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| **Date:**<br>Thursday 6 December 2018 | **Start time:**<br>1pm | **Finish time:**<br>4pm | **Venue:**<br>Whittaker Room<br>Powerlink<br>33 Harold Street<br>Virginia QLD 4014 | **Meeting no:**<br>12 |
| **Facilitator:** Gerard Reilly (Powerlink) | | **Minutes:** Nicole Maguire and Kiara Bowles (Powerlink) | | |
| **Attendees:**<br>Shelley Ashe (Energy Consumers Australia)<br>Andrew Barger (Queensland Resources Council)<br>Erin Bledsoe (Shell/QGC)<br>Liam Byrnes (Aurizon)<br>Georgina Davis (Queensland Farmers' Federation)<br>John Gardner (CSIRO)<br>Mark Grenning (Energy Users Association of Australia)<br>Robyn Robinson (Council of the Ageing)<br>Dan San Martin (Energy Queensland)<br><br>**Powerlink panel members:**<br>Chris Evans<br>Narelle Fortescue<br>Norike Ganhao<br>Jenny Harris<br><br>**Powerlink observers***:*<br>Julian Thomas<br>Enrique Montiel<br>Peta Starkey | **Apologies:**<br>Ian Christmas (Edify Energy)<br>Chris Hazzard (St Vincent de Paul Society)<br>David Hiette (BMA)<br>Sam Pocock (Energy Queensland)<br>Jennifer Purdie (Adani Australia Renewables)<br>Steve Straughan (Aurizon) | | **Powerlink presenters:**<br>Gerard Reilly<br>Roger Smith<br>Kev Kehl<br>Daniel Andersen | |
| **Attachments will include all documents provided to panel members at the meeting including:**<br>PowerPoint presentation and pre-reading documents | | | | |

| Item | Discussion | Action | Due date | Who |
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| 1 | **Welcome to Powerlink, introductions and overview of agenda**<br>**–** Gerard Reilly, General Manager Communications | | | |
| 2 | **Powerlink's stakeholder survey results**<br>**–** Gerard Reilly<br><br>Summary:<br>• Methodology used to gather stakeholder insights<br>• High-level results of social licence to operate (SLO) scores and feedback from panel members received during survey<br>• Highlights general upward trend in measures over time.<br><br>**Comments (C), questions (Q) and Powerlink response (R)**<br><br>**Q:** Do other Transmission Network Service Providers (TNSPs) do a similar survey?<br><br>**R:** Some might, however we're not sure if they use the same methodology as Powerlink.<br><br>**Q:** It appears the 'motivation to collaborate' measure for Customer Panel members who participated in the survey is lower than the overall average. Do you have any insights on why this is the case?<br><br>**C:** It could be that the panel is already engaging regularly with Powerlink and their motivation to collaborate is already being met. For other groups, this might be an unmet need which reflects a different score.<br><br>**Q:** Do you have time series data on the SLO score? Has it improved over time? | Provide an overview of | January 2019 | Gerard Reilly |

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| | **R:** We have been tracking our SLO score since 2012. There is an upward trend in this measure since 2012.<br><br>**C:** In terms of your methodology, I can see the survey alternates each year between a comprehensive in-depth survey and an online 'pulse' check-in. This makes the year-to-year comparison tricky.<br><br>**R:** It is a significant investment to undertake the comprehensive survey – both from a cost and time perspective. That is why we opt for a pulse survey every two years. Deloitte has recommended comparing survey results directly when the same methodology is used e.g. comparing 2012, 2014, 2016 and 2018 data.<br><br>**Q:** Why are the landholder results lower than other categories? What's happening there?<br><br>**R:** Landholder engagement is a big focus for Powerlink but it can be a difficult space for us. The bulk of our work with landholders relates to property access and easement rights, as well as biosecurity. We have completed more in-depth surveys specifically with landholders to better understand their perspectives. Sometimes landholders have very long memories from challenges they might have experienced during the construction phase of a project.<br><br>**C:** Due to the geographic extent of our network and the number of properties our infrastructure is situated, we don't have the same amount of face-to-face contact with landholders as with other stakeholders. We are keen to continue working with landholders as best we can and have a dedicated team to manage these relationships. | historical SLO data to the panel via email when more detailed survey results are received. | | |

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| | It's worth noting that we do use these surveys to prioritise our strategic focus. For example, our relationship with local government stakeholders was lower than expected a couple of years ago. We have since dedicated a lot of time to boost our engagement with local government and build these relationships. This recent effort is reflected in our latest survey results.<br><br>It's also pleasing to see that Powerlink's union engagement has improved in this survey too. This is also the result of a dedicated focus with this stakeholder category. | | | |
| 3 | **Update on RIT-T for replacement projects**<br>**–** Roger Smith, Manager Network and Alternate Solutions<br><br>Summary of presentation:<br>• 10 Project Specification Consultation Reports (PSCRs) currently open for consultation<br>• 3 RIT-T processes have been completed following the conclusion of the consultation phase<br>• 15 RIT-T documents are expected to be issued within the next three months.<br><br>**Q:** How many RIT-T submissions or enquiries have you received since the new Rules came in?<br><br>**R:** None. If you have any feedback on making things easier to read or queries about what the information means, please let me know. We've introduced icons and infographics on our website to help improve readability and general understanding. We showed those to the panel at the last meeting.<br><br>**Q:** Who in the panel has looked at RIT-T documents? [Most of the room indicated they had.] | | | |

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| | **Q:** How do Powerlink's RIT-Ts compare with others in the NEM?<br><br>**R**: Around two-thirds of all RIT-T consultations in the NEM are being conducted by Powerlink at the moment.<br><br>**Q:** What is the QNI?<br><br>**R:** The QNI is the interconnector that links Queensland and NSW.<br><br>**C:** Energy Consumers Australia and the Energy Users Association of Australia have been conducting 'deep dives' with Ausgrid about the environmental conditions of 132kV oil-filled cables. While they don't have the requirement to replace the cables, it's at Ausgrid's discretion as to how they manage risk. They accept they may have a network risk until it's suitably determined to allocate funding to complete a replacement project. This is a quantum shift in how risk is assessed to ensure investment decisions take the affordability of electricity into account. This is encouraging as it demonstrates that utilities are not automatically putting these types of projects into the capex budget – they're actively looking at other ways to manage risk.<br><br>**Q:** Is this type of project a significant or material cost?<br><br>**R:** It's around $100 million.<br><br>**Q:** Have they said they'll put that cost through as a 'pass through'?<br><br>**R:** No.<br><br>**C:** We are dealing with similar factors in Queensland that highlight the need to make sure we fully understand our compliance with the *Electricity Act* and that | | | |

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| | it requires us to manage the network in a safe and reliable manner. We need to understand what that means, so we're trying to really drill down into that.<br><br>**C:** Generally the amount of capex requested in reset processes was greater than needed. Now the emphasis really is on risk analysis. I like to affectionately call it "the fish that John West rejects" i.e. we have good fish in the $100 million catch, but need to reject some fish and maybe go with $20 million worth instead. It's a more active approach to risk management.<br><br>**Q:** Regarding the need to issue an addendum to the Woree Secondary Systems PSCR, what are the implications for getting these cost estimates wrong? What if that had gone through the process with the incorrect costings?<br><br>**R:** If it doesn't change the outcome of the RIT-T process (i.e. the option chosen is the same), there's no material impact. The need is clear – it's about choosing the most economic solution to that need. We've double-checked all our estimates to make sure this oversight doesn't happen again. The learning from this experience is that we need to tighten our scoping process and be very clear on what's a "RIT-T project" Vs. a standalone "modelled project" – to ensure things are suitably scoped[1]. In this case though, there has been no material impact to the assessment.<br><br>**Q:** How far have you stayed true to project estimates when they go to the RAB i.e. you thought it would cost $10 but it actually ends up costing $20?<br><br>**R:** Typically when you're in a revenue reset process, the Australian Energy Regulator (AER) does an assessment to look at our asset management policies and procedures. The AER takes a sample of capital projects actually | | | |

[1] For clarity, a RIT-T project refers to the work required under a specific option to address the identified need. A modelled project is a future project that is anticipated to be needed based upon the specific options and scenario being modelled.

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| | delivered to examine our business cases, scopes and estimates etc. to see how close we landed on the scope and the estimate. I think they started with about 20 capital projects last time.<br><br>**C:** I recall around seven or eight years ago we conducted an augmentation RIT-T process and when it came time to do the work we had spent more than expected. We then re-ran the RIT-T at the higher costs to confirm this solution still came through as the preferred, most economic option.<br><br>**C:** The reality is that you have a pre-determined capex bucket, so if you do spend $20 instead of $10, you obviously have $10 less to spend elsewhere. | | | |
| **4** | **RIT-T process for expanding the NSW-QLD transmission transfer capacity**<br>**–** Kev Kehl, Executive General Manager Strategy and Business Development<br><br>Summary of presentation:<br>• TransGrid and Powerlink have published a PSCR investigating and comparing a range of options to expand transmission transfer capacity across the two states.<br>• The PSCR has identified five types of credible options to increase transfer capacity, building on the options identified in AEMO's Integrated System Plan (ISP).<br>• Significant stakeholder and customer engagement is currently underway.<br><br>**Q:** You mentioned this project is required due to future forecast network congestion. Is that because Queensland exports surplus electricity to NSW?<br><br>**R:** Yes, it's based on transferring electricity into NSW. There are also impacts due to the closure of the Liddell Power Station. Queensland does have | | | |

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| | capacity to export to NSW and most days that spare capacity is going into NSW.<br><br>**C:** This is a national grid, with diversity in generation. Interconnectors like the QNI are integral to the power system we have.<br><br>**Q:** Why is it asymmetric?<br><br>**R:** Limitations occur at both north and south points on the shared grid. You need to factor in these points taking load when you consider these limitations, rather than just measuring grid performance at a single point.<br><br>**Q:** Is that why we're talking more investment in NSW, because it's about their ability to take that load from Queensland?<br><br>**Q:** Is it about customer market benefit or National Electricity Market (NEM) market benefit?<br><br>**C:** All costs spent north of the border are paid for by Queensland consumers.<br><br>**Q:** Are the market assessments that are undertaken Powerlink or NEM focused?<br><br>**R:** NEM focused.<br><br>**C:** We did a RIT-T analysis on the QNI in 2014 which did not satisfy the market benefit requirement at the time, therefore no network investment was made.<br><br>**C:** Ultimately as a consequence of running the NEM we have to share. | | | |

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| | **C:** At some point in the future Queensland might need electrons from NSW to keep the lights on here.<br><br>**C:** At a conceptual level, it involves transferring the cost of what you pay to network charges. As part of RIT-T processes we disclose what the market benefits are. We will also be publicly disclosing how we've worked that out.<br><br>**C:** People are making money out of market volatility. Someone's making money out of it.<br><br>**C:** We need to remember this is a potential investment. AEMO has done quite a bit of work already at a national whole of system level, with the QNI classified as a priority Group 1 project under the ISP, having done a NEM-wide assessment. The Energy Security Board (ESB) is also doing a lot of work in this space and is examining this as a priority for the NEM, which triggers the need to do more analysis.<br><br>**Q:** What is the specific requirement for this project? What is the magnitude of transfer capacity needed or the target we're striving to meet? And what option will meet that target most cost effectively?<br><br>**R:** The ISP identified both short term and higher long term targets. The Liddell Power Station closure will impact the grid by hundreds of megawatts. We're looking at around 460MW northwards and 190MW southwards as part of the Group 1 targets identified.<br><br>**Q:** Isn't AEMO due to provide an updated ISP in 2020?<br><br>**R:** Yes just an update as far as we know. The ESB is still to work out whether the ISP should be produced every year, every second year or in some other timeframe. This RIT-T is a parallel process occurring alongside the work being | | | |

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| | performed by the ESB. It's being discussed at ESB meetings to determine what the minimum capacity requirements are, what the maximum dollar spend is as well as associated timings.<br><br>**C:** Powerlink representatives attended three of the four ESB workshops and there were some key themes from consumers. What is the target you're trying to hit, what's the minimum capacity required and what is the maximum dollar spend?<br><br>**C:** From a customer perspective, there doesn't seem to be a lot of confidence that the ISP considers the cost to consumers.<br><br>**C:** That's why we are running the RIT-T process as it's an opportunity to engage, share information on this potential investment and seek customers' views.<br><br>**C:** The options aren't mutually exclusive – there is some commonality between all options.<br><br>**C:** Ultimately, AEMO is saying the lights will go out unless we action the Group 1 projects. They are clearly telling everyone the lights will go out if we don't pursue these projects.<br><br>**Q:** Regarding grid connected battery systems – are we talking about a single large battery system? Or is that a battery north and south?<br><br>**R:** It could be either a virtual system or single connection point. We are examining these options as part of the RIT-T process.<br><br>**C:** Discussion has been held at ESB workshops on this. Consumers raised concerns about the suitability of the ISP and asked about what might look like | | | |

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| | the right answer in the ISP versus new options now potentially suitable that weren't around during the ISP development. The idea is that the RIT-T process gives us the ability to consider new information, look at more options and include them, and then robustly test those other options that have since emerged.<br><br>**C:** Powerlink is supportive of the RIT-T process for projects like this.<br><br>**C:** The Australian Energy Market Commission is looking to take that option away from TSNPs through the Coordination of Generation and Transmission Investment (COGATI) isn't it?<br><br>**R:** We're looking to try and land somewhere in the middle, where we have regard to detailed plans and procedures, identify all options and then can make an assessment of whether it's the right option.<br><br>**C:** AEMO is very concerned about the Group 1 projects for the entire NEM aren't they? They need to put them in place.<br><br>**C:** If the Council of Australian Governments (COAG) Energy Council wants them to happen faster, that's fine, but it shouldn't be part of the RAB. They need to pay an appropriate share and wear some of the cost. It shouldn't all be paid for by consumers.<br><br>**C:** Affordability has to be a constraint. We need to ensure that our money is being spent appropriately and that we're looking at other costing models. We need to look at modular options, and modular opportunities on the network. Otherwise, customers bear the whole risk of the ISP costs. | | | |

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| | **C:** The Australian Competition and Consumer Commission (ACCC) says the wholesale and retail electricity markets aren't working properly and customers are paying for inefficiencies.<br><br>**C:** What if this second RIT-T process confirms an option where customers bear the whole cost? Where the whole cost is transferred to customers?<br><br>**C:** The RIT-T process is predicated on the efficient operation of the market.<br><br>**Q:** Traditionally we didn't want to rely on Basslink. How do you take into account a more interconnected system that introduces more interconnector risk?<br><br>**C:** This has also been raised in ESB workshops. It's been discussed that we may require COAG direction on what factors or scenarios that AEMO must take into account on things like government policy, network resilience and interconnector risks. We're waiting to see what happens at the next COAG meeting in December.<br><br>**C:** There is so much deliberation around these matters. I'm in favour of having a transparent debate on what the real losses are with the increased impact of renewables. But proponents aren't paying for the NEM, consumers are.<br><br>**C:** We need to look at different funding models. We've highlighted this previously.<br><br>**C:** It would be helpful to have an impact statement for consumers on what the real benefits are for 'mum and dad' consumers regarding this type of investment. What's the estimate of benefit to Queensland consumers? | | | |

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| | **C:** I wonder if your Non-Network Engagement Stakeholder Register group might be interested in this kind of information too.<br><br>**Q:** How did you decide which projects are classified as Stage 1 and 2 options?<br><br>**R:** Stage 1 and 2 projects are grouped together like that in the ISP. They are then subject to the RIT-T process accordingly so we can establish where the benefits are maximised.<br><br>*Please refer to Appendix A for details of active group discussion on this topic.* | | | |
| **5** | **Acknowledgment of thanks to the Customer Panel**<br>- Gerard Reilly<br><br>Summary of discussion:<br>• Our sincere thanks to panel members for their continued valued input and involvement during 2018.<br>• We look forward to working alongside the panel in 2019 and will be in touch shortly with proposed meeting dates for next year.<br>• There is the potential for an in-depth co-design workshop regarding Revenue Reset engagement activities in early 2019.<br>• Powerlink welcomes feedback on any topics the panel would like to cover.<br><br>**C:** I'm interested to know what Powerlink thinks of the AER's benchmarking data report. | Consider the AER's benchmarking data report as an agenda item for a future meeting. | February 2019 | Gerard Reilly |

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| | **C:** When scheduling meeting dates for 2019, it would be beneficial for Powerlink to check what other consultations are being held around the same time to avoid meeting clashes. | Investigate other key consultation dates for 2019 prior to setting panel meeting dates. | January 2019 | Kiara Bowles |
| **6** | **Transmission Network Vision**<br>**–** Daniel Andersen, Manager Network Strategy<br><br>Summary of presentation:<br>• The Network Vision has progressed since the last panel meeting with the selection of four scenarios for greater analysis.<br>• Each scenario has different characteristics and considerations, for the panel's consideration.<br><br>**Q:** When you refer to energy consumption, is that total grid demand?<br><br>**R:** It refers to total energy demand/consumption as a whole.<br><br>**Q:** Is there peer-to-peer trading in the 'rise of the prosumer' scenario?<br><br>**R**: Yes.<br><br>**Q:** In your slides with an overview of each scenario, it seems odd to group distribution and transmission together when their roles are quite different?<br><br>**R:** This categorisation was pulled from the CSIRO's work on Future Grid scenarios, which bundled these together. | | | |

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| | **Q:** In the 'community renewables' scenario, it looks as though transmission will be centralised and integrated into storage. Does this mean transmission charges will be cheaper?<br><br>**R:** We see it as a complementary arrangement. There's not really one solution – you need to diversify.<br><br>**C:** In the 'renewables thrive' scenario, if a TNSP takes on a storage role it becomes a participant in the market. This fundamentally changes our role in the market. The degree of regulatory change for this to occur is really high.<br><br>**C:** You need to look at large-scale Vs. small-scale thinking for how various generators interrelate in the market. You need to examine a range of scenarios.<br><br>**Q:** In the 'set and forget' scenario, are we still building coal-fired power stations? AEMO is saying that in years to come, traditional generation will still be required. So how is this different?<br><br>**C:** In this scenario, renewables don't take off. But because demand is still high, you're potentially facing stability issues on the grid.<br><br>**Q:** Out of the four scenarios, is this the one that could conceivably include coal-fired generation in the mix?<br><br>**C:** Yes, in this scenario large-scale industrial power producers still play a role.<br><br>*Please refer to Appendix B for details of active group discussion on this topic.* | | | |
| **7** | **Meeting closed at 4.10pm** | | | |

**Appendix A – Group discussion notes regarding a range of options considered as part of the RIT-T process for expanding the NSW-QLD transmission transfer capacity**

*All options were included in the room as large worksheets to guide discussion. However, due to time constraints, not every option was examined by the group. The summary below records all thoughts shared during the session.*

# OPTION 1

### *OPTION 1A - Uprate Liddell to Tamworth lines and install dynamic reactive support*

| PROS | CONS |
|---|---|
| • Low cost to Queensland consumers with increased capacity north | • Increased capacity but greater impact if there's an outage/impact to network |

### *OPTION 1B - Uprate Liddell to Tamworth lines only*

| PROS | CONS |
|---|---|
| • *None recorded by the group* | • Only increases northerly transfer |

### *OPTION 1D - Sapphire substation cut into line 8C and a mid-point switching station between Dumaresq and Bulli Creek*

| PROS | CONS |
|---|---|
| • Mainly greenfield<br>• Less expensive option<br>• Potential partial funding by generator | • Potential stranded asset down the track<br>• Need quick payback period on substation |

## OPTION 2

### *OPTION 2 - A new single-circuit 330 kV line from NSW to Queensland*

| PROS | CONS |
|---|---|
| • Could connect more renewable connections<br>• If assumptions change do RIT-T processes have to start all over – who decides that? | • Delayed delivery – long timeframes<br>• Risks to consumers<br>• Would there be any flow-on impacts on the distribution networks as a result? Needs to be factored in from cost perspective. |

## OPTION 3

### *Option 3A – 330 kV double circuit line between Bulli Creek and Armidale*

| PROS | CONS |
|---|---|
| • Gives much higher limit<br>• More capacity for not much greater spend | • *None recorded during discussion* |

**General comments on communications tools to support this project's RIT-T process**

- In addition to the PSCR Summary, produce another brief document and publish it separately from the RIT-T PSCR (don't re-issue an amended PSCR)
- Additional information that would be useful to the panel:
    - Add current capacity to summary table for comparison, as well as potentially a picture from page 2 of the full PSCR regarding what AEMO's ISP recommended for the two expansions.
    - What are we actually asking for? (i.e. for TNSPs to do Stages 1 and 2 together?)
    - Will we re-assess the need and cost of Stage 2 later? How? Under what conditions would we re-examine Stage 2?
    - Estimate of costs to Queensland (would these be capex or opex?)
- Panel member/s indicated they would be happy to review a draft.

## Appendix B – Group discussion notes regarding Transmission Network Vision

Seeking feedback on:

1. The key opportunities for a transmission company presented by the four scenarios
2. Which scenario do you think delivers the best outcomes for customers and why?

### 1. Key opportunities

**RISE OF THE PROSUMER**

- Don't see a lot of opportunity for TNSPs
- Will need to diversify
- Delivery of batteries
- Own batteries and deliver batteries
- Bigger "pie" - so perhaps still relevant
- A rise in non-reg assets could be the opportunity rather than traditional regulatory role
- Higher users are likely to collate with high producers – limiting the role for TNSPs
- Cyber security is an increasing risk → possible opportunities for smaller scale disconnection (from NEM) transmission networks to maintain security and reliability
- Keeping the lights on for those who can't afford to be prosumers (the energy ghetto)

**RENEWABLES THRIVE**

- Become a market participant → as an unregulated service
- Ring fencing implications
- Strengthening capacity of the network to meet large renewables resource in Queensland
- Investment potentially in geographically diverse regions
- Network become broader (covers more area)
- Large size drives potential takeovers of other TNSPs
- Stranded Asset Risk
- Impacted by future energy supply
- For new as well as existing network
- Pioneer funding models so that that customers don't pay for new network developments

**SET AND FORGET**

- Act as a an aggregator → demand management at a transmission level
- Build virtual power plants
- BAU for transmission
- Use grid level storage to address balancing issues
- Data is crucial in all scenarios
- Data driven decisions
- Bespoke or tailored reliability levels (to meet different social services)
- Close the gap between “haves” and “have nots”
- Does boundary between TNSPs and DNSPs disappear?
- GOC → trust to provide services and rise of cyber security

**COMMUNITY RENEWABLES**

- Very little role for transmission, significant risk of asset write-down
- Competitive supply of industrial loads
- Smoothing of loads (possibly not for transmission)
- Back-up (through batteries or generation) backbone of interconnection (no new network)
- Possibility of fuelling stations
- Supply bulk transport (electrified)
- Hydrogen Electrolysers
- What actions will deliver affordable, individualised and optimised outcomes for customers?
- Do what is good for large customers
- Good for consumers (balance → competitive)

**Scenario that delivers the best outcomes for customers**
*Panel members were invited to stick a 'dot' on the scenario they believe offers the best customer outcomes.*

| | |
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| **RISE OF THE PROSUMER**<br>5 x dots<br><br>• Control and transparency, ability to adopt new technology<br>• Illusion of control | **RENEWABLES THRIVE**<br>3 x dots<br><br>*(Assumes consumers continue to bear stranded asset risk)*<br>• Assumes that storage costs continue to drop<br>• Assumes governments give large subsidies or generators co-contribute<br>• Demand management opportunities |
| **SET AND FORGET**<br>3 x dots<br><br>• Lowest cost<br>• Provides outcomes that are affordable, individualised and co-optimised for consumers<br>• Vision should reflect priorities in the Energy Charter | **COMMUNITY RENEWABLES**<br>5 x dots<br><br>• Long-term benefits for consumers from lower consumption<br>• Low cost, low carbon<br>• Assumes government gives large subsidies so costs not fully borne in electricity prices |