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Attn: Consultation Leader, Open Energy Networks

Open Energy Networks Consultation Paper

I write in relation to the Open Energy Networks Consultation Paper that has been published by the Australian Energy Market Operator (AEMO) and Energy Networks Australia (ENA).

The City of Sydney welcomes the opportunity to provide input on how best to transition to a two-way grid that allows better integration of distributed energy resources.

As the consultation paper establishes, there is a clear and unambiguous trend towards an electricity system that incorporates more and more decentralised energy resources, typically but not only behind-the-meter solar PV and battery storage. Such resources can make an important contribution to the greening of the grid.

In the case of the area governed by the City of Sydney, our community leaders have set a target of net-zero greenhouse gas emissions by 2050 and 50 per cent of electricity from renewable sources by 2030.

Meeting these targets will require a mix of centralised and decentralised, predominantly renewable energy generation. The City acknowledges the essential role of energy networks in ensuring reliability and security of supply while facilitating higher levels of distributed energy resources (DER).

The City agrees that unlocking the potential of DER can smooth the profile of grid and increase the utilisation of network resources, resulting in a more productive and efficient power system for consumers at the local and whole of system levels.

The City acknowledges that substantial thought has gone into consultation paper. It is important that the strategic thinking behind the consultation paper does not become overwhelmed by a focus on technical specifics, and that the high level drivers for fostering change in the electricity system are not forgotten.

The City's overall response to the consultation paper is outlined below.

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Overall recommendations

Unpack the assumptions on which the consultation paper is based

The consultation paper makes an assumption that the coordination of distributed resources is essential to alleviate what could otherwise be challenges to the system. These challenges should be based on real or modelled examples and not simply assumed. At a very minimum, the extent of the challenges should be articulated, i.e. is it likely to occur only in a handful of fringe of grid situations or system wide?

The consultation paper also makes mention that the network charges on electricity bills may rise as networks make costly investments to facilitate higher levels of DER. This may or may not be true (for example, higher levels of local storage may suppress impacts on network costs) but in any case higher network costs are only part of the story.

The bottom line impact on bills is what matters most. Such an assessment must also take into account other factors like reductions in the wholesale cost of energy due to the increasing share of low-marginal-cost distributed energy resources.

Recognise that the value of DER goes beyond network support

The City agrees that there is merit in managing DER as a network resource, and in part valuing DER on the basis of avoided or deferred network investments.

DER is also able to enable greater levels of renewable integration and supply additional resiliency to the networks. Distributed energy adds value through avoided or deferred network expenditure, as well as places downward pressure on wholesale electricity prices. The Electricity Network Transformation Roadmap 2017 report by the ENA and CSIRO estimates potential benefit of \$1.4 billion in avoided network investment.

But there is more to DER than this. Whatever mechanisms are proposed as a result of the Open Energy Networks consultation, they must facilitate the trend toward distributed energy resources and the benefits this brings to all users in the grid whether or not they have installed decentralised energy.

This is well-articulated in the consultation paper itself, and this should remain a guiding principle in developing any follow-on white paper, vis-à-vis:

- “Rather than imposing limits on customers, orchestration can help provide financial incentives to coordinate all elements of the system to work together optimally – and delivered at least cost to all consumers”

Focus on the customer

The intent of ENA and AEMO is well acknowledged to plan for an effective and fair two-way grid. However the network companies and the system operator while well versed in technical expertise, do not have direct interactions or line of sight with customers.

Caution therefore is recommended to test concepts widely with the public before locking in technical solutions that may inadvertently become barriers for decentralised energy.

Significant private investment has been made into DER to date with significantly more to come. This has resulted in savings to all connected customers which otherwise would

not have occurred. It is important that this momentum be supported and not discouraged.

Improve competition

AEMO and AEMC should focus their future efforts on ways to efficiently and openly allow access by aggregators, retailers, virtual power generation and peer-to-peer trading that do not favour a particular provider(s) in order to encourage innovation and competition leading to lower prices.

At this stage, it is not clear what exactly is the best way to achieve this, and there is a distinct risk that a single solution may not be suitable for all situations (or all networks).

A single integrated platform may be seen by many as the preferred option because of its relative simplicity, integration with existing processes, and potential for DER to bid into the wholesale market and increase competition.

However, there may be unexpected consequences from making such a call. Rather than facilitating change, this may stultify the change process, or it may entrench particular players – replacing old hardware-based monopolies with new trading-based monopolies.

More time is needed than has been allowed by the engagement process for the consultation paper, and a wider range of stakeholders need to be engaged.

At the very highest level, it is not certain that a solution is indeed needed at all, and it may very well be that market players are able to devise solutions to better integrate DER in the electricity supply system, without the heavy hand of an official market operator or an approved market participant.

Specific responses to the consultation paper

Responses to specific questions in the consultation paper are set out below:

Pathways for DER to provide value

Consultation Questions:

- Are these sources of value comprehensive and do they represent a suitable set of key use-cases to test potential value release mechanisms?
- Are stakeholders willing to share work they have undertaken, and may not yet be in the public domain, which would help to quantify and prioritise these value streams now and into the future?

The City's view is that the consultation paper does not adequately capture the full value of distributed energy resources, and it is clear from the forums held by AEMO and ENA that many other industry participants agree that this is the case.

Maximising passive DER potential

Consultation Questions:

- Are there additional key challenges presented by passive DER beyond those identified here?
- Is this an appropriate list of new capabilities and actions required to maximise network hosting potential for passive DER?
- What other actions might need to be taken to maximise passive DER potential?

The consultation paper is effective in demonstrating that there are multiple sources of value for passive DER but less effective in demonstrating that these are the only sources of value.

It is clear from the forums held by AEMO and ENA that many other industry participants agree that this is the case. The environmental benefits of passive DER, for example, were repeatedly raised at the consultation forums.

On this basis, the City considers, it is too early to settle on a definitive set of DER benefits, and much more consultation is needed.

Maximising active DER potential

Consultation Questions:

- Are these the key challenges presented by active DER?
- Would resolution of the key impediments listed be sufficient to release the additional value available from active DER?
- What other actions might need to be taken to maximise active DER potential?
- What are the challenges in managing the new and emerging markets for DER?
- At what point is coordination of the Wholesale, FCAS and new markets for DER required?

The consultation paper is more effective in demonstrating that there are multiple impacts on the established system of distribution than it is in evaluating what the quantum of these effects are, or whether these are the only consequences.

It is clear from the forums held by AEMO and ENA that many other industry participants agree that this is the case. The environmental benefits of active DER, for example, were repeatedly raised at the consultation forums.

On this basis, the City considers, it is too early to settle on a definitive set of DER benefits, and much more consultation is needed.

Frameworks for DER optimisation within distribution network limits

Consultation Questions:

- How do aggregators best see themselves interfacing with the market?
- Have the advantages and disadvantages of each model been appropriately described?
- Are there other reasons why any of these (or alternative) models should be preferred?

Both in the consultation paper and at the stakeholder forums, considerable emphasis was laid on the need to develop a suitable model (or models) to manage the impacts of increasing amounts of DER, and to place positive or negative value on these impacts.

It is too early to say whether the way that management of DER has emerged to date, or models that are already in existence to manage electricity markets (notably, AEMO itself), provide a suitable basis to manage DER into the medium or long term future. There is a serious risk that a model might be adopted that turns out to be an impediment in transition to a low-carbon future, rather than a facilitator.

It is clear from the forums held by AEMO and ENA that many other industry participants agree that this is the case.

On this basis, the City considers, it is too early to settle on a preferred model for the future management of distribution markets.

Immediate actions to improve DER coordination

Consultation Questions:

- Are these the right actions for the AEMO and Energy Networks Australia to consider to improve the coordination of DER?
- Are there other immediate actions that could be undertaken to aid the coordination of DER?

The City acknowledges that the current mechanisms in place to manage the increasing presence of DER are imperfect and incomplete.

However, the City is not convinced that adopting an essentially technically-driven set of solutions, heavily influenced by the interests of major infrastructure providers like electricity networks, is the right way to go.

Again, it is clear from the forums held by AEMO and ENA that many other industry participants agree that this is the case. Further discussions with other industry stakeholders, such as electricity consumer advocates, suggest that the City's concerns are widely held.

Consequently, while the City is appreciative of the willingness of major established players such as AEMO and distribution networks to put options for future management of the electricity system up for public discussion.

However, the City considers that the interests of a much broader range of stakeholders needs to be brought into the discussion, and the debate about future management of distribution markets needs to be translated into terms that a much wider group of potential stakeholders – most notably, mass market energy consumers – are able to comprehend.

To date, that has not happened.

Accordingly, the City asks for the discussion about actions to better coordinate DER to be opened up to a much wider audience, before any decisions are taken that cannot in the future be undone.

For any questions about this submission, please contact the City's Commercial Manager Green Infrastructure, Chris Barrett on 02 9265 9004 or at cbarrett@cityofsydney.nsw.gov.au

Yours sincerely



Kim Woodbury
Chief Operating Officer