as 0.002% loss of load per annum, which was subsequently translated into a price ceiling.

The premise of the 0.002% USE calculation is that the NEM isn't supposed to supply all consumers all the time, because we assume that some won't be willing to pay for it.

If the price ceiling is $100/MWh, well below the maximum price some consumers are willing to pay, it would be theoretically certain that there would be involuntary load shedding, because the market producers would not be incentivised to invest and the demand side would be encouraged to consume.

Continuing the example of $100/MWh ceiling, the options are to write off some unserved energy commensurate with the price ceiling (like the 0.002% in the NEM, yet for $100/MWh it would need to be more USE), or improve the competitiveness of supply (producer) and the demand (consumer) sides.

The obvious answer in the example would be to lift the $100/MWh ceiling to the point where voluntary load shedding (price elasticity) would clear the market.

Yet today's price ceiling is $14,200/MWh so that answer is not obvious. Yet even with this high price ceiling, there are suggestions from AEMO in submissions to this review, that the NEM will still experience low probability reliability events (for many complex reasons), that will be extremely difficult for producers to supply.

If the producer side cannot ensure a reliable supply with these incentives, it is CS Energy's view that the most appropriate solution is to encourage the demand (consumer) side to manage low probability reliability events without involuntary load shedding.

This example also leads CS Energy to the conclusion that scheduling, central demand forecasting and the RERT safety net are not direct reliability measures.

This is because, if the price ceiling doesn't encourage enough investment to meet demand, it doesn't matter how good the demand forecast is, nor does it matter when you schedule reserves, the system will be
unreliable. Additionally, the safety net would stop being a safety net.

CS Energy would characterise ahead markets and strategic reserves, or even central forecasting, as measures to deal with other potential problems:

- ahead markets are being discussed in the context of solving possible failures in coordination / scheduling and system security issues;

- RERT / Strategic Reserves are a safety net, to deal with a possibility that the Reliability Settings are too low and the market fails to provide 0.002% USE; and

- central forecasting is related to determining whether the safety net needs to be enacted by the system operator.

Additionally, if the RERT is activated and it was found that it really was required to maintain the Reliability Standard of 0.002%, (rather than a false positive, based on an error in the central forecast), then it would be clear evidence that a change would be required to result in the market achieving 0.002%.

However, lifting the current price ceiling is too risky for investors and therefore the appropriate solution is to encourage the demand (consumer) side to manage low probability reliability events without involuntary load shedding.

The question is how the NEM will do this.

There are a few examples highlighted in the Directions Paper, such as two options to unbundle demand response from the Financially Responsible Market participant (FRMP) and the RERT. These will be considered by this submission after further discussing the relevance of forecasting and scheduling.

Response to the topics in the consultation

Forecasting and information provision

AEMO demand forecasts have, over many years, been considerably higher than actual demand

The problem with the central forecasts being on the high side is that they become the triggers for the Reliability and Emergency Reserve Trader (RERT) process. The RERT ‘safety net’ is supposed to work when the market is forecast to provide a reliability of less than 99.998%. However, if the market was right and AEMO’s forecast wrong, the RERT has simply acquired reserves and needlessly improved reliability beyond the targeted 0.002% unserved energy (USE). Of course, the converse could be true, but as the analysis in the Directions Paper shows, AEMO forecasts have been higher than demand in previous years.

Ideally participants should be in the best position to make judgements on future demand and supply. Whether participants believe in the central demand forecast, or develop their own, will depend on the financial incentive placed upon them. It is the central agency’s responsibility to disseminate information, such as availability, in a transparent manner to participants, so that participants can form their own views.

What differs between participants and the central operator is that participants will forecast both demand and price to decide whether they need to supply. Given price is a function of the risks of non-supply during times of low reserves it is important that the price envelope of the NEM encourages them to supply (or not to consume, if we consider the demand side).

Day-ahead markets

In response to the AEMC’s consideration of ‘ahead’ markets, CS Energy has the following specific comments:

*Is the information provided by the participants through the pre-dispatch process credible or inaccurate?*

In accordance with the requirements of the National Electricity Rules, the information provided by participants represents their genuine intention in respect of dispatch offers and is therefore extremely credible. Additionally, participants must always be able to satisfy those offers, or to signal a change in intention immediately upon becoming aware that the offer cannot be technically satisfied. In addition, the participants revise the offers closer to dispatch as and when they need to,
provided there is a material change in relevant circumstances. This 'rebidding' is efficient as it repeats the auction as events develop and allows for the market to clear towards an appropriate equilibrium.

Does the system operator have sufficient credible information to operate the system without relying on out-of-market interventions to an inefficient degree?

Given the information provided by participants is credible and accurate, it is CS Energy's view therefore that there must be other uncertainties that are troubling the system operator and requiring it to intervene.

For RERT interventions such uncertainties would relate to unexpected reductions in network or generation supply or uncertainty regarding demand forecasts and the weather. These uncertainties exist irrespective of the scheduling arrangements. Unless the NEM has confidence in the demand side participating to resolve these uncertainties, in the absence of a producer response the system operator must consider the use of load shedding to intervene. Therefore, it is CS Energy's view that a more flexible demand side, which is more competitive, must be the absolute priority, rather than introducing a day ahead market or different forecasting regimes. This is because the latter two, as explained, are not direct reliability measures.

Security interventions are different. The NEM dispatch engine doesn't presently price or allocate costs efficiently for some security services, such as inertia and system strength. This doesn't allow participants to make efficient decisions to either produce or consume these services. It is therefore no surprise that participants don't provide these services and the system operator must intervene.

Does the system operator have sufficient tools available to them in advance of dispatch to maintain system security and/or reliability at an acceptable level?

This question appears to assume that it is AEMO's role to keep the system secure and reliable. In the first instance the market participants do this by ensuring there is adequate supply in response to price signals. If the price is correct and encourages efficient marginal decision making, it doesn't make any difference if the plant is scheduled through AEMO's dispatch engine or whether it is visible to AEMO. Continuing this thinking, it is not efficient for the system operator to take over the control of assets, or to do multi-pass settlement, prior to dispatch if we know the real-time price will be correct. This is because any foreclosing of market activity would inhibit responses by participants to changes in circumstances nearer real time.

Are there significant issues with the current process for market participants committing units for dispatch?

No. There is always a risk that unit commitment may, or may not, be profitable. However, participants do have discretion, subject to known technical limits, to respond to material changes in the market with changes to unit commitment. For a participant that operates units with very rapid start times this is useful and assists in minimising costs and improving profits.

Would a centralised commitment model result in a higher level of dispatch efficiency?

It is CS Energy's view that it would not. The competitive tension that encourages participants to commit units or to activate their demand side participation should move towards a game-theory, Nash equilibrium. It is unlikely this could be replicated through a centralised commitment model, unless participants change the input data, (costs etc.) to prompt AEMO to change the commitment, effectively making AEMO's role redundant.

Are there system security issues that cannot be accommodated under the current market design that an ahead market would address?

No. It is CS Energy's opinion, as stated in the submission to the AEMC's System Security Review, that the NEM dispatch auction should be amended to pay or charge for security services, such as frequency (including inertia/RoCoF), reactive power, ramping and transmission losses. The Rules should look to allocate reliability and system security to Market Participants as this will reveal an efficient cost through competition.

Once the power market auction's deficiencies are resolved, such as using real time calculations and more sophisticated computation, frequency control and security limits could be incorporated into dispatch
calculations and scarcity reflected in the price(s) when the auction clears.

More general comments on ahead markets

Changing from a real-time pricing auction to a day ahead auction would be likely to come at a cost from participants, who will lose flexibility to re-dispatch as the market closes.

Being a market participant, CS Energy does not consider that AEMO should take the job of scheduling and dispatching plant out of the hands of the participants, because participants have the motive of profit (where AEMO does not), and will also be the responders to investment signals, which may not arise if AEMO undertakes the scheduling in a manner other than with regard to profit and earnings certainty.

It is CS Energy's view that the best way to ensure reliability and security is to allow participants to respond to price signals (for both dispatch and investment) free of intervention by the market operator (including through day ahead markets and strategic reserves).

Demand Side Response

As stated earlier, CS Energy does not consider that the supply side (producers) can ensure the system is perfectly reliable, as building assets for low probability events is becoming too expensive and too risky.

Instead of lifting today's price ceiling, which is high enough, the better option is to encourage the demand (consumer) side to manage low probability reliability events.

In time one would hope the demand side participates to such an extent that it significantly reduces the peaks, by lifting the trough and reducing the peak, whilst also narrowing the high and low probability forecasts as explained in the earlier section of this submission.

Ideally, once the demand side participates far more in the market, at far lower prices, the market can set its own level of reliability. This would be proven by the market clearing below the price ceiling and involuntary load shedding being completely replaced by demand side participation.

The Directions Paper outlines two possible approaches for "unbundling" demand side participation from the Financial Responsible Market Participant (FRMP) retailer.

Below is discussion as to how the distribution of the economic surplus, as shown in Figure 1, differs with possible variants of the two approaches explained in the paper as well as through the RERT.

CS Energy's submissions are that the:

- economic surplus is reduced under the baseline method, (even if the provider is scheduled and sets the price) as it must recover opportunity costs of not consuming electricity;
- the non-baseline option has effects closer to the economic surplus in Figure 1; and
- the RERT reduces the economic surplus, and has the potential to adversely affect consumers who may pay too much.

Baseline methods – Option 1

The first method set out in the directions paper requires a baseline calculation before calculating demand response. It is useful that adjustment to any load supplied by the meter (not just specific devices) would be measured against the baseline, thus enlarging the opportunities for response, however there would be behavioural incentives to manipulate the baseline in advance of an event. Unfortunately, the contemplated process is quite administratively complex and requires a leap from paying for proven, metered, consumption to paying for what would have been consumed otherwise. It also includes duplicating multiple retail and wholesale systems, including those retail systems not involved in the DRM.

Figure 2 attempts to analyse how a baseline, scheduled demand response mechanism would work.

The diagram is the same as figure 1, except this time the supply curve changes with the insertion of a portion of the demand curve.
This offsets the supply curve because it is cheaper and results in the DRM setting the price. The DRM provider clears the price at the level using a bid that reflects the opportunity costs of not consuming electricity (the grey area, which only applies once, but is shown twice, on the demand curve and inserted in the supply curve).

Please note we deliberately ignore the fact that the Singapore approach includes prices from the DRM provider, so we assume in this case the DRM provider cannot set the price. The aim of doing this is to try to assess whether their approach of paying 1/3 of the additional Consumer Surplus to the DRM providers is reasonable.

In Figure 3 the supply curve is adjusted as per Figure 2, yet the wholesale price is not calculated set by the DRM provider. The lower price means the Consumer Surplus increases at the expense of the Producer Surplus. By doing this, there is no ‘natural’ surplus for the DRM provider, simply an opportunity cost from not consuming electricity.

It appears the price is now too low; the consumer surplus is artificially high and there needs to be some payment to the DRM. The producer surplus is also too low which may distort investment signals.

Ignoring the detail that the Singaporean approach may include DRM bid prices, the approach is to pay 1/3 of the additional Consumer Surplus to the DRM. This appears too high.

**FRMP and sub-metering – Option 2**

The second option for unbundling the demand side is a method that requires separate local metering (and billing and settlement) of equipment, such as air conditioning and pool pumps, to encourage use of these at times of low pool prices, or to allow a retailer the opportunity to curtail these devices in return for charging the family lower prices on the consumption from these devices. It appears sub-optimal to only incentivise the reduction of consumption on the sub-metered circuits. It may also be duplicative, with another FRMP incurring the cost of installing meters and remote controls. The consumer must settle with two FRMPs adding to transaction costs.

There isn’t an explanation as to how this would be managed in the wholesale mechanism, but could simply be like Figure 1, where the load on the separate meter simply reduces in response to price, as per Demand Side Participation.

There is no explanation as to how it may be scheduled by AEMO via an intermediary and how bids may be submitted, therefore it is difficult to conclude what effects this approach
will have. Should Option 2 simply be metering these controllable loads and then the consumer exercising discretion as to when to buy, then CS Energy would consider Option 2 to be a good proposal as it allows the wholesale price incentives to be transferred to the consumer for them to participate in the market.

**Demand Side Participation**

Option 2 leads onto a scenario where Demand Side Participation (DSP), in a more general sense, is simply the consumers being exposed, at their choosing, to wholesale prices (or a share thereof, as negotiated with their FRMP) and responding accordingly. This was shown in Figure 1. DSP is advantageous because the individual consumer will not have a static marginal benefit of consumption all the time. It will vary depending on occasion.

Ideally the consumer will simply be exposed to pool prices in the manner of their choosing and respond accordingly. Whether this is behavioural change, control systems or active response to data on some billing application / algorithm remains to be seen, but DSP allows the maximum discretion on energy use in response to price. Ideally consumers could have access to some long and short-term hedging options via an innovative retailer or third party (for times when their marginal benefit varied, such as if they had some activity or occasion of high marginal benefit).

It isn't hard to imagine a time in the future where a meter provides consumption data wirelessly to both the retailer and the consumer in real time. This data may then be used by an application provided by a retailer, or by an independent developer to allow the application, possibly on a smartphone or other device to control other appliances wirelessly. The retailer may also provide alerts and information on future prices to encourage the family to adjust their behaviour.

The advantage of real time marginal price incentives encouraging demand side participation over some wholesale baseline demand response mechanism is simple as current regulations allow it to occur without significant investment. In any event it would be near impossible (even if desirable) to apply obligations on these participants to be scheduled and dispatched by AEMO and then for the AER to monitor, investigate and enforce such obligations. It is difficult to envisage AEMO being able to register, dispatch and schedule the demand side without restricting many demand side providers. This is clear from the proposals to unbundle the FRMP which are unsuitable for most consumers.

CS Energy sees nothing stopping DSP in the present regulations, as retailers are now starting to offer wholesale price offerings with some software and hardware services to assist in managing energy consumption in response to price. Flow Power is a good example, showing that not all retailers are large vertically integrated companies.

In any case, those that are vertically integrated must be questioning the validity of investing in new power stations to supply peaky residential load and manage the variability of renewable generation: the cost of doing so may be too high and they run the risk that other retailers that have negotiated some DSP (such as Flow Power) may be able to undercut them.

Therefore, in response to the idea of unbundling demand response through a separate FRMP and using a baseline, an approach that appears to suit some limited, specific circumstances, (where duplicating the FRMP and scheduling the service are possible and cost effective), a better approach may be to start by entitling all consumers access to their own meter data and for them to make this available to third parties for use in applications. A release of data will probably allow a myriad of innovations to proliferate from third party providers.

**Demand side forecasting**

The ability of consumers to be able to exercise discretion in response to price is a good thing. It makes the system more reliable, should reduce costs and increase competition. In theory, there is no need for the system operator to know about demand side participation. The ideal situation would involve the system operator having confidence the market will clear though consumers voluntarily reducing demand at lower prices to avoid indiscriminate load shedding at the price ceiling.

It is because of these comments CS Energy is not supportive of imposing reporting or scheduling requirements on the demand side.
CS Energy does not consider that these obligations are necessary and instead, may represent a barrier to the development of competitive DSP. It is important to allow consumers the maximum discretion as to when they desire to consume electricity.

Reliability and Emergency Reserve Trader and Strategic Reserves

The Reliability Standard and Settings, the price ceiling, act as a 'proxy' bid for consumers with the aim of achieving 0.002% USE.

Figure 4 includes the price ceiling, yet includes RERT and Intervention Pricing.

For simplicity, the example of a price ceiling of $100/MWh is continued. With such a ceiling there would be more than 0.002% of consumption unserved because there would be too little supply.

It is easy to imagine a $100/MWh price ceiling encouraging additional consumption, because the price is lower than it should be, whilst at the same time prohibiting the only tool to ration the demand, which is price.

In Figure 4, the consumers' marginal benefit is shown as a sloping curve as demand increases. Those with the highest benefit are served first. This means, in an ideal situation the consumers unserved are those selected and activated under the RERT.

For suppliers under the RERT ideally their profit from the RERT should be more than their value of their marginal benefit above the $100/MWh \( P_{\text{ceiling}} \). This would provide them the surplus (profit) they would otherwise have expected to receive from consuming electricity (this is the opportunity cost of not consuming electricity). This is shown as the yellow shaded area in Figure 4 and must be paid by other consumers, reducing the green shaded area.

Additionally, with AEMO using RERT to provide reserve capacity to keep the system secure demand must reduce further than the quantity that can be supplied by producers, which is \( Q_{\text{supply}} \). The effect of this to reduce the number of producers supplying electricity, reducing the producer surplus (red) and yet increasing the size and payments under the RERT, which would reduce the consumer surplus (green).

The Rules aim to solve this by introducing 'Intervention Pricing', which aims to calculate a 'what if the intervention had never occurred' price, changing the price back to what is hoped to have been the price without the intervention, thus restoring the producer surplus (at the expense of consumers) to preserve investment signals. If AEMO has activated the RERT when there is no more supply, (indicated by the vertical supply curve in Figure 4), the 'what if', Intervention = 0 price should return to $100/MWh ceiling.

Some producers are no longer generating as much, (they are providing the reserve to manage any contingency), and not receiving the 'what if', Intervention = 0 price. AEMO should compensate them adequately under the Affected Participant compensation arrangements under the Rules (this is shown by the blue shaded area, and must be paid by consumers, deducted from the green area).

However, if AEMO has activated the RERT when there is more supply available, such that the vertical supply curve does not apply, and the what if price is not the $100/MWh ceiling, this means it was an unnecessary use of the RERT.

RERT is worse than the DRM and DSP options

In discussion on the DSP and DRM, CS Energy highlighted different prices, size and distribution of the economic surplus.

CS Energy's opinion is that DSP is the most efficient approach, yet the differences where immaterial when compared to the RERT, because the proposals limited the prices and
distribution of the economic surplus to the current dispatch and settlement period. This is important, because this prevents consumers paying too much.

This contrasts to the RERT where payments to providers are made through negotiation with AEMO, including availability payments. As a result, consumers may end up paying far more than was necessary. Worse still, the costs are also allocated by AEMO and retailers in a manner that does not necessarily lead to efficient marginal decision making in the relevant period – for example, if consumers had known they were exposed to $24M of RERT costs on the 19th January 2018, would the level of consumption have been the same? What about the other costs of the RERT, the further $27M of AEMO’s costs and ARENA’s payments? What affect would these costs have had on consumers?

It is the opinion of CS Energy that even if RERT worked as shown above, consumers, represented by the green area, would be better off leaving the market to clear at its free market equilibrium, with DSP.

The reasons are as follows:

- **RERT is a ‘safety net’ for failure to set the price ceiling to achieve the 0.002% Standard.** This means that should the RERT have been required, (not just forecast to be required), the USE would otherwise have been greater than 0.002%: logically this means the price ceiling would need to increase to keep the RERT as the safety net;

- **intervention ‘what if’ pricing only works to redistribute the surplus from consumers to producers if there is true scarcity, otherwise the ‘what if’ price simply reflects the price that the market could have supplied consumers.**

In theory CS Energy believes the yellow area in Figure 4 is the amount that AEMO would need to pay, at a minimum to acquire the reserves through RERT.

In practice AEMO may:

- need to pay more to RERT providers than envisaged above;

- **pay on far more favourable terms (such as availability payments); or**

- **use the RERT unnecessarily or before other market reserves are used.**

CS Energy understands the above discussion is theoretical. Yet it must be remembered that the construct of the Reliability Standard and Reliability Settings are a theoretical exercise.

While theoretically logical, increasing the price ceiling is not recommended by CS Energy under current circumstances. This is because it is unclear the RERT was necessary to ensure the Reliability Standard was met in 2017-18; nor is it clear that the Reliability Standard will be breached in 2018-19 and onwards.

Additionally, it certainly isn’t clear to CS Energy that a free-market equilibrium cannot occur below the price ceiling; because there must be demand side participation emerging at prices below $14,200/MWh.

It is because of this that CS Energy considers the most appropriate way forward is to focus on how wholesale price signals can be transferred to consumers to allow them to compete effectively, reduce prices and allow the market to clear without involuntary load shedding.

CS Energy does not believe the RERT or Strategic Reserve is the answer, for the effects explained above, but also because it runs the risk of AEMO becoming the default procurer of demand side reserves.

When faced with extremely high RERT prices the incentive on AEMO is to try to reduce them. The easiest way for AEMO to do this is to spread the cost of RERT over a longer period, or to reduce the risk RERT providers need to profit from a RERT contract.

The obvious approach for AEMO is longer term contracts with availability payments. By doing this AEMO may, at face value at least, reduce the costs of RERT, yet it is accepting on behalf of consumers the risk that the payments aren’t necessary. Given reliability events are relatively low probability, this is a significant concession and would falsely present the RERT as cheaper than it really is.

It also runs against the very premise of the NEM, in that investors should bear the risk of their investments (irrespective of whether they are from the producer or demand side).