SUBMISSION TO DRAFT REPORT (Energy Value) of DISTRIBUTED GENERATION INQUIRY BY ESSENTIAL SERVICES COMMISSION

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Submissions should be marked Submission to Draft Report (Energy Value) of Distributed Generation Inquiry, and sent by email to: DGInquiry@esc.vic.gov.au.

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Introduction and Overview of Issues

This submission should be read in conjunction with my original submission to the ESC Discussion paper.

In particular:

- The ESC still fails to consider the importance of attempting to identify and evaluate issues that are difficult to quantify, as clearly required by COAG *Best Practice Regulation A Guide For Ministerial Councils And National Standard Setting Bodies.* This issue was discussed at length in my original submission. **While ESC may consider itself not bound by such guidelines, they set reasonable criteria for public bodies to apply.**
- The ESC ignores the issue of the fair allocation of revenue from resale by retailers of electricity exported by DG and storage hosts. While this may be outside its terms of

reference, it is fundamental to the setting of a reasonable price for a FiT. **If ESC wishes to ignore this issue, it should make a clear recommendation to government that it be evaluated as a matter of urgency by another agency, so it can be factored into setting of a fair FiT.**

The draft report focuses on more sophisticated time and location based estimation of generation savings and proposes that government could specify a value of avoided greenhouse gas emissions that could be incorporated into a Feed-In Tariff. These are positive steps towards rewarding hosts of distributed generation (DG) for the true value of their contribution to a sustainable society and economy.

However, the **ESC has not made a finding on the value of DG to network cost reduction and other network-related benefits.** It proposes further work to be done to estimate network benefits. **It is important that this work does not drag on.** It would be preferable for ESC to make a preliminary estimate of the value of DG to networks and introduced an interim price. First, this reduces the discrimination against emerging technologies of the present approach, which is to apply a value of zero. Second, it will provide an incentive for network operators to cooperate with ESC to address the issue more quickly, especially if they consider the interim price is higher than they think it should be.

The ESC also continues to claim that it cannot find quality information that it can use to assign a value to environmental benefits of distributed generation beyond climate impacts. This is despite some submissions suggesting relevant reports and analysts who could provide such information. Again, it must be recognised that the ESC's approach is a form of discrimination against emerging technologies, because it sets their environmental value at zero, when it is clearly more than zero.

It seems that the ESC needs help here. **So I propose that the government engage the EPA to assist the ESC to estimate the environmental benefits of DG.** They could draw upon extensive global research on costs of various forms of pollution, as well as information resulting from analysis of events such as the Hazelwood mine fire, bushfires, etc.

The ESC also seems unable to identify indirect economic benefits of DG. **The government should establish an independent expert team, led by prominent economists and business analysts, to assist the ESC on this issue.**

On pages 15 and 16, the ESC suggests that consideration of other forms of energy services that change marginal demand profiles, such as energy efficiency and demand management is beyond its terms of reference, and should be dealt with by other processes. **If the government accepts the ESC view, it should act promptly to implement alternative processes that can adequately deal with these issues.**

Issues beyond DG and storage and use of a FiT to deliver benefits to hosts

I still consider that factors that may be associated with DM such as smart demand management, energy efficiency measures and storage will clearly affect the percentage and timing of exports from distributed generation output and, hence, its value. Fundamentally, the electricity network and generation system sees DG exports as a reduction in demand, unless they reach very high levels, when they may appear as new generators that reverse the flow of electricity in part of the network. At the same time, use of storage can create additional energy exports at times, while energy efficiency or demand management can increase the proportion of energy available for export from DG or storage at a given time.

So it is important to develop a broadly applicable 'marginal value of change in energy demand' that can be applied to changes in net demand, whether driven by DG or these other factors, or combinations of them.

The ESC's separation of DG from these other factors is another example of the failure of policy makers to take an integrated and holistic approach to energy service delivery: this will lead to ongoing policy failure. As an interim solution, it may be that the value the ESC estimates for marginal DG exports could be used to place a value on marginal change in demand, until more sophisticated approaches can be developed, presumably by someone other than the ESC. If so, the government should act swiftly to mobilise a process.

The ESC also states that its terms of reference do not require it to explore alternatives to a FiT for delivery of financial benefits in recognition of the value of DG. This may well be the case. But, if it is, again the government needs to either revise the ESC's terms of reference or establish another process to consider options. In its original discussion paper, the ESC argued that it could only consider mechanisms that were easily delivered: this would act as a screen to block out delivery of legitimate rewards to DG hosts by other mechanisms. At a minimum, the ESC should identify all benefits and, where they are not suited to delivery via an FiT, say so and recommend that a process be pursued that can identify and evaluate efficient and equitable ways of rewarding DG hosts appropriately.

Proposed Guiding Principles

The ESC's proposed guiding principles (pages 17 and 18), simplicity, behavioural response and materiality, still act as filters that can block out consideration of legitimate 'value' created by DG. This was discussed in my original submission. These filters could be applied to determination of which factors may be incorporated into a FiT, but AFTER estimation of the true value of DG, not as a filter of what analysis is done. Applying these filters too early in analysis is yet again another form of discrimination against emerging technologies: it basically says ESC will only bother to estimate the value of things it believes can be easily incorporated into a FiT. This is not a comprehensive approach that meets the government's intent.

If the ESC cannot cope with doing a thorough job of analysing options for delivery of true value to DG hosts, it should ask the government to refer the task to an agency that can deliver a comprehensive analysis.

Rejection of use of interim values for DG benefits

It is disappointing that the ESC has deferred consideration of the network benefits of DG to a second stage (p.19). This yet again delays correction of a form of discrimination against emerging technologies, a feature all too common across energy policy in Australia. At a minimum, it could have proposed an interim value based on its initial evaluation.

I note that, on page 29 the ESC rejects my previous proposal that interim values could be applied to FiT pricing on the grounds that it would be irresponsible behaviour for an economic regulator. But the reality is the present situation is far from a perfect pricing system, so the ESC is failing to meet this criterion already. And on pages 31 and 32 it explains how it will make judgements and approximations when estimating the value of DG. **Refusing to take a practical approach for DG with regard to use of interim values based on available information is a form of selective discrimination.** If ESC feels unable to take a practical approach, it should inform the government of the range of values for benefits, and the government could make a decision: governments commonly make such judgements. This would also be consistent with the CoAG principles discussed

in my previous submission. **Indeed the extent of the delays in resolving this issue raises the question of whether compensation for loss of revenue for DG hosts by retailers should be considered from a specified date, such as the original reporting date for this ESC Inquiry. This would increase the pressure for prompt and fair resolution.**

Economic Development Benefits

On page 19, the ESC also proposes that consideration of industry development is outside its terms of reference. Yet the development of the industries that support DG is clearly of value to the economy, as it creates employment, improves productivity, etc. Again, if the ESC judges these issues to be outside its terms of reference, the government must either change its terms of reference or find someone else to do the work.

1-for-1 FiT

The ESC's argument against application of a 1-for-1 FiT (p.20) certainly has a technical and economic basis. However, my view is a practical one: if, when all the benefits of DG are considered (including a carbon price component, network benefits, etc etc), the FiT value is reasonably close to the retail price, then the principle of simplicity (advocated by ESC) would be met by applying a 1-for-1 FiT. It is obviously very easily understood by DG hosts, and easily applied by retailers. Indeed, there may be a case for applying a 1-for-1 FiT even if it differs from the 'true value' of DG, then adjusting its financial impact via changes in fixed charges or other components of pricing to correct for any difference between that level of FiT and the actual true value.

A recent report published by RenewEconomy web newsletter summarises several studies that suggest a 1-for-1 FiT can be justified (see http://reneweconomy.com.au/2016/rooftop-solar-net-metering-is-a-net-benefit-28170). The 8 page article comments:

> "So what does the accumulating national literature on costs and benefits of net metering [the US language for a 1-for-1 FiT] say? Increasingly it concludes— whether conducted by PUCs, national labs, or academics — that the economic benefits of net metering actually outweigh the costs and impose no significant cost increase for non-solar customers. Far from a net cost, net metering is in most cases a net benefit—for the utility and for non-solar rate-payers."

It is essential that the ESC review this work while finalising its report.

The ESC's argument that, to enter the market at the retail end would require DG hosts to meet all sorts of regulatory and commercial requirements is absurd. In practice we are seeing various parties granted partial exemptions from these requirements already, so precedents for simpler frameworks are being set. Further, as proposed in NAGA's submission to ESC last year (*ESC's Modernising Victoria's Energy Licence Framework issues paper*) late in 2015, alternative consumer protection models, similar to third party insurance or builder insurance schemes could protect consumers without requiring onerous individual obligations on small DG hosts or small retailers.

It is time we moved beyond excuses and focused on developing frameworks that actually work in the emerging increasingly diverse energy market. It is very obvious that DG competes with retail electricity sales at the meter. **We have to develop frameworks that treats DG hosts fairly, protect consumers and facilitate competition between DG and the existing electricity system.**

Line Losses

On p.33 the ESC outlines its approach to estimating line losses. AEMO does not seem to estimate line losses for regions on a time/electricity flow rate basis. Losses vary with the square of the current

flowing, so they are much larger at times of peak demand. So if peak demand is, say, 50% higher than average, the losses will be 2.25 times the average during peak periods. Ideally, valuation of DG benefits should recognise this time dimension, as it could significantly increase the FiT during peak periods as well as reducing network investment costs (to be dealt with separately by ESC). It would be useful if ESC could clarify this, and incorporate a time dimension in its estimation of value of DG, even if it is at a basic level.

It would also be desirable to apply local loss factors for SWER (Single Wire Earth Return) power lines in rural areas, which often have very large losses of around 50%. It makes economic sense to take these very large losses into account. It may be more appropriate to include these refinements in treatment of line losses in the network study instead of the wholesale energy price valuation.

Avoided market and ancillary charges (p.33)

ESC points out that retailers do not pay these charges for DG. I note that on page 41, ESC states that this cost in its most recent determination was 0.1 cents/kWh. However, this begs the question of whether retailers factor this into their FiT pricing. **It would be useful if the government could fund a study by others to look at how much more DG could contribute to avoiding these charges if equipment was suitably designed.**

Behavioural response (p.56)

In evaluating the likely behavioural response to the various tariff options the ESC used 'judgement'. **This is a remarkable contrast to its reluctance to use judgement in relation to other aspects of determination of the value of DG**, as discussed earlier. Market research, field trials and other mechanisms would seem justified for a 'responsible' behaviour criterion to be met by ESC. And ESC could revisit its position on making judgements based on limited information on other areas, based on this precedent.

Cost of Implementation of multi-rate tariffs

It would be useful to seek estimates of cost of calculation and administration of more complex pricing structures from third parties such as DM Response businesses and consumer advocates, as well as retailers. Retailers have a clear incentive to overstate such costs, and other agents may be able to integrate such costs into broader service provision offerings.

Environmental and Social Benefits

The ESC applies a high standard of proof to these factors, and seeks very precise information relative to what it applies elsewhere. For example, it notes that the ATSE study calculates a cost of air pollution per kWh for Australia, then rejects it because it can't define the cost for Victoria. Yet it proposes smearing costs of line losses over three geographic zones of Victoria, so it is prepared to apply a substantial degree of averaging over geography, and (noted earlier) time of day. And aren't we supposed to be working towards a 'national' electricity market which supposedly delivers benefits from interstate linkages? Even if the air pollution reduction occurs in other states, is this not still a worthwhile contribution to Australian society? We accept 'cross-subsidies' between states in many other areas of policy! Further, did ESC approach ATSE to see if they could provide state level estimates?

It seems that ESC is culturally incapable of estimating environmental and social benefits. The government must engage an agency such as the EPA or expert team that can do it properly.

Conclusion

I suppose I should be thankful that some small steps forward have been proposed by ESC on the issue of the true value of DG. But there is a long way to go, and we have already wasted a lot of time at great cost to DG hosts and society.

Also, rapid change continues to flow through the energy sector. ESC risks simply being irrelevant if it does not reframe its thinking and focus more on developing a model for electricity regulation and pricing that reflects the emerging paradigms.