AUSTRALIAN ENERGY COUNCIL

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The Regulatory Investment Test for Distribution (RIT-D) – rule change proposal

The Australian Energy Council (AEC) is proposing a reduction in the cost threshold in the Regulatory Investment Test for Distribution (RIT-D). The AEC's proposed rule would apply the RIT-D to a project where the estimated capital cost for the most expensive credible option is $1 million or more.

The AEC is the industry body representing 22 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia and sell gas and electricity to over 10 million homes and businesses.

The AEC has examined publicly available data to assess the performance of the RIT-D against its objectives. As the Commission has recognised, non-network services are needed to provide both an effective competitive alternative to distribution businesses' capital expenditure plans under the RIT-D, but also importantly to develop the competitive market for non- network alternatives. A flourishing competitive market in these alternatives is contemplated in decisions including the Final Determination on the Contestability of Energy Services and the more recent Review of Regulatory Frameworks for Stand-alone power systems (SAPS). The current RIT-D design does not support the emergence of such markets.

As an effective competitive alternative to distribution businesses' capital expenditure plans, the RIT-D is not delivering. The AER's 2018 review of the RIT-D Guidelines demonstrated this; the AER identified only one successful non-network project from 10 competitive assessments and 16 RIT-D reviews since the RIT-D's introduction in 2013.

Network Distribution Annual Planning Reports (DAPR) project data suggest in recent years there have actually been fewer augmentation projects, and falling average project costs, at the same time as the RIT-D cost threshold has been increased. The DAPR data also suggests the extension of the RIT-D to include refurbishment and replacement projects is unlikely to fill the gap. Refurbishment and replacement projects also appear to have been reducing in number and falling in size. Further, a number of projected refurbishment and replacement projects will be excluded from the RIT-D under the exclusion for projects proposed before the application of the test.

Finally, top down analysis of distribution network capital expenditures raises questions about the scope and application of the exemptions to the RIT-D test given the small number of projects that

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have proceeded to a full assessment relative to relevant network capital expenditures over the period since the introduction of the RIT-D.

The attached rule change proposal provides further detail about each of these key issues.

Any questions about the rule change should be addressed to David Markham by email to david.markham@energycouncil.com.au or by telephone on (03) 9205 3107.

Yours sincerely,

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Reducing the RIT-D Cost Threshold: The AEC's Rule Change Proposal

What we're proposing

The Australian Energy Council (AEC) is proposing a reduction in the Regulatory Investment Test for Distribution (RIT-D) cost threshold to apply the RIT-D to a project where the estimated capital cost for the most expensive credible option is $1 million or more.

At the current cost threshold, the evidence shows the RIT-D does not contribute to achieving its original objectives. The original objectives for the RIT-D in the National Framework for Distribution Planning and Expansion (the Framework) envisaged non-network services providing an effective competitive alternative to distribution businesses' capital expenditure plans, benefitting customers as competitive markets reduced customers' costs. This objective, and the role of the RIT-D as part of the Framework reforms in achieving customer benefits, were reaffirmed most recently in the Australian Energy Regulator's (AER) 2018 Review of the RIT-D Guidelines.[1]

The current level of the cost threshold appears to have resulted in at least three, small, unrelated markets for non-network services emerging – Demand Management projects, load shifting projects and projects covered by the RIT-D. This market segmentation was foreseen when the originally proposed cost threshold was increased from $2 million to $5 million, but at the time the Australian Energy Market Commission (AEMC) hoped that a broader non-network services market would emerge, offsetting the acknowledged negative consequences of the higher cost threshold.[2] The broader market was expected to result from networks' Demand Side Engagement strategies, the greater detail required from networks about proposed capital works and wider, more general network regulatory obligations combining to render the RIT-D cost threshold irrelevant. This hope has not been borne out; the acknowledged negative consequences of that earlier decision should now be remedied.

The non-network services industry has been identified as essential to the response to the network challenges of high Distributed Energy Resource penetration. Even as the AER consults on its approach to assessing DER integration expenditures, the non-network service sector should not be held back by existing regulatory design issues.

Why we're proposing this change

First, the evidence shows the RIT-D does not contribute to achieving its original objectives. Non-network services are not providing an effective competitive alternative to distribution businesses' capital expenditure plans and the consequent benefits to customers are not being realised under the current RIT-D design. Only one project meeting the current criteria has resulted in a partial non-network solution being implemented between the RIT-D's inception in 2013 and 2017. According to the AER, over that period only 16 projects commenced the RIT-D process, of which 10 had completed the process.[3] Of that 10, four had been rejected at the early screen; a non-networks option report had been completed and the process terminated. All of the remaining six received offers from the non-network services industry, but only one non-network solution proceeded to form part of the network solution.

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[1] Australian Energy Regulator, *Issues Paper: Review of the application guidelines for the regulatory investment tests,* February 2018, p.18

[2] AEMC, *Final Report: Review of National Framework for Electricity Distribution Network Planning and Expansion,* September 2009, p 50

[3] Or 17, depending on whether you rely on the text (17 projects) or count the projects included in the tables (16 projects). AER, *Issues Paper,* 2018, pps 49 - 51

Secondly, both the AEMC and the AER have expressly considered the RIT-D as a potential model for managing the introduction of competitive non-network solutions into future network services markets.[4] Before this occurs, the flaws of the RIT-D's design, some of which have been recognised from its inception, should be addressed. The major issue with the performance of the RIT-D in pursuit of its objectives, the level of the cost threshold, appears to have resulted in at least three, unrelated markets for non-network services emerging at some cost to the growth and penetration of the non-network services. The operation of certain of the exemptions also needs review, based on estimates by Seed Advisory of the potential RIT-D marketplace, compared with the actual experience. Finally, drawing on our learnings from Essential Energy's data (Attachment C), the embedded assumption in the National Electricity Rules that project cost thresholds should be revised inexorably upwards at regular intervals should be removed. Instead, the RIT-D Guidelines should be reviewed at regular intervals in the context of networks' recent and anticipated capital programs.

The emerging non-network services industry required to respond to the network challenges of high Distributed Energy Resource penetration should not be hampered by similar design issues to those limiting the contribution of the RIT-D.

The benefits to consumers

By increasing the opportunities for the efficient substitution of non-network services for eligible distribution network augmentation and replacement capital projects, the objectives of the Framework Reforms will be delivered to a much greater extent than has been the case to date. The Framework Reforms envisaged effective competition and the development of the contestable non-network services market reinforcing each other. Together with transparent planning frameworks and clear project evaluation, effective competition from the non-network services market would work to achieve the planning framework's ultimate objective, the enhancement of consumers' long-term interests. More projects entering the RIT-D process will increase the opportunity to the non-network services sector and in expanding the sector will provide more effective benefits from competition to customers.

The AEMC's most recent assessment of an earlier proposal by the AEC to lower the cost threshold for the RIT-D used the wrong test to assess the net costs and benefits of the proposed lower cost threshold.[5] The appropriate test is the balance of customer benefits and costs achieved through the contribution of the RIT-D at a lower threshold to the Framework Reforms. The potential increase in networks' costs from some incremental internal assessment of projects under a reduced RIT-D cost threshold is the wrong test, because the appropriate test is customers' benefits from the better performance of the Framework, demanding a two-sided calculation – the additional consumer benefits and any efficient increase in network costs – not the one-sided calculation applied.

There is also a question about how in previous reviews the Commission has sought to balance affected parties' arguments about the effects on their costs and wider benefits of changes to the threshold. In more recent highly contended rule change proposals, the AEMC has sought independent advice on industry's increased costs; this was not done when the increase in the proposed RIT-D cost threshold was introduced in the 2009 Final Decision or in the AEMC's response to the more recent proposal for the reduction in the cost threshold.

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[4] Australian Energy Market Commission, *Economic Regulatory Framework Review: Promoting Efficient Investment in the Grid of the Future,* July 2018, p 98; AER, *Consultation paper: Assessing DER integration expenditure,* November 2019, 5-12, for example.

[5] Australian Energy Market Commission*, Final Determination: National Electricity Amendment (Contestability of energy services) Rule 2017*, COAG Energy Council & Australian Energy Council, 12 December 2017

Splitting the RIT-D and the RIT-T: Rationale

The evidence amply supports arguments that distribution and transmission projects have different characteristics. Specifically, transmission projects covered by the RIT-T are materially larger than distribution projects covered by the RIT-D and the difference between the two may be increasing. Insisting on maintaining the relationship between the two cost thresholds in the face of the available evidence would increase the costs to transmission networks without achieving the desired benefits. Further, there is no evidence that during 2016 –2019 when the two lower cost thresholds diverged there was any material negative impact on consumers' welfare from the divergence.

Why we're proposing this change now

First, the evidence shows the RIT-D does not contribute to achieving the objectives that underlay its introduction. Non-network services are not providing an effective competitive alternative to distribution businesses' capital expenditure plans under the RIT-D. The benefits to customers are not being realised under the current RIT-D design.

Secondly, both the AEMC and the AER have expressly considered the RIT-D as a potential model for managing the introduction of competitive non-network solutions into future network services markets. Before this occurs, the flaws of the RIT-D's design, some of which were recognised from its inception, should be addressed. The emerging non-network services industry required to respond to the network challenges of high Distributed Energy Resource penetration should not be hampered by similar design issues.

The structure of this document

The following section looks at the objectives for the RIT-D in the Framework Reforms, how the RIT-D is currently performing both measured narrowly against its objectives and in the context of the wider information available from the Distribution Annual Planning Reports (DAPRs) introduced as part of the Framework Reforms. That information raises some questions about the level of the cost threshold and its inter-relationship with DNSP augmentation capital expenditures, as well as the operation of the exemptions introduced during the 2011/12 Rule Change Process. Section 3 looks at how the performance of the RIT-D should be measured considering initial expectations and the current experience, while Section 4 describes our reform proposal.

Attachment A uses the AER's data to provide similar information on the RIT-T's performance to that included in Section 2, while Attachment B outlines the results of Seed Advisory's review of the DAPR data from 2013 to 2019 and Seed Advisory's approach to calculating the performance measures cited in this proposal. Attachment C looks in detail at Essential Energy's data from its DAPRs from 2013 to 2019. Their DAPRs contain a high degree of useful data allowing us to look at trends in their franchise area for projects that are potentially eligible for RIT-D coverage since the RIT-D was introduced. Attachment D provides similar data, where available for 3 or more years, from other NSPs' DAPRs for comparison.

The Performance of the RIT-D

After briefly summarising the background to the introduction of the Regulatory Investment Test for distribution (RIT-D), this section looks at what the RIT-D was intended to achieve when introduced as part of the Distribution Network Planning and Expansion Framework ("the Framework") reforms, the expectations for the non-network services sector as part of the Framework reforms, and what we know about the non-network services sectors' opportunities since the introduction of the RIT-D in 2013 in the light of expectations when the Framework reforms were originally envisaged.

Background

The RIT-D was introduced in 2013 as part of the National Framework for Distribution Network Planning and Expansion established by the Australian Energy Market Commission (AEMC).[6] The RIT-D replaced a previous regulatory test for electricity distribution projects originally developed in 1999 by the Australian Consumer and Competition Commission (ACCC) for which the project cost threshold was $1 million.[7] The bulk of the Framework reforms and the general design of the RIT-D, including the cost threshold, were decided in 2009, but the Rule Changes giving effect to the proposals were only determined in 2012, following consultation on the Rule Change proposal. The initial Guidelines for the RIT-D were published in August 2013. The design of and guidelines for the RIT-D closely followed the Regulatory Investment Test for Transmission (RIT-T) provisions.

The original cost threshold proposed for coverage by RIT-D projects during consultations was a project size of $1 to possibly $2 million, increased in the AEMC's 2009 Final Decision to $5 million from $2 million in the Draft Decision.[8] In the Final Decision, the Commission's reasoning for ruling for the higher project threshold was based on: [9]

- Submissions from NSPs in relation to the level of the cost threshold
- Consistency between the RIT-T and RIT-D cost thresholds, reducing the regulatory burden[10]
- Balancing "the regulatory burden placed on DNSPs and the need for a detailed, transparent decision making process while also ensuring distribution investments proceed in a timely manner."
- Effectively focussing the RIT-D on more significant investments, while explicitly recognising that this reduced the coverage of the RIT-D
- The hope that the higher threshold would not preclude small scale non-network solutions meeting an identified distribution need given the process flexibility extended to DNSPs in applying the

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[6] Australian Energy Market Commission, *National Electricity Amendment (Distribution Network Planning and Expansion Framework) Rule, No. 5*, 2012

[7] Australian Energy Regulator, *Issues Paper: Regulatory investment test for distribution,* January 2013, Appendix A

[8] This statement and the discussion that follows refer to the 2009 deliberations where the rationale for the Framework reforms was established. The subsequent Rule Change process looked at the substance of the proposed changes but did not relitigate the rationale for the Framework reforms or revisit significant issues such as the RIT-T and RIT-D cost thresholds. The Scoping and Issues Paper proposed an initial screening test, but no explicit cost threshold. The earlier extensive discussions by the Ministerial Council for Energy on the RIT-T and RIT-D were based on a RIT-D threshold of $1 million. The AEMC received advice from SKM that $2 million was likely to be more appropriate threshold: SKM, *Advice on Development of a National Framework for Electricity Distribution Network Planning and Expansion: Final Report*, V 4.0, 13 May 2009, p. 98. The initial AEMC sponsored stakeholder workshops proposed a target in the $1 to $2 million range for the RIT-D cost threshold, square brackets in the presentations indicating the Commission was yet to arrive at a landing. Australian Energy Market Commission, *Scoping and Issues Paper: Review of National Framework for Electricity Distribution Network Planning and Expansion*, 12 March 2009; Australian Energy Market Commission, *Final Report: Review of National Framework for Electricity Distribution Network Planning and Expansion,* 23 September 2009.

[9] AEMC, *Final Report: Review of National Framework for Electricity Distribution Network Planning and Expansion,* September 2009, pps 49-50

[10] It's unclear whose regulatory burden is the subject of the Commission's reasoning here. Leaving aside questions relating to which test covered joint TNSP/DNSP projects, the only organisation obviously affected by both the RIT-T and the RIT-D is the AER.

RIT-D, combined with the additional possibility that the required Demand Side Engagement Strategy would interact with the RIT-D to facilitate smaller projects, despite the higher proposed threshold.[11,]

The Guidelines, following an Issues Paper and consultations by the Australian Energy Regulator (AER), underwent minor amendments in 2017 to take account of the addition of network replacement or refurbishment (repex) to the projected projects covered by the test, and were reviewed again in 2018, when In line with the requirements of the National Electricity Rules (NER) the AER increased the RIT-D threshold to $6 million with effect from 1 January 2019, reflecting price movements in the interim and restoring the parity between the RIT-T and RIT-D thresholds suspended by previous adjustment to the RIT-T. 12 Consistent with the requirements of the National Electricity Rules (NER), neither review looked at the broader context for the operation of the RIT-D or RIT-T.

What the RIT-D was intended to do

The RIT-D and the RIT-T, by "creating incentives for, and a framework within which, distribution businesses can explore non-network options as alternatives to capital expenditure … assist non-network providers to efficiently plan and offer alternative, cost effective options to network augmentations".[13] Effective competition and the development of the contestable non-network services market reinforce each other and, together with transparent planning frameworks and clear project evaluation, work to achieve the planning framework's ultimate objective, the enhancement of consumers' long-term interests.

In developing the original RIT-D Guidelines, the AER, citing the AEMC, stated the national framework promoted efficient investment decisions by distribution businesses and other market participants by:

- Creating incentives for, and a framework within which, distribution businesses can explore non-network options as alternatives to capital expenditure. This will also incentivise and assist non-network providers to efficiently plan and offer alternative, cost effective options to network augmentations.
- Establishing a clearly defined and efficient planning process which facilitates distribution business to identify and resolve potential problems on their networks. This therefore promotes the efficient operation of, and investment in distribution networks.
- Providing greater transparency to, and information on, distribution business' planning activities. This will assist network users to plan where best to connect to the network, thereby promoting efficient use of electricity services.[14]

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[11] "We also recognise that there is greater potential for small scale non-network solutions to meet an identified distribution need. It may be perceived that the RIT-D should have a threshold which is low enough to subject such investments to public consultation, but which does not impose a disproportionate regulatory burden on DNSPs. We consider that the development of smaller distribution investments that have non-network options would be assisted by the Demand Side Engagement Strategy and the increased reporting of system limitation information under the DAPR. It is therefore the interaction between the Demand Side Engagement Strategy, the DAPR and the RIT-D that would achieve the overall objectives of the national framework. Furthermore, the revenue determination framework under Chapter 6 of the Rules places a discipline on DNSPs to make efficient investments and therefore to explore possible non-network options where appropriate." AEMC, *Final Report: Review of National Framework for Electricity Distribution Network Planning and Expansion,* September 2009, p 50

[12] Australian Energy Regulator, *Final determination: Cost thresholds review for the regulatory investment test*, November 2015; *Final Decision: Application Guidelines for the regulatory investment tests,* December 2018

[13] AER, *Issues Paper,* January 2013*; Better Regulation: Final Decision – Regulatory investment test for distribution and application guidelines,* August 2013; Australian Energy Regulator, *Issues Paper: Review of the application guidelines for the regulatory investment tests,* February 2018; *Final Decision: Application Guidelines for the regulatory investment tests,* December 2018

[14] AER, *Issues Paper,* January 2013, p.11. No particular meaning appears to be attached to the order of the objectives cited; the Executive Summary in the AER's Decision cites an abbreviated summary from the AEMC's Executive Summary which orders the objectives as: a clearly defined and efficient planning process; the provision of greater transparency; and,

Although there were three objectives identified for the RIT-D, the objectives are linked, not stand-alone. The AER recently described the objectives of the RIT-D as "… the RITs promote the long-term interests of electricity consumers in two different, yet related, ways. These include promoting competitive neutrality and investment efficiency."[15] In describing the way in which the RITs achieve these objectives, the AER said:

> The NEM relies on competition to deliver good outcomes for consumers in the contestable parts of the market. Commercial unregulated investment in key assets, such as new generation facilities, storage or new demand response facilities is required for that competition to be effective. The RIT framework recognises that regulated network assets can be both a substitute and a complement for these contestable assets and therefore promotes competitive neutrality in two different ways:
>
> - By limiting the ability of network businesses to make investments that do not pass a cost–benefit analysis, the RITs foster and promote the use of third-party non-network investment in the NEM, thereby promoting competitive outcomes in the contestable part of the sector…
> - By requiring network businesses to consider all credible options before undertaking major investments in the network, they promote the use of third party-provided non-network options, where efficient. This aspect of the RITs is important for promoting competitive neutrality to the extent that our regulatory framework does not sufficiently, in of itself, incentivise network businesses to engage with non-network options and third party providers where efficient. The RITs can result in a RIT proponent procuring non-network services, which it may not have otherwise considered, as being the option with the highest net benefit. By requiring RIT proponents to consider non-network options when applying RITs, this increases the ability of the contestable non-network services market to develop and operate more effectively.
>
> Promoting competitive neutrality is consistent with:
>
> - The original purpose of the regulatory test (the predecessor of the RITs), which relied on 'the key principles of economic efficiency and competitive neutrality' and a 'traditional cost-benefit analysis framework but with a number of qualifications to limit any adverse impacts that regulated network investments might have on the contestable parts of the industry'.
> - The [recently reiterated] COAG EC's observation that the RIT-T 'aims to ensure that all credible options for addressing an identified need are considered, and that the relative merits of network and non-network options are considered on an equal footing'.
> - Our strategic objective to drive effective competition where it is feasible. This promotes the long-term interest of consumers by improving efficiency, innovation and consumer choice.[16]

The AER emphasises the role of the RIT-D (and the RIT-T) in "creating incentives for, and a framework within which, distribution businesses can explore non-network options as alternatives to capital expenditure … assist[ing] non-network providers to efficiently plan and offer alternative, cost effective options to network augmentations". The benefits of effective competition, which requires competitive performance by non-network options, and the development of the contestable non-network services market, providing effective competition work together in the RIT frameworks, reinforce each other.

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assistance in efficient decision making and the potential for credible non-network alternatives to emerge, AER, *Final Decision*, August 2013.

[15] AER, *Issues Paper: Review of the application guidelines for the regulatory investment tests,* February 2018, p 18

[16] AER, *Issues Paper,* 2018, pps 18-19

Together with transparent planning frameworks and clear project evaluation, effective competition in the non-network services sector and a contestable market for the services provided by the non-network services industry work to achieve the planning framework's ultimate objective, the enhancement of consumers' long-term interests. The objectives for the RITs and the Framework reforms are linked, not stand-alone; a thriving non-network services sector is a precondition for competitive tension in network services markets, delivering customer benefits.

What was the expectation for impact of the RIT-D on the non-network services sector?

The development and competitiveness of the non-network services market are integral to achieving the objectives of the RIT-D. The AEMC received advice in 2009 that suggested, with a cost threshold of $2 million, a vibrant non-network services market could exist. Despite this and a wider, unquantified ambition for the sector's national development, the decision to adopt the $5 million cost threshold was recognised as a potential barrier to the sector's development.

There was a broad consensus during the lengthy discussions leading up to and during the AEMC's considerations that non-network solutions were a potential weapon in moderating non-competitive outcomes in network capital expenditures. However, there is virtually no public record of discussions of the existing non-network solution market, its capacity, or expectations of its future growth in proposing this sector as a check on network costs. The sector was anticipated to be national in its coverage: of the few references that can be found, in its early discussions the Commission looked forward to the prospect of national non-network service providers benefitting from nationally aligned network processes in calling for non-network providers' expressions of interest, evaluating projects, etc., as required by the national distribution planning and expansion framework.[17]

What public domain information that can be found relates to the Commission's earlier discussions about a cost threshold between $1 to $2 million. SKM, advising the AEMC, thought a cost threshold of $1 million could be too low, capturing new primary distribution feeders in augmentation expenditure, for example.[18] However, for a representative medium to larger DNSP, capacity driven augmentations alone could give rise to between 10 and 30 projects of $2 million plus a year for inclusion under the RIT-D. If we take the mid-point of SKM's project range and assume there were eight medium to larger DNSPs in the National Electricity Market at the time, this suggests around 160 potential opportunities a year for the non-network solutions industry.[19] SKM had similar arguments in relation to the lower, $1 million threshold for replacement and refurbishment capital expenditures; its default position was that a $2 million threshold was preferable, but that, taking this into account, replacement and refurbishment capital expenditure could be included on a similar basis to augmentation capital expenditure. Nothing in SKM's discussion suggests these projects could not be successfully provided by an efficient non-network services sector.

However, in adopting a higher cost threshold in its Final Decision the Commission recognised the potential for its decision to deter the sector's development:

> "We also recognise that there is greater potential for small scale non-network solutions to meet an identified distribution need. It may be perceived that the RIT-D should have a threshold

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[17] AEMC, *Final Report: Review of National Framework for Electricity Distribution Network Planning and Expansion* 23 September 2009, p.38 and elsewhere

[18] SKM, *Advice on Development of a National Framework for Electricity Distribution Network Planning and Expansion: Final Report*, V 4.0, 13 May 2009, p. 98

[19] Assuming 20 opportunities at each of eight DNSPs (four in Victoria, two in NSW, one each in Queensland and SA).

which is low enough to subject such investments to public consultation, but which does not impose a disproportionate regulatory burden on DNSPs."[20]

The Commission's hope was that, despite this

> "… the development of smaller distribution investments that have non-network options would be assisted by the Demand Side Engagement Strategy and the increased reporting of system limitation information under the DAPR. … the interaction between the Demand Side Engagement Strategy, the DAPR and the RIT-D that would achieve the overall objectives of the national framework. Furthermore, the revenue determination framework under Chapter 6 of the Rules places a discipline on DNSPs to make efficient investments and therefore to explore possible non-network options where appropriate."21

Against the earlier projections and the Commission's hopes for the morphing of the RIT-D, the Demand Side Engagement Strategy, the DAPR and the RIT-D into a wider market, how has the RIT-D performed to date?

How has the RIT-D functioned?

This section looks at public domain data on the RIT-D published by the AER. Similar data collated by the AER for the RIT-T is included in Attachment A.

In looking at this data, the section examines:

- How the RIT-D has performed with the $5 million RIT-D cost threshold and if the RIT-D, with that cost threshold, can be regarded as providing effective competition from the non-network services market to network augmentation projects
- Whether the Commission's hope that the interaction between the Demand Side Engagement Strategy, the DAPR and the RIT-D would achieve the overall objectives of the national framework has been borne out.

Wider information relating to project types, costs thresholds and timelines consolidated from networks DAPRs from 2013 to 2019 by Seed Advisory for the AEC which explores, as far as can be supported from easily accessible data, the performance of other elements of the RIT-D, is also included in this Section.

<u>The performance of the RIT-D: effective competition?</u>

The number of projects proceeding through the RIT-D process and the success rate of non-network services proposals under the RIT-D provide very little support for the proposition that, at the current cost threshold, the RIT-D results in effective competition from the non-network services market to network augmentation projects.

In its 2018 Issues Paper on the RIT Guidelines, the AER published data on the 16 RIT-D projects commenced between 2013 and 2017.[22] The data is a very small population from which to draw conclusions, but it represents the available official data on RIT-D (and RIT-T) projects.

The 16 identified RIT-D projects included six that remained open (RIT-D process incomplete) and 10 completed projects, that is completed the RIT-D process.

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[20] AEMC, *Final Report: Review of National Framework for Electricity Distribution Network Planning and Expansion,* September 2009, p 50

[21] As above

[22] AER, *Issues Paper,* 2018, pps 49 - 51

- The average project size of the 10 completed projects was $14.2 million, significantly increased by two large projects that account for just over $60 million of the $142 million total capital expenditure.
- Excluding these two projects, the average project size was approximately $10 million.

Of the 10 completed projects:

- Four did not proceed past the non-network options report, that is, in four cases the network reported no feasible non-network options existed and closed the RIT-D process.
- All six of the projects that proceeded to call for non-network options received proposals from the non-network options sector. With only two exceptions, only one non-network option proposal was received.
- Of the six proposals receiving non-network option proposals, only one non-network solution formed part of the network's final preferred solution.

At an aggregate level, this rate of RIT-D activity by the networks averages just over one project per network going through the RIT-D evaluation process over a five-year period. In practice, the AER's data shows some networks (Endeavour, United Energy, Jemena, and Ergon) had multiple RIT-D projects over the five years, while Ausgrid, Essential, EvoEnergy (ActewAGL), Energex, TasNetworks and AusNet Services had none.

Considered as an indicator of effective competition from the non-network services market, this data suggests the RIT-D is at best weak in increasing competition. Although some networks have commenced the RIT-D process for a number of projects, the absence of any RIT-D evaluations by just under 50 percent of distribution networks is not indicative of a strongly performing widespread effective non-network services market under the RIT-D. The success rate of the non-network services proposals provides even less support for this proposition, at one in 10 or one in 16 depending on your preferred measure.

<u>One market for non-network services or multiple markets?</u>

The Commission's hope that the interaction between the Demand Side Engagement Strategy, the DAPR and the RIT-D would achieve the overall objectives of the national framework has not been borne out. Seed's analysis of the DAPRs suggests that, rather than the merging of the different potential markets for non-network services into a single marketplace, the markets are segmented, and the high cost threshold adopted for the RIT-D contributes to this segmentation. Information in NSPs' regulatory submissions suggests that other incentive schemes are similarly not bridging the gap; project expenditures tend to be small, experimental or one off and display little evidence of a broader emerging non-network service market.

Over the period 2014-2019, the market for Demand Management was small; only three projects have been identified in the DAPRs, none of which would have met the RIT-D test, averaging just over $730,000 per project. The market in load shifting appears to be more active, with larger project sizes: 16 projects have been identified, five of which have an average value per project of $13.9 million, close to the average value of the completed projects under the RIT-D and materially higher than the median value ($8.2 million) in the AER's data on RIT-D projects. The bulk of the projects (11 projects) had an average value of $1.6 million, however – lower than the RIT-D threshold, but higher than the projects in the Demand Management category.

Counting all of these projects towards an emergent non-network services market would materially increase the measured success of this market, from one successful project considering only the RIT-D to 20 successful projects considering all these projects as part of a single market. However, while there's insufficient data to identify a potential trend, the data we have doesn't support the emergence

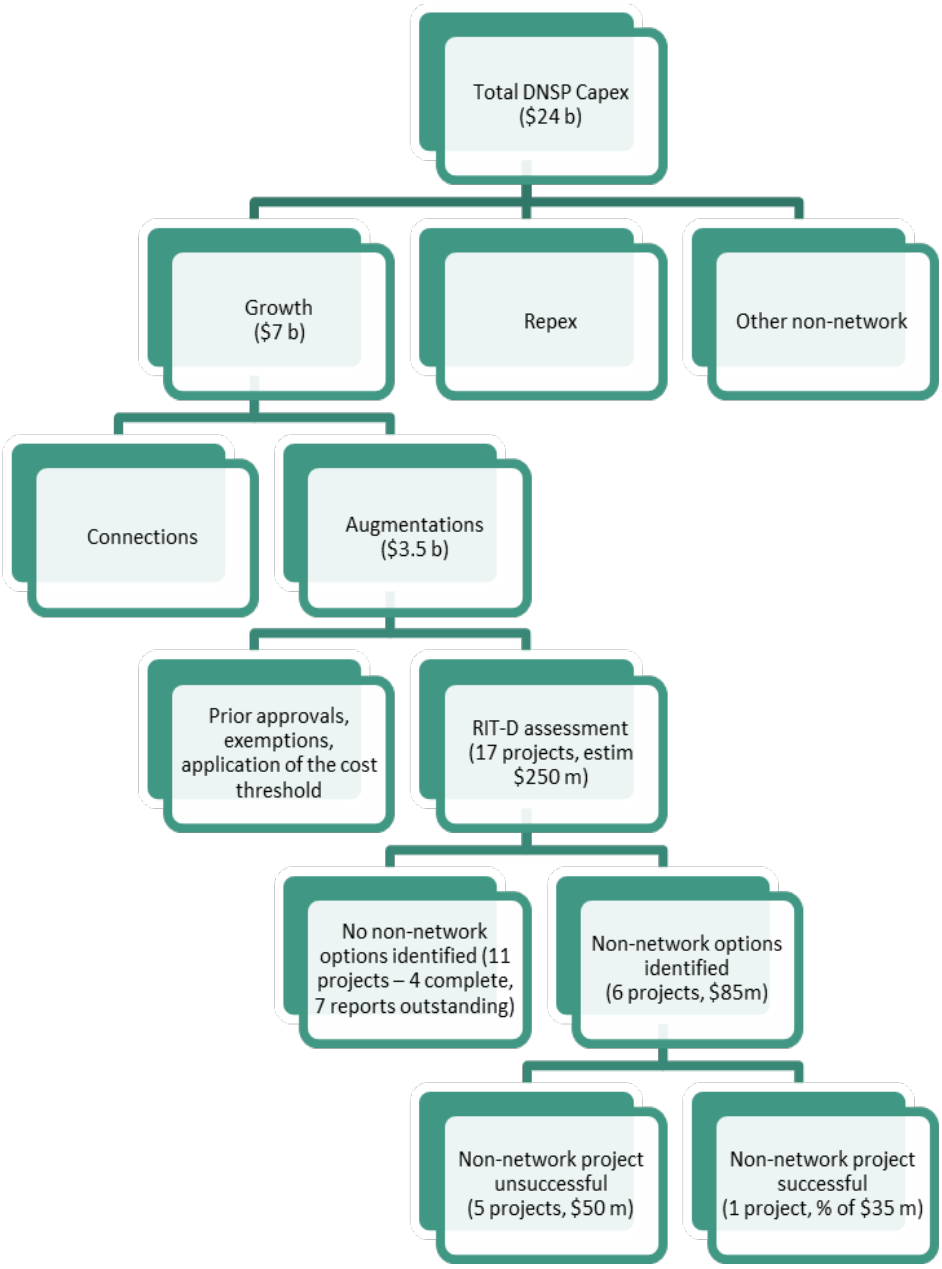
of a bridge from one market to the next, with a large gap between the bulk of the load shifting projects and the cost threshold for the RIT-D.

The RIT-D in a wider context

The AER's figures on the RIT-D's performance in its first five years indicate that, judged within the narrow contexts of the small number of projects working through the RIT-D process, the smaller number of completed projects or the sole successful non-network services project, the program could not be described as a success.

Within the wider context of DNSP capital expenditures over the period covered by the AER's data, the data suggest that the sole successful RIT-D project represents less than one percent of all augmentation capital expenditures, at (a share of) $35 m. More significantly, the estimated capital cost of projects covered by the RIT-D over the same period, $250 m, represents only seven percent of all augmentation capital expenditures; exemptions and exclusions from the RIT-D's coverage result in 93 percent of all augmentation capital expenditures being excluded from coverage. In operation, the effect of the exclusions and exemptions is so broad that it is unlikely the RIT-D could provide the intended competitive market pressure on DNSP capital expenditures.

Figure 1 DNSP Capital Expenditures by category and RIT-D projects, 2013-2017, number of projects and $



Source: AER data; Seed calculations. See Attachment B for details

Attachment B approaches the same questions as Figure 1, but from a different direction. Attachment B looks at how large key exemptions from the RIT-D's coverage, measured in dollars of capital expenditure, would need to be to explain the very narrow coverage of the RIT-D in operation. Summarising the results of Attachment B, our conclusions are that, once a reasonable allowance is made for prior augmentation projects, the capital projects covered by remaining exemptions must account for a very significant share of augmentation capital expenditure to explain the RIT-D's performance. Given this conclusion and assuming the RIT-D is operating as intended, can the RIT-D meet its objectives as currently designed?

There are other questions thrown up by the experience of the RIT-D, including:

- The number of projects participating in the RIT-D is significantly lower than the initial projections for the potential projects, but over the period since 2013, DNSP capital expenditure increased relative to expectations in 2009. What might explain this experience, other than the increase in the cost threshold? Has the structure of the program and the level of the RIT-D presented NSPs with incentives to shape their capital expenditure programs to avoid the application of the RIT-D?
- Does the RIT-D's design impose additional costs on the NSPs that provide an incentive to avoid participation in the program? For example, NSPs have persistently argued that the process slows project evaluations and completion, at some cost to the NSPs and to the required performance of the network: can this be demonstrated? The exemption excluding urgent projects from the coverage of the RIT-D was designed to address this possibility; how many urgent projects are excluded from RIT-D coverage, instigated, and completed within the required timeframe?

These questions cannot be answered definitively, given the difficulties of using the DAPRs as a data source. However, the available public domain material provides some insights into these issues and raises further questions, which Seed Advisory's analysis explores below. The difficulties of using the DAPRs as an information source are discussed in Attachment B.

Non-network alternatives: The effect of the threshold on non-network options' participation

Is there any evidence that the RIT-D cost threshold could have had a perverse effect on project size, considering augmentation project trends and trends in all other projects included in the DAPRs? The chart following is based on Seed Advisory's consolidation of the DAPR data for 2013 – 2019 for all capital projects included, not only augmentation projects. The data has been classified based on the reported project capital cost, expected to cost either less than or more than $5 million, roughly consistent (but not identical) with the RIT-D cost threshold. The two categories are shown as a percent of total projects identified in the relevant class (augmentations, for example, or decommissioning). The number of projects in each category are also shown on the chart. (Issues that may affect the DAPR's as a source are discussed in Attachment B.)

This data shows:

- A large number of augmentation projects compared with any other category over the relevant period. Total augmentation projects (361) account for 44 percent of all projects. The second largest category is Replacement (274) accounting for 33 percent of all projects.

Figure 2 DNSP Capital Projects: Projects by capital expenditure category and size (greater/less than $5m), all DNSPs, 2014 2019, percent of category expenditure

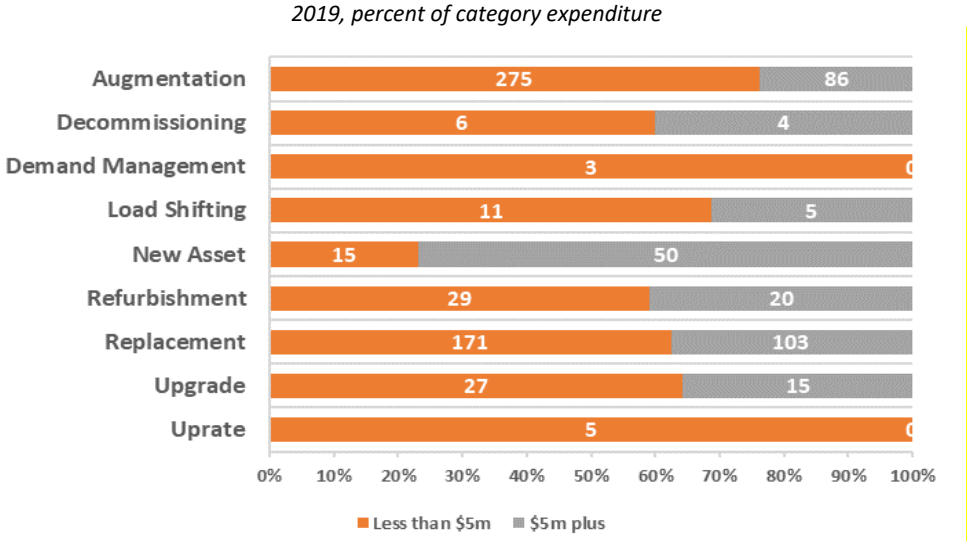


Figure 3 DNSP Capital Projects less than $5m, by capital expenditure category, 2014-2019, average capital cost per project ($m)

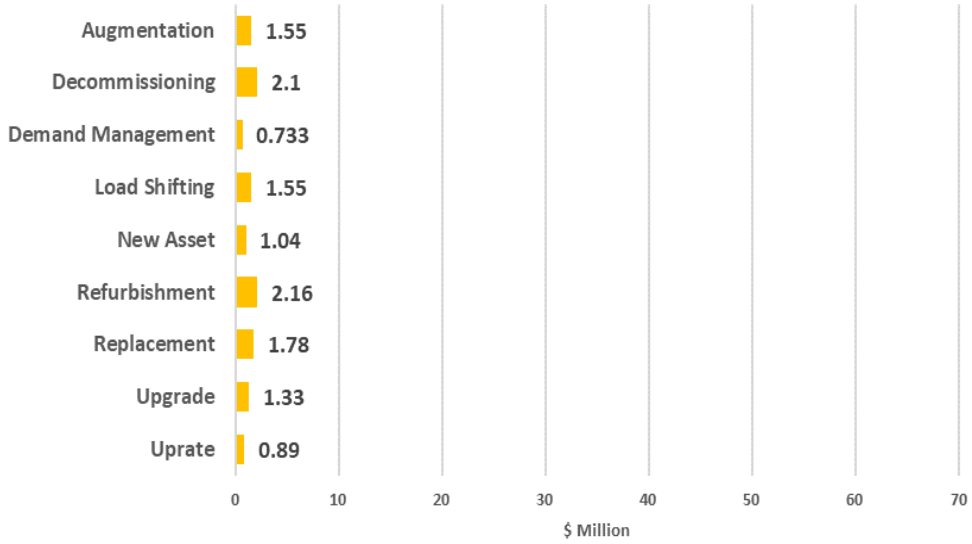
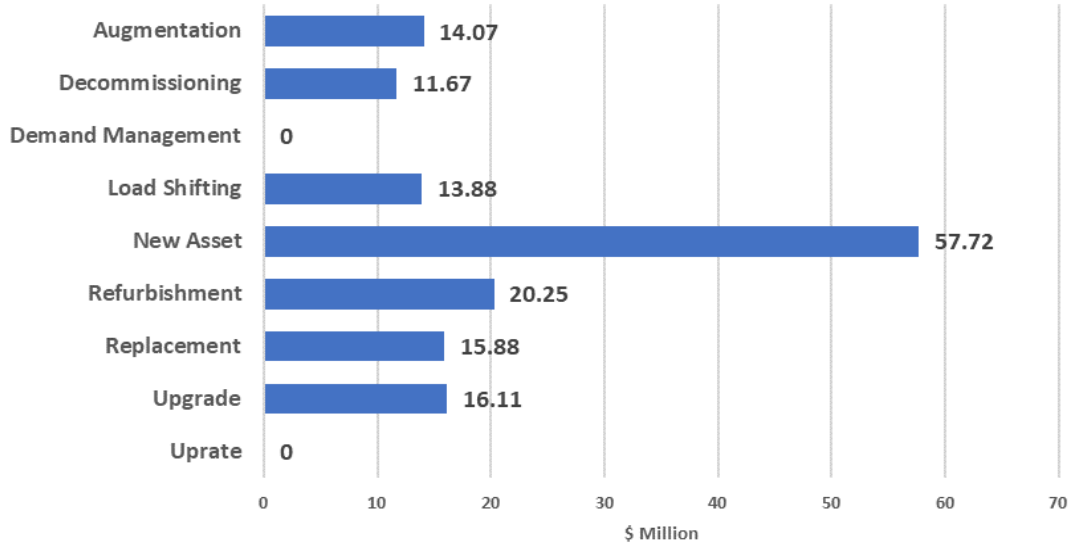


Figure 4 DNSP Capital Projects greater than $5m, by capital expenditure category, 2014-2019, average capital cost per project ($m)



- A relatively small proportion of augmentation projects, just over 20 percent, in the $5 million plus class, compared with 44 percent of all projects, 38 percent of all Replacement projects or 77 percent of all New Assets. (The two categories with no projects in the $5 million plus category, Demand Management and Uprates, account for one percent of all projects.)
- While there are more small augmentation projects than typical across the categories of capital expenditure, the size of augmentation projects is representative of all other projects. Augmentation projects in each class, less than $5 million and $5 million plus, are on average in the mid-range of the average value of all projects considered.[23]

However, individual DNSP data (Attachments C and D) suggests that, for some DNSPs at least Augmentation project numbers and size have fallen relative to all other capital expenditures.

The performance of the RIT-D: project time to complete

Does the RIT-D's design impose additional costs on the NSPs that provide an incentive to avoid participation in the program? NSPs have consistently argued that the process slows project evaluations and completion, at some cost to the NSPs and to the required performance of the network. The AEMC appears to have accepted this argument in rejecting previous applications for a reduction in the cost threshold. Is there evidence that supports this effect?

Let's assume the principal additional cost borne by the NSPs results from the delay to project assessment and completion once the potential for non-network alternatives to provide a solution has been identified; all non-urgent projects that meet the size criteria need to go through this assessment. As a result of the process delay, there may also be some residual risk and an associated cost arising from the network's failure to meet its future regulatory requirements. (The exemption excluding urgent projects from the coverage of the RIT-D was designed presumably to address this possibility.)

The chart that follows groups the AER's data on completed RIT-D projects into:

- projects where a notice of no viable non-network options was published, truncating the RIT-D process at that point, and

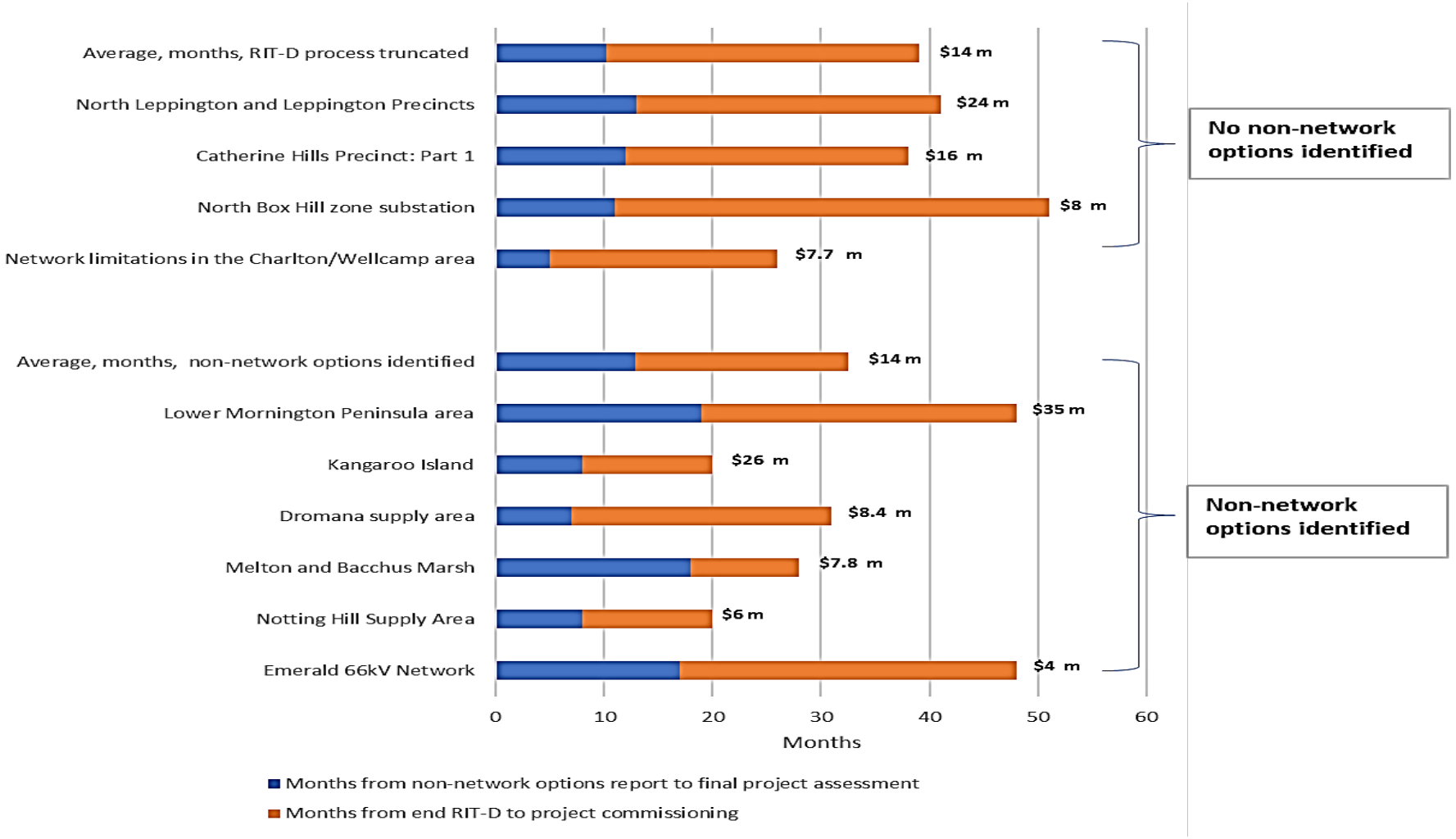
[23] Somewhat perversely, the number and size of augmentation projects in the less than $5 million category is more consistent with the successful non-network services market excluding the RIT-D (demand management and load shifting projects) than the number and size of augmentation projects greater than $5 million.

- projects where potentially viable non-network options were identified, triggering the processes of advertising for, and evaluating available non-network options and, depending on the project size, preparing either a draft and final project assessment or a final assessment.

Averages for the elapsed time, in months, are included with both groups of projects.

The chart suggests that, relative to projects covered by the RIT-D where no non-network options were identified at an early stage, project completion times were shorter for projects where non-network options were identified. Projects where non-network options were identified on average take three months longer in the time to project assessment, but less time from completion to commissioning (nine months faster) than projects where the RIT-D process was truncated after a notice of no non-network options was published, resulting in a six month faster time to completion from the inception of the RIT-D to project commissioning.

Figure 5 RIT-D Projects, 2013 – 2017: All projects completing the RIT-D, by project, project size, time to completion and status (non-network options identified/not identified), months and $ million



Source: AER data, Seed Advisory calculation

There doesn't seem to be a systematic relationship between project cost and time to commissioning; the smallest project ($4 million) in the data took as long to commissioning as the largest ($35 million), while the second smallest ($6 million) and the second largest ($26 million) took half the time to complete. Seed's analysis of the DAPR data suggests that relatively few distribution network capital projects have predictable, short life cycles from conception to commissioning. This could explain some of the unsatisfactory nature of the RIT-D data, but in doing so, it is at odds with the proposal that the RIT-D routinely increases project times and costs. Seed's data on Essential's project lifecycles suggests an average lifecycle from first inclusion in the DAPR to project completion of just under 2 years for projects included in recent DAPRs. Projects introduced in the 2013 DAPR, the first in its current format, have a project lifecycle of just over 2.5 years (all projects), rising to over 3.5 years for completed projects.[24]

For all sorts of reasons, the data are unable to support firm conclusions on the size of the potential RIT-D market or the effect of the RIT-D requirements on augmentation projects. However, the data suggest that some strongly held views about the RIT-D – for example, that RIT-D projects take longer to complete than other comparable projects – are not well-based, and better information is required on the operation of the exemptions to the RIT-D's coverage if the size of the available market is to be understood and the lack of RIT-D projects to date explained.

The following section looks at how the performance of the RIT-D should be measured, considering initial expectations and the current experience, while Section 4 describes our reform proposal.

[24] Attachment C shows Seed's view of Essential Energy's project information. The choice of Essential to investigate this question is a result of Essential's commendable practice of using a project reference number for each of its capital projects in its DAPR. The project reference number allows projects to be tracked through their lifecycle with a higher degree of confidence than other NSPs' data, where project names and descriptions change from year to year, where the projects can be identified.

Meeting the RIT-D's objectives: Balancing the benefits and costs of the RIT-D

If effective competition and the development of the contestable non-network services market reinforce each other and, together with transparent planning frameworks and clear project evaluation, work to achieve the planning framework's ultimate objective, then the benefits of the RIT-D contribute to the benefits of the wider Framework reforms. In the same way, the costs of the RIT-D process should be considered as part of the costs of the planning and expansion framework more generally. Finally, we need to be clear about the difference between *the responsibility for any incremental costs* and *the incidence of the costs*, particularly in the case of regulated sectors.

First, thinking about the benefits.

- The Framework reforms are intended to achieve a social good, driving better network and private decision making, reducing the costs to all electricity users, and improving regulatory outcomes generally rather than the benefits accruing to specific consumers.[25]
- Although at the time of their introduction there were no published estimates of the net community benefits, the Commission presumably expected them to be positive, that is, sufficiently large to justify any necessary additional costs. Given networks' capital expenditures since 2013, potential customer benefits from achieving the Framework reforms may well have been larger than envisaged in 2009. To the extent that, at the time, the choice of a higher RIT-D cost threshold was considered as part of a fine balancing act within the constraints of the original benefit/cost calculation, this equation may no longer hold.
- Finally, customers' benefits must have been expected to exceed the impact on customers' bills: if community benefits had not exceeded the costs ultimately born by consumers, there would be no net economic benefit to the community. The Commission was surely alert to the difference between the *responsibility for* and the *incidence of networks' costs* for the underlying planning process and compliance requirements and the publication of the DAPR. The efficient initial costs borne by the networks are recovered from the community through network operating expenses, following regulatory scrutiny.

Now, considering the costs.

Discussions about the RIT-D and the RIT-T since the original reforms have largely focussed on the cost threshold – that project size that, provided the project is not excluded under any other exemption, results in the application of the regulatory investment test – and the incremental costs in expanding the coverage of the regulatory investment test to a wider group of projects. Initially the Commission argued the proportionality of the $5 million cost threshold to the benefits available to the community.[26] Subsequent discussions about the expansion of the scope of the RIT-D in particular have dismissed moves to change the threshold as inconsistent with the National Electricity Objective, that is, not in the long term interests of consumers.[27]

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[25] Projects where specific consumers benefit and pay the network for the service are excluded from the RIT-D coverage.

[26] Interestingly, as the RIT-D cost threshold moved from $1 to $2 to $5 million, its justification continued to be that the threshold and the costs were proportionate. AEMC, *Final Report: Review of National Framework for Electricity Distribution Network Planning and Expansion,* September 2009, p 45, for example.

[27] AEMC*, Final Determination: National Electricity Amendment (Contestability of energy services) Rule 2017*, p. 67-68. The AEMC argued, alternatively, that if the problems identified in relation to network incentives could not be addressed by changes in the Guidelines for the regulatory investment tests, a wider review of network incentive frameworks would need to be undertaken. To the extent that this review was undertaken as part of the 2018 Framework Review, the AEMC, although concluding there was theoretical evidence of bias under certain conditions, discussed the performance of the regulatory investment tests primarily in the context of appropriate models for future network DER investment regulation.

In focussing on networks' incremental expenses, the discussion has ignored two important issues.

- If the effectiveness of the competition offered by the non-network services market works together with the operation of the planning framework to enhance customers' long-term interests, then the appropriate test for the costs of any changes to the RIT-D and RIT-T is the *increase in the net community benefit achieved* through the improved operation of the Framework, *not the gross incremental costs* incurred by the networks.
- Although networks initially incur any higher expense because, in the first instance, they pay the bill, there is a clear distinction between responsibility for the first bill and the incidence of the increased cost. The distinction between initial payment and final incidence is rarely clearer than in discussing regulated businesses' expenses ultimately paid for by customers and the community. The appropriate test is a two-sided test, the *net community benefit*, taking account of any efficient net incremental costs.

The RIT-D: balancing the benefits and costs

Considered separately or as precursor to a broad non-network services market, the projects that have proceeded under the RIT-D and other DAPR categories are insufficient in number or scale to provide the effective competition required by the Framework reforms. The concentration of opportunities in specific regional markets has militated against the hoped-for emergence of a national non-network services markets. The segmented nature of the non-network services market evidenced by the DAPRs suggests the Commission's hope that the impact of the higher cost threshold could be overcome has not been fulfilled. As a result, the projected customer benefits have not been realised. The evidence suggests the higher cost threshold adopted for the RIT-D is a significant factor in these outcomes: to achieve the benefits envisaged from the Framework reforms, the cost threshold needs to be reduced.

There is, of course, an alternative to increasing the RIT-D cost threshold – replacing the RIT with a higher level of regulatory oversight of the design and procurement of network capital expenditures. To the extent that in 2016 the Commission considered this might be required, the 2018 Framework Review baulked the question to address another looming priority, the potential regulation of non-network services markets in the DER context. If it is accepted that the non-performance of the RIT-D is structural, not a feature of its design, then this requires a significant rethink of the AEMC's and AER's early thinking about the potential regulation of non-network services markets in the DER context. If a marketplace in conventional capital expenditures co-ordinating a small number of participants can't be made to work, how much more difficult will it be for the effective design and operation of a workably competitive market in multiple networks co-ordinating large numbers of small participants in geographically specific areas?

The AEC's Proposal

Changes to the RIT-D

Changes to the RIT-D

The Australian Energy Council (AEC) is proposing a reduction in the Regulatory Investment Test for Distribution (RIT-D) cost threshold to apply the RIT-D to a project where the estimated capital cost for the most expensive credible option is $1 million or more.

In addition, the scope of the AER's regular review of the cost threshold should be widened to examine the performance of the RIT-D with particular reference to the functioning of the exemptions to the RIT-D's coverage, relative to the expected functioning of these exemptions.

Finally, the embedded assumption in the National Electricity Rules that project cost thresholds should be revised inexorably upwards at regular intervals should be removed. Instead, the RIT-D Guidelines

should be reviewed at regular intervals in the context of networks' recent and anticipated capital programs.

RIT-D

The AEC's proposal will result in the cost thresholds for the application of the RIT-D and RIT-T diverging, with the RIT-T retained at its current level and reviewed every three years in line with the requirements of the NER. There is no evidence that during 2016 –2019 when the two lower cost thresholds diverged there was any material cost arising from the divergence.

The National Electricity Objective: Benefits and costs

Benefits

By increasing the opportunities for the efficient substitution of non-network services for eligible distribution network augmentation and replacement capital projects, the objectives of the Economic Regulatory Framework and the Framework reforms will be delivered to a much greater extent than has been the case to date. The Framework Reforms envisaged effective competition and the development of the contestable non-network services market reinforcing each other and, together with transparent planning frameworks and clear project evaluation, working to achieve the planning framework's ultimate objective, the enhancement of consumers' long-term interests. More projects entering the RIT-D process will increase the opportunity to the non-network services sector and in expanding the sector will provide more effective benefits from competition to customers.

Costs

At the current cost threshold, the evidence shows the RIT-D does not contribute to achieving its original objectives. The level of the cost threshold appears to have resulted in at least three, unrelated markets for non-network services emerging, rather than the broader non-network services anticipated when the National Framework was first proposed. The non-network services industry identified as essential in responding to the network challenges of high Distributed Energy Resource penetration should not be held back by design issues like those affecting the performance of the existing non-network services markets.

The potential increase in networks' costs from some incremental internal assessment of projects under a reduced RIT-D cost threshold is the wrong test, both because the appropriate test is customers' benefits from the better performance of the Framework, and because the incidence of any efficient increase in networks' costs falls on consumers, not networks.

The appropriate test is the balance of customer benefits and costs achieved through the contribution of the RIT-D at a lower threshold to the Framework Reforms.

Benefits outweigh costs

Considered separately or as precursor to a broad non-network services market, the projects that have proceeded under the RIT-D and other DAPR categories are insufficient in number or scale to provide the effective competition required by the Framework reforms. The concentration of opportunities in specific distribution markets has militated against the hoped-for emergence of a national non-network services markets. The segmented nature of the non-network services market evidenced by the DAPRs suggests the Commission's hope that the impact of the higher cost threshold could be overcome has not been fulfilled. As a result, the projected customer benefits have not been realised. The evidence suggests the higher cost threshold adopted for the RIT-D is a significant factor in these outcomes: to achieve the benefits envisaged from the Framework reforms, the cost threshold needs to be reduced.

Although network capital expenditures have fallen relative to the levels of five years ago, they remain higher than was envisaged at the time the RIT-D was proposed. Higher network investments have

increased the scope of the potential rewards from the introduction of effective competition, as has the widening of the RIT-D's coverage to include replacement and refurbishment capital expenditures. With network investment – transmission and distribution – running at upwards of $5 billion/year in the near term, even small increments in customer benefits from a higher level of effective competition justify some additional expense.

Attachment A: The performance of the RIT-D

Figure A.1, following, takes a similar approach to Figure 5 in relying on the AER's data on the performance of the RIT-T to look at the question of additional costs on NSPs from requiring participation in the RIT-T.

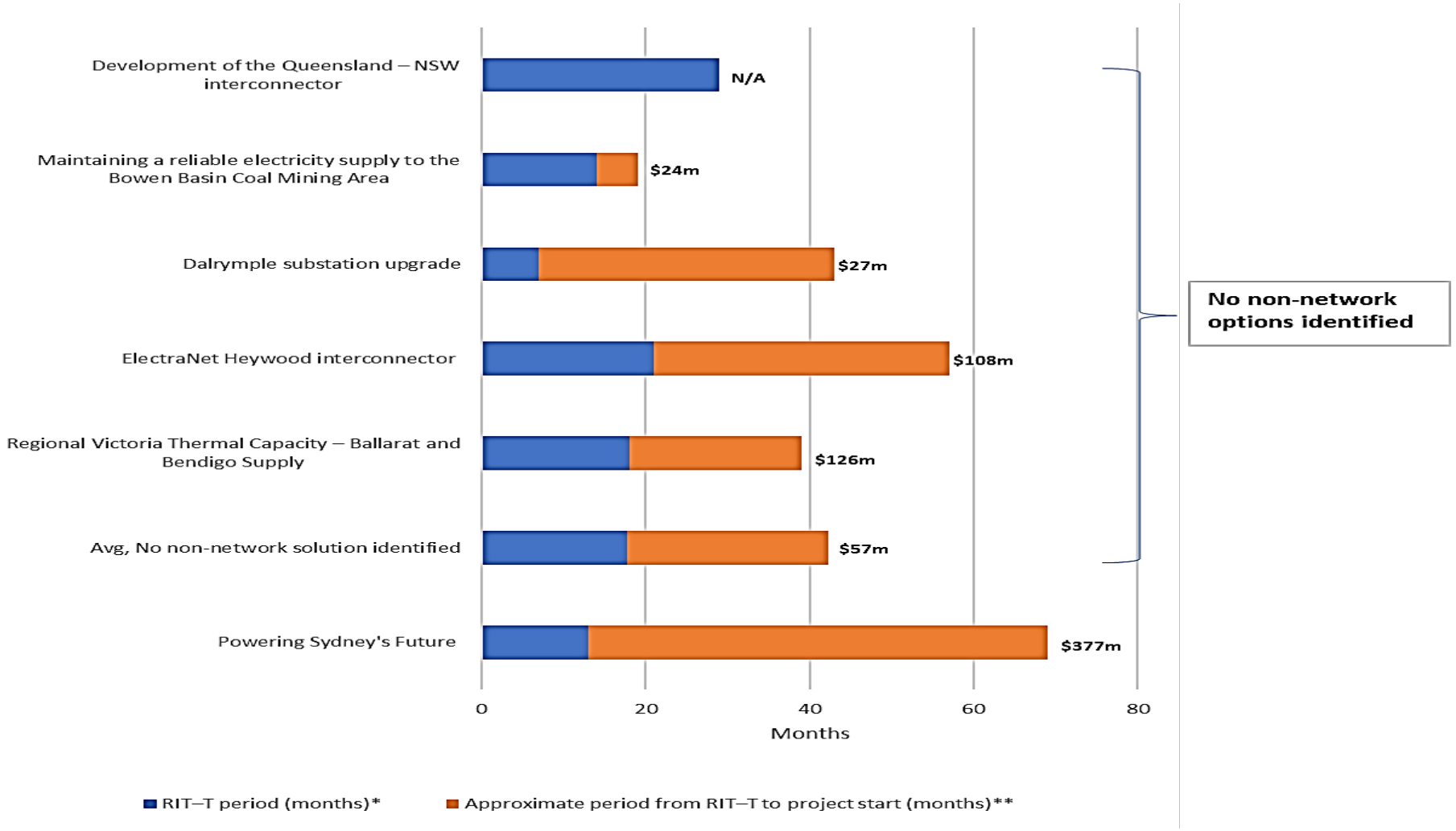
The chart that follows groups the AER's data on completed RIT-T projects into:

- projects where a notice of no viable non-network options was published, truncating the RIT-T process at that point, and
- the sole project where potentially viable non-network options were identified.

Averages for the elapsed time, in months, are included with the projects where no non-network options were identified.

Unlike the RIT-D data, no pattern is evident, not least because there are fewer projects. Once again, six projects over a five-year period cannot be regarded as a success for the RIT-T, even considering the comparative scarcity of transmission projects relative to distribution projects.

Figure A.1 Completed RIT-T Projects, 2013 – 2017, by size ($ million) and months from inception to completion by availability of non-network options, months and $ million



Source: AER; Seed calculations

Attachment B: Measuring the performance of the RIT-D

Seed Advisory's incoming assumption in thinking about the performance of the RIT-D was that the available data would allow us to think about both the performance of RIT-D projects, and also about the wider environment in which the RIT-D operates. Notwithstanding the intention of the Framework reforms to "provide greater transparency to, and information on, distribution business' planning activities", relying on DNSPs' Distribution Annual Planning Reports (DAPRs) to understand the criteria governing the application of the RIT-D by individual businesses, the number and cost of major capital projects or to provide comparative insights into individual DNSPs' planning frameworks is difficult.

- There are gaps in the availability of the DAPRs online. Requests to remedy the omissions were not universally successful. In one case, our researcher was referred to a local library by the responsible DNSP when searching on the DNSP's website for missing years' publications.
- Project classifications and capital expenditure classes differ from DNSP to DNSP and particularly from jurisdiction to jurisdiction. We have used our judgement in combining some descriptions into wider project classifications, but we cannot be certain we have captured like-for-like across all categories.
  - This is specifically the case for load shifting projects where we have chosen to retain this description because these projects arguably form part of a wider, if still highly segmented, non-network services market. There may be other load shifting projects not similarly identified in the original source DAPR that we have overlooked.
- Project information in the DAPRs can be incomplete, with some serious omissions considering the intended audiences for the data. For example, a large number of included projects lack critical details such as expected and/or actual costs.
- Projects are difficult to track through their lifecycle: appearing and disappearing; starting construction, but never apparently being completed (at least on paper); changing name; morphing into projects that may be the same, but could be different; and, taking what appears to be an unconscionable time to be completed. The increasing use of project descriptions focussing on the purpose, for example, "Supply to *xyz* suburb", in preference to the older style descriptions, "Upgrade switchgear at Zone Substation *abc* and replace etc.", has perversely made things worse. Even electrical engineers would struggle to reconcile more recent bland descriptions with the previous technical descriptions, whereas the technical descriptions could largely be reconciled one to the following.
  - Attachment C looks in detail at Essential Energy's data, which, although Essential is unlikely to be representative of all networks, allows us to track Essential's capital projects through their project lifecycle and to look at trends in project numbers and project size in relation to the RIT-D's objectives.
  - Attachment D provides similar data for a small number of DNSPs where we have access to three or more DAPRs for the period since 2013.

As a result, the consolidated information we have collected is indicative at best. It gives rise to more questions than answers, but it also raises questions about the extent to which the existing Rules and Guidelines are capable of meeting the objectives of the Framework reforms in relation to transparency at least.

Illustrating the issues faced, Figure B.1 presents the pessimistic case for the *available RIT-D market*.

Looking first at the official data underlying Figure B.1.

- The first four columns are sourced from the AER's *2019 State of the Energy Market* tables, are internally consistent and are given in $2019.
  - As the AER's analysis of the RIT-D's performance predates the coverage of replacement and refurbishment projects (repex) by the RIT-D, all repex has been excluded.
  - Other network capital expenditures – IT expenditures, etc., excluded from the RIT-D coverage has been proxied by grouping all other capital expenditure into "Other Non-network" expenditure.
- The next two columns, splitting Growth Capex into Connections and Augmentations, are sourced from DNSPs' recent regulatory income submissions. In splitting Growth Capex, we have relied on an estimate of the average share of Connections and Augmentations over the period.
  - The Victorian DNSPs' submissions generally (but not without exception) have adopted the AER's classification schema and provide a historical series on a consistent basis in their RINs.
  - However, the AER's requirements have evolved over time, and DNSPs in other jurisdictions have made individual choices about the level and extent of compliance with the AER's prevailing requirements. In some cases, we have used estimates taken from charts, averaged capital expenditures over the five years we were interested in or made other assumptions about how to approximate the data we are interested in.
  - We are satisfied that our approximations and estimates typically work in the DNSPs' favour and we have rounded the data to reflect issues in the data collection.
- All Connection cost capital expenditures are exempt from the RIT-D.
  - All projects classified in this category are assumed to be covered by the exemptions relating to costs recovered by standard service charges or are recovered from customers as envisaged in the exemption relating to customer contributions.

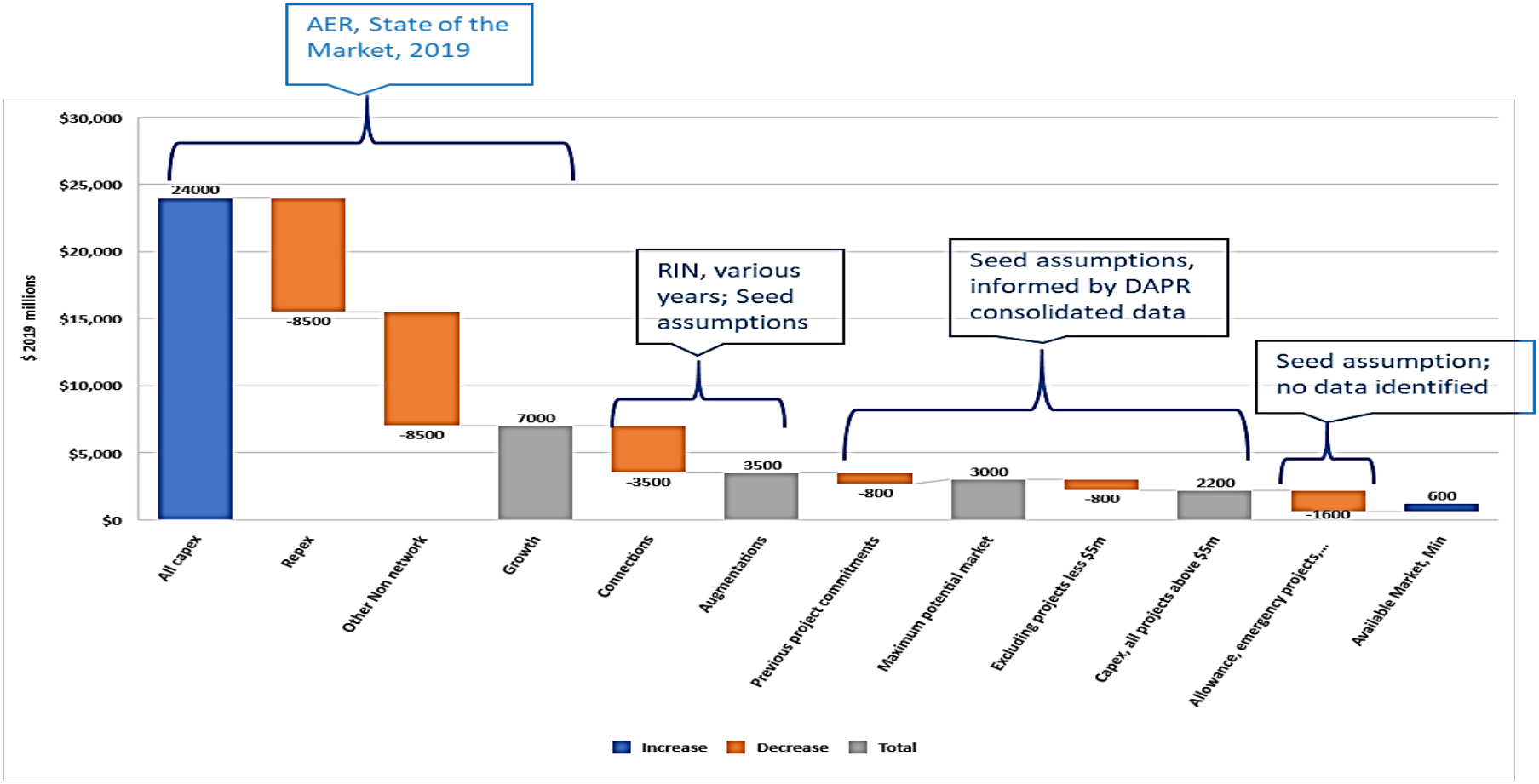
The next four columns use assumptions based on the information collected from the DAPRs, which also inform Figures 2 to 4. Our reservations about the DAPRs as a source of information are canvassed above.

- On average 40 percent of annual capital expenditures are assumed to relate to new capital expenditures, that is, capital expenditures first commencing in the relevant year.
  - This estimate assumes the average time to completion for a distribution network augmentation project (excluding connections, above) is 2.5 years and a stable capital expenditure profile over time. In any given year, these assumptions suggest up to 40 percent of capital expenditure is associated with new projects, while the remaining 60 percent is associated with projects commenced in earlier years (*previous project commitments,* column 7 in Figure B.1).
  - The alternative approach, mapping specific project spend over time, is generally unavailable, given the deficiencies of the DAPRs in supporting project tracking.
  - What this means is that for the first and second years of the five-year period we're estimating, 40 percent and 80 percent respectively of annual Augmentation capital expenditure is counted towards the maximum potential market. All annual Augmentation capital expenditure for the subsequent three years is also included in our calculation of the maximum potential market, but we have excluded future capital expenditures (from Years Six and Seven) from our calculation.

- Augmentation projects with an actual/expected cost of less than $5 m are assumed to represent 26 percent of all Augmentation capital expenditures (column 9) and have been excluded in the estimate of the *Capex, all projects above $5 million* (column 10).
  - These projects make up 76 percent of all augmentation projects (Figure 2). However, the data on which Figure 2 is based suggests that smaller projects account for a much smaller share of total Augmentation capital expenditures than their dominance, measured by the share of projects, would suggest.
- Finally, in approaching the question of how many capital projects rely on the exemption for urgent projects, we have made an optimistic and a pessimistic assumption, assuming that 25 percent (not shown) and 75 percent (Figure B. 1) respectively of all capital expenditure otherwise subject to the RIT-D is diverted to urgent projects. The assumption's material: the pessimistic case suggests this exemption, if consistent with our assumption, would be responsible for excluding twice the capital expenditures from the RIT-D as the cost threshold.

Notwithstanding the size of the exemptions allowed for, our estimate of the *available market* is more than twice the size of the projects covered by the RIT-D over the same period.

Figure B. 1 Minimum Available RIT-D Market: DNSP Capital Expenditures adj for exemptions, all NEM DNSPs, FY 2013-2017, estimated total by capital expenditure category and exemption type, estimated $ 2019 million (rounded to nearest $500 million/$500,000 as appropriate)

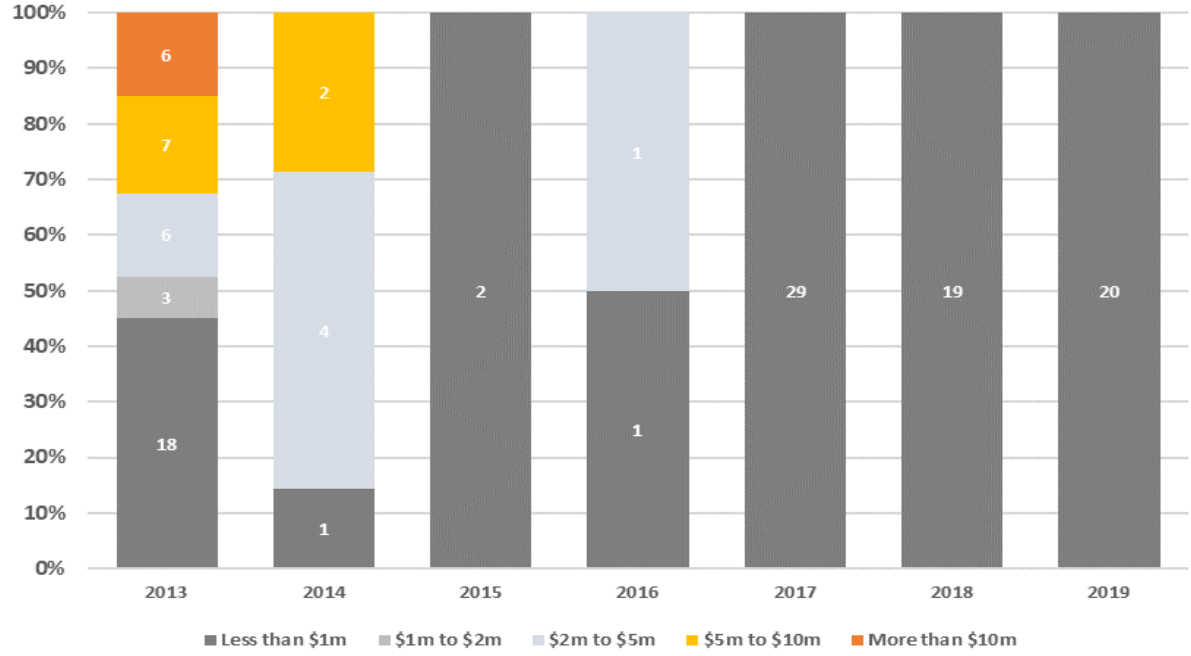


Source: AER, *State of the Energy Market*, 2019; DNSP RIN Statements, various years; consolidated DAPRs, all DNSPs, 2014-2019; Seed calculations and assumptions

Attachment C: Learning from Essential Energy's DAPR data

Between 2013 and 2019, of Essential Energy's *total* capital projects included in its DAPRs, only 15 would have met or have been expected to meet the $5 million RIT-D cost threshold (Figure C. 1).[28] Seven of those projects were augmentation projects; all seven first appeared in Essential's 2013 DAPR, although not all these projects commenced in 2013. Since 2013, there have been no augmentation projects that would have qualified under the RIT-D cost threshold (Figure C. 10), even before considering potential exemptions from the threshold. In the event, according to the AER, between 2013 and 2017, no Essential Energy projects went through the RIT-D process.

Figure C. 1 Essential Energy: Total identified capital project expenditures by year project first included in the DAPR and estimated cost, 2013 – 2019, number of projects and percent of total annual project number(119 projects)



Essential Energy's capital projects illustrate the difficulty of sustaining a non-network solutions industry in an environment where projects are few and far between. They also suggest if recent trends continue the extension of the RIT-D to replacement or refurbishment projects may be unlikely to materially increase the market for non-network solutions. Since 2015, no capital project included in our data would have been sufficiently large to meet the RIT-D cost threshold. Finally, they suggest that the logic behind linking the RIT-D and RIT-T cost thresholds and increasing the RIT-D threshold to reinstate that linkage is flawed. Rather than showing a trend to increasing cost and complexity, Essential's capital projects have shown a sharp reduction in the average cost for projects identified in the DAPRs from 2015 at the same time as Essential's total capital project expenditures captured in this analysis have fallen sharply (Figure C.5, Figure C.6).

[28] With no project in recent DAPRs costing (or expected to cost) more than $1 million, there's no value in discriminating between projects covered by the pre-2019 cost threshold of $5 million and the subsequent $6 million cost threshold in this discussion. See discussion of Figure C.9 and Figure C.10.

Why Essential Energy?

Essential Energy's data has been used not because Essential Energy is representative of all DNSPs –there are strong reasons to think this is unlikely (rural and remote franchise area, generally low customer density, …) – but because their DAPRs contain a high degree of useful data that's allowed us to look at project trends (number of projects, size, classification, …) in their franchise area for projects that are potentially eligible for RIT-D coverage since the RIT-D was introduced.

Essential Energy's DAPRs allowed us to track projects from their first identification as a potential constraint or system limitation through to project status using their project reference numbers. We were also able to attribute a project classification (Augmentation, Refurbishment, Replacement, Upgrade, etc.) to projects where this wasn't already obvious. This allowed us to track projects through their lifecycle with a higher degree of confidence than other NSPs' data, where, assuming projects appear from one year to the next (not always true), project names and descriptions change from year to year and we were unable to assure ourselves that we were not double counting or, less likely, undercounting projects for this analysis. (See discussion in Attachment B about the issues relating to consolidating data from the DAPRs generally.)

We make no claims for Essential Energy's representativeness, although we would note that, as with DNSP capital expenditures generally, Essential Energy's capital expenditure program has shrunk over this period. The choice of Essential Energy was determined by the ease with which we could identify projects from year to year in their DAPRs. One of the objectives of the introduction of the DAPRs in their current format was an increase in the transparency of projected network capital expenditures. The difficulties we experienced in developing the information needed to consider the experience of the RIT-D in context are not a ringing endorsement of this element of the Framework reforms.

Essential Energy's Data

We have some data on 156 capital projects for the period 2013 to 2017.

- Information on 133 projects compiled from Essential Energy's DAPRs has been supplemented by Essential Energy's response to our application under the *Government Information (Public Access) Act 2009 (NSW)* ("GIPA Act') for project details. We asked for project details including project status (completed, deferred, or cancelled, etc.); the actual or prospective date of completion; and, the actual or expected cost of the project at completion.
- Of the 133 network limitations the subject of our request, four were duplicates of other records included in our request. The duplicates identified by Essential have been omitted from our analysis.
- In addition to the 129 unique projects Essential Energy on which provided additional information, 27 projects were added to the project list from the 2017 DAPR, not initially accessible on Essential's website.

We have actual or estimated costs and project status from Essential Energy for 119 of the 156 projects in our data.

- Twenty-three network limitations identified in our request were not addressed as those limitations had not translated into a specific, identifiable project. Reasons for the limitation not translating into an identifiable project include: the limitation has not yet been addressed, was no longer present, or had been addressed by a project targeting multiple network constraints.[29]
- Twelve projects had been cancelled. No other data (anticipated cost or completion date, for example) was provided for cancelled projects.

[29] Essential Energy, communication to Seed Advisory, 28 April 2020

- Two projects have been deferred. Anticipated costs at completion were provided for the deferred projects.
- A large number of projects first appeared in the 2017 DAPR and have not reappeared. Where this was the case and cost information has been provided in the 2017 DAPR, we have classified these projects as completed within 2017. While this is not consistent with our observations on earlier project lifecycles, the DAPRs suggest a move to smaller, cheaper, and faster projects in more recent years.
- One project had a negative cost. We've reversed the sign on this project on the basis of implausibility.
- Finally, our project information on 5 multi-year projects already included in the data request and Essential Energy's reply has been updated to reflect their inclusion in the 2017 DAPR.

Some of the projects on which we received information had cost or were expected to cost less than $1 million. DNSPs are not required to publish the same level of information on projects falling under this threshold as on larger projects. Relative to that information that could normally be obtained through consolidating DAPRs, our information on Essential Energy's projects will skew towards a larger number of projects costing on average a smaller amount. In Essential Energy's case, omitting this data would have removed a material number of projects from our data set.

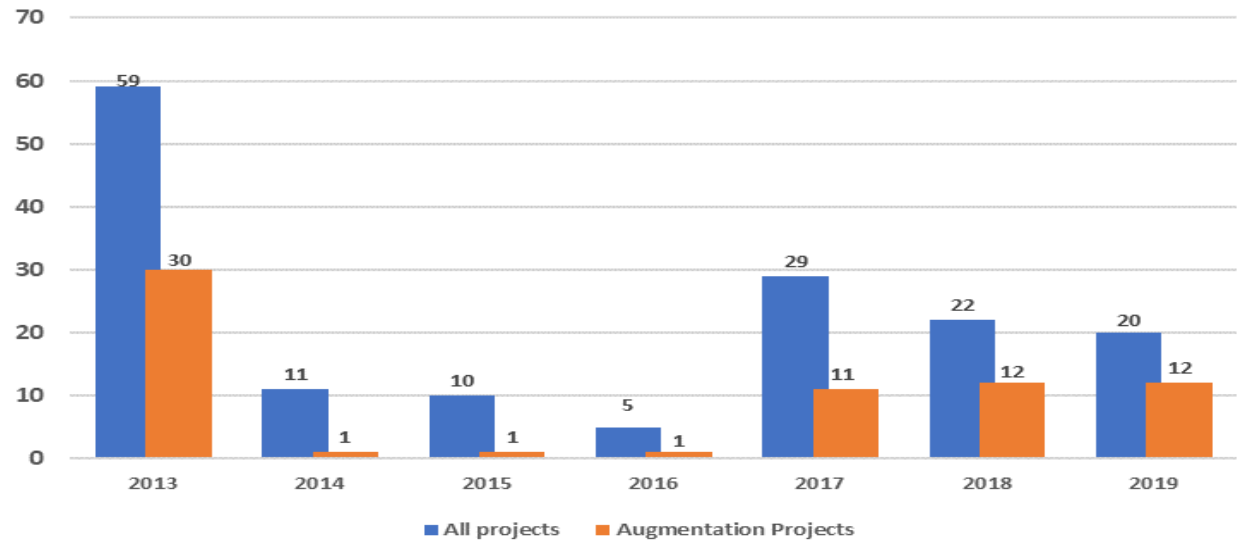
In summary, we have some information on 156 projects resulting from limitations identified in Essential Energy's network between 2013 and 2019. For 119 of those projects, cost and status information (completed, deferred, or cancelled, etc.) has allowed us to reflect on the way in which the RIT-D would have operated in relation to Essential Energy's projects.

Number of Projects, 2013 - 2019

Figure C.2 shows all 156 Essential Energy projects and 68 augmentation projects grouped according to the year in which the project was first identified in the DAPR. The first DAPR in the current format, that for 2013, was comprehensive and ambitious in scope, identifying a significantly larger number of constraints resulting in projects than any subsequent DAPR. More than twice the number of constraints were identified in the 2013 DAPR compared to the 2017 DAPR, for example. There were comparatively few additions to the original list between 2014 and 2016; the number of additions to the original list increased in 2017 but has since declined modestly.

The project agenda is persistent; most projects appear more than once, appearing in consecutive DAPRs. The 2013 program has also been substantially delivered. Figure C.3 shows 40 of the 59 projects first identified in the 2013 DAPR are in progress (one project), have been completed (37), or have been deferred (two projects). Of the completed projects, a small sub-group of projects (8 projects) first appeared in the 2013 DAPR and on average were completed after 5 years. Two of these long running projects, however, are expected to be completed in the early 2020s, respectively 8 and 10 years after first being identified. Ten projects have been cancelled.

Figure C.2 Essential Energy: All projects and Augmentation Projects by year in which first included in DAPR, 2013-2019, number of projects



Projects added in the 2014 DAPR have either been completed or cancelled. The status of a number of the projects added in 2015 and 2016 has not been identified in the data we received, while the majority of the projects first added in 2017 have now been completed. The majority of projects added in 2018 and 2019 are yet to commence.

Figure C.3 Essential Energy: All projects by current status and year first included in DAPR, 2013 – 2019, number of projects, (156 projects)

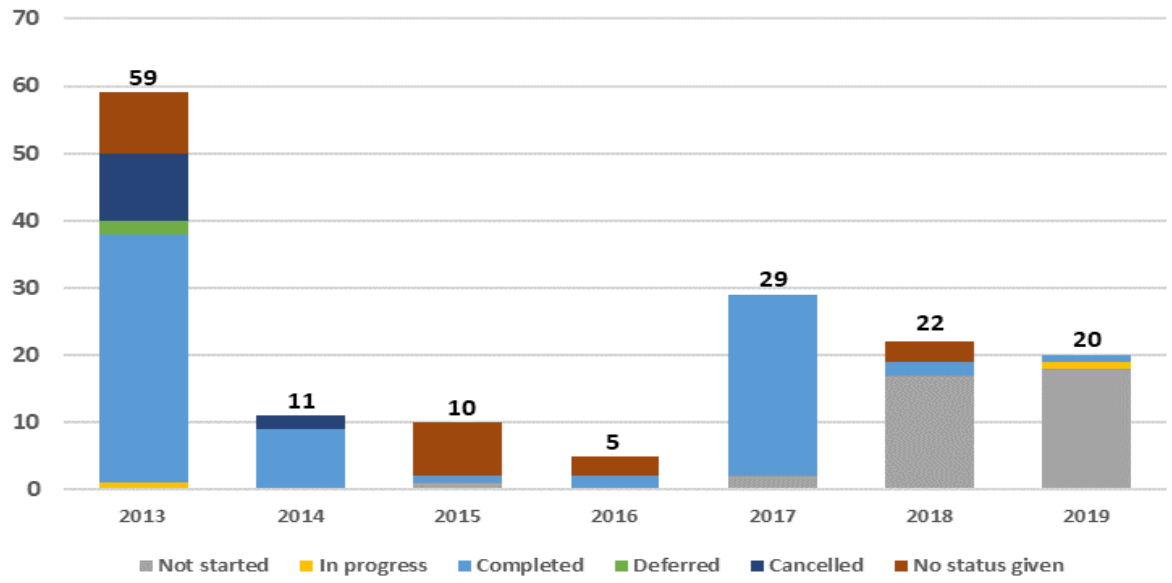
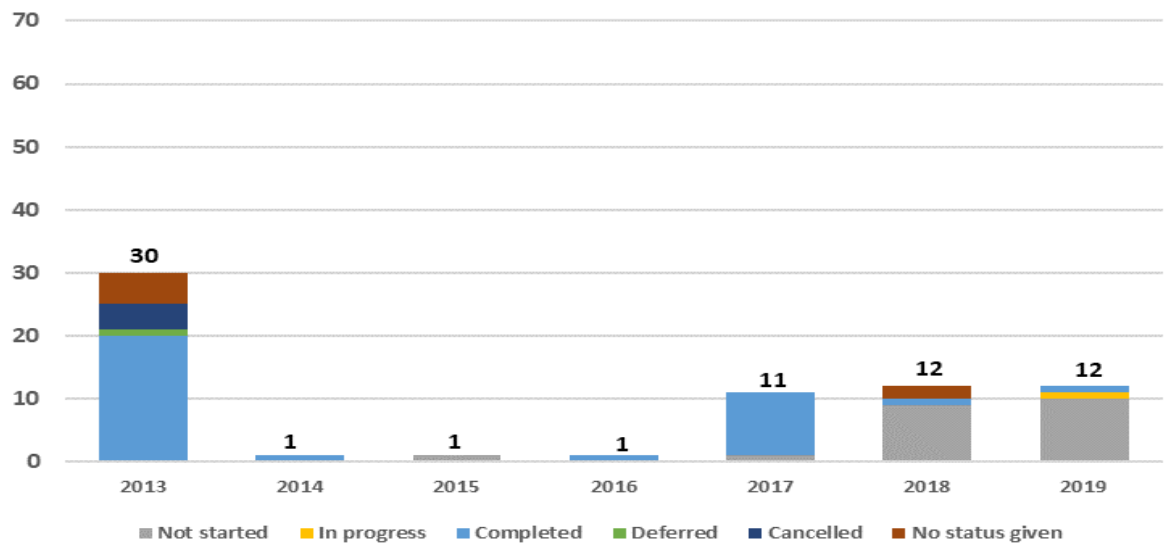


Figure C.4 shows the same information for augmentation projects between 2013 and 2019, with a similar pattern in project status: two thirds of the 2013 project list has been completed and 10 of the 11 projects added in 2017 have been completed. The majority of projects first recorded in 2018 and 2019 are still to be started.

Figure C.4 Essential Energy: All augmentation projects by current status and year first included in DAPR, 2013 – 2019, number of projects (68 projects)



Project Expenditures, 2013 - 2019

We have grouped the actual (or expected) capital expenditure by project in the year in which the project was first identified in the DAPR (Figure C.5) for the 119 projects for which we have information. While the data show a similar pattern to project numbers over the 2013 – 2019 period, they also show a very sharp reduction in total expenditures for all projects and all augmentation projects from 2015 onwards. Average project expenditures drop very sharply relative to the ambition and scale of the 2013 program.

Figure C.5 Essential Energy: Total identified capital project expenditures and augmentation projects by year project first included in the DAPR, 2013 – 2019, $ million (119 projects)

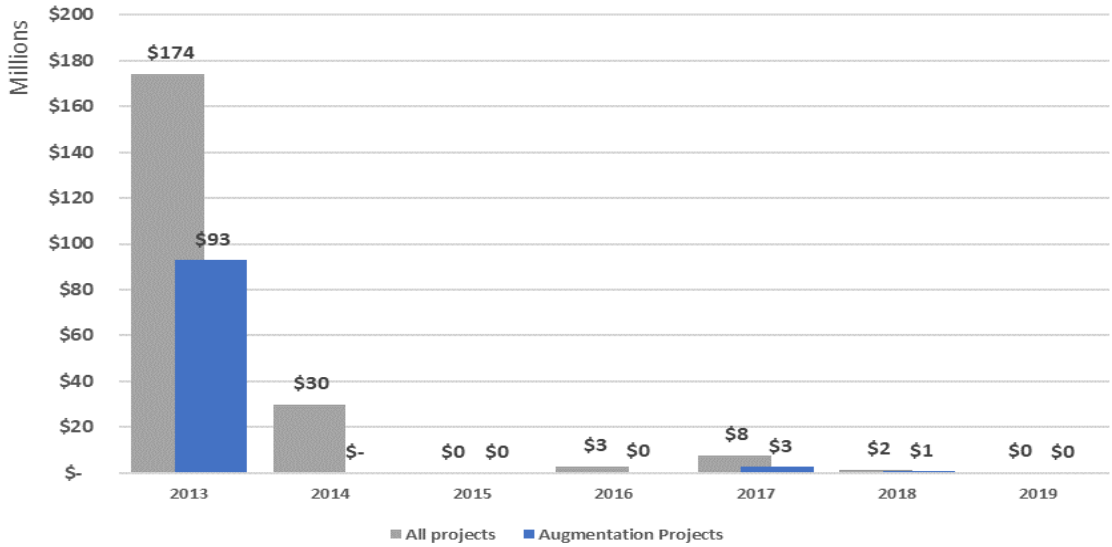
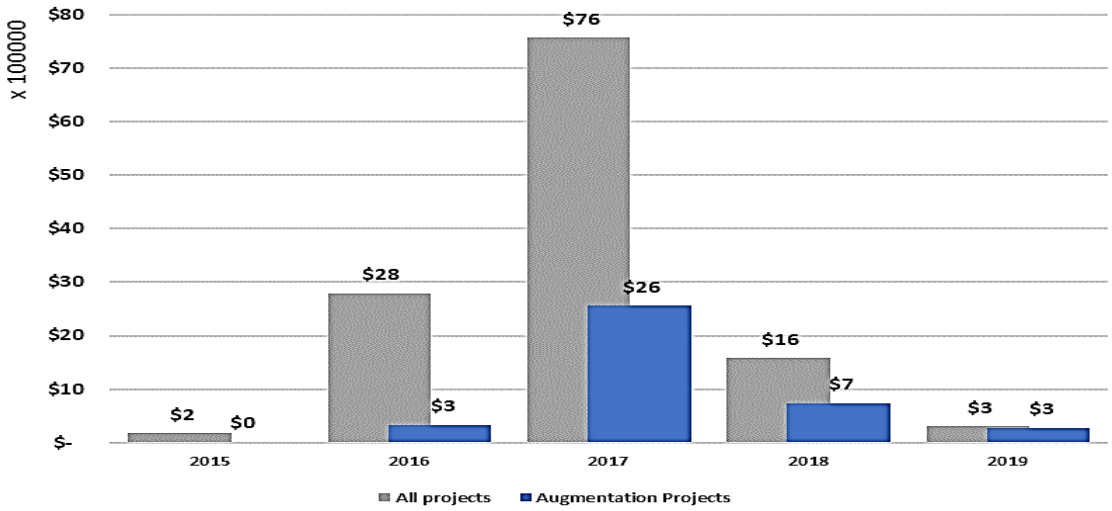


Figure C.6 shows the same data for the 72 projects with cost data from 2015, represented in $100,000's, not $ million. For Essential Energy, the data show that in any single year, for the 35 augmentation projects for which we have cost information, *total* augmentation project expenditures fall short of the pre-2019 $5 million cost threshold for a single project's eligibility for the RIT-D.

Figure C.6 Essential Energy: Total identified capital project expenditures and augmentation projects by year project first included in the DAPR, 2013 – 2019, $'000,000 (72 projects)



Average project expenditure, 2013 – 2019

Average project sizes fell as capital expenditures fell for all capital projects for which we have data and for all augmentation projects (Figure C.7, Figure C.8, both of which are shown in 10's of thousands of dollars, not millions or $100,000's as previously). The data shown provides no support for the hypothesis that the RIT-D threshold might act to artificially reduce the size of projects that might be covered by the RIT-D. From 2017, the largest and average augmentation projects are for all practical purposes identical to the values for all capital projects.

Figure C.7 Essential Energy: Largest and average total identified capital project expenditures by year project first included in the DAPR, 2013 – 2019, $'00,000 (119 projects)

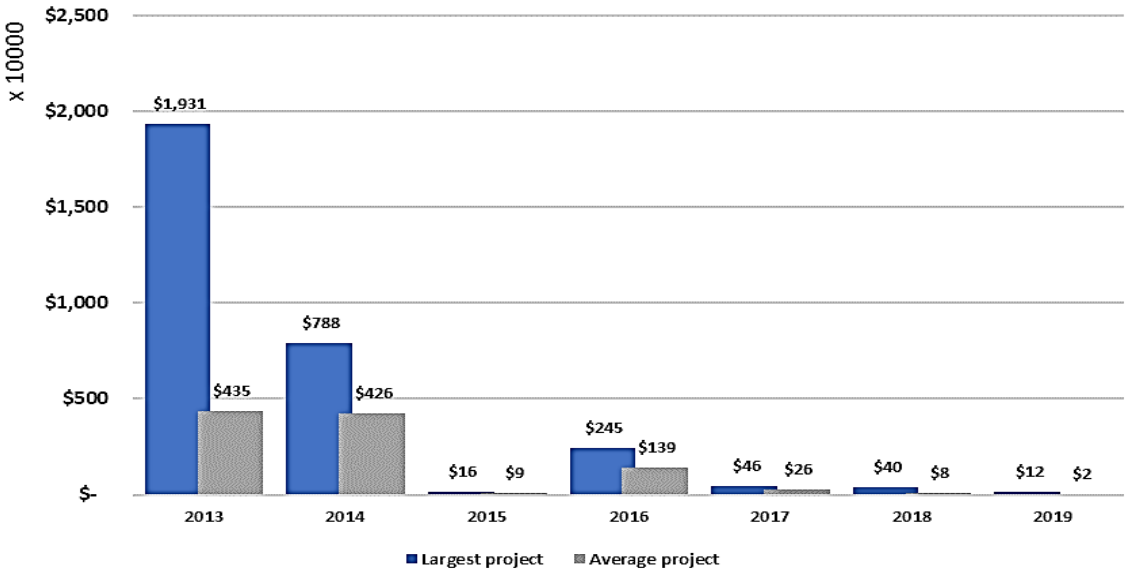
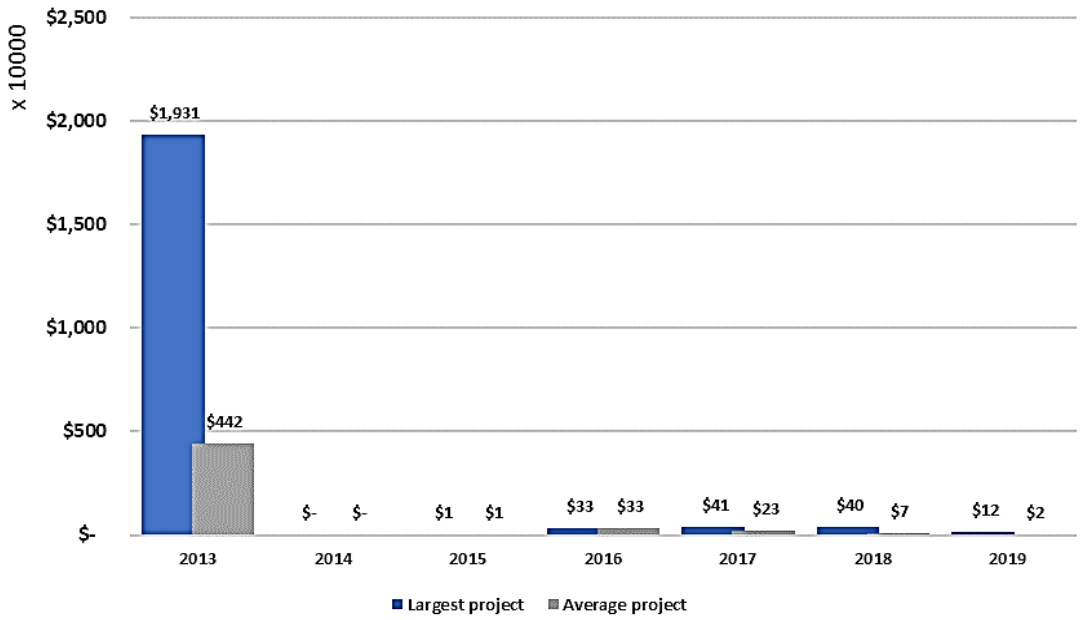


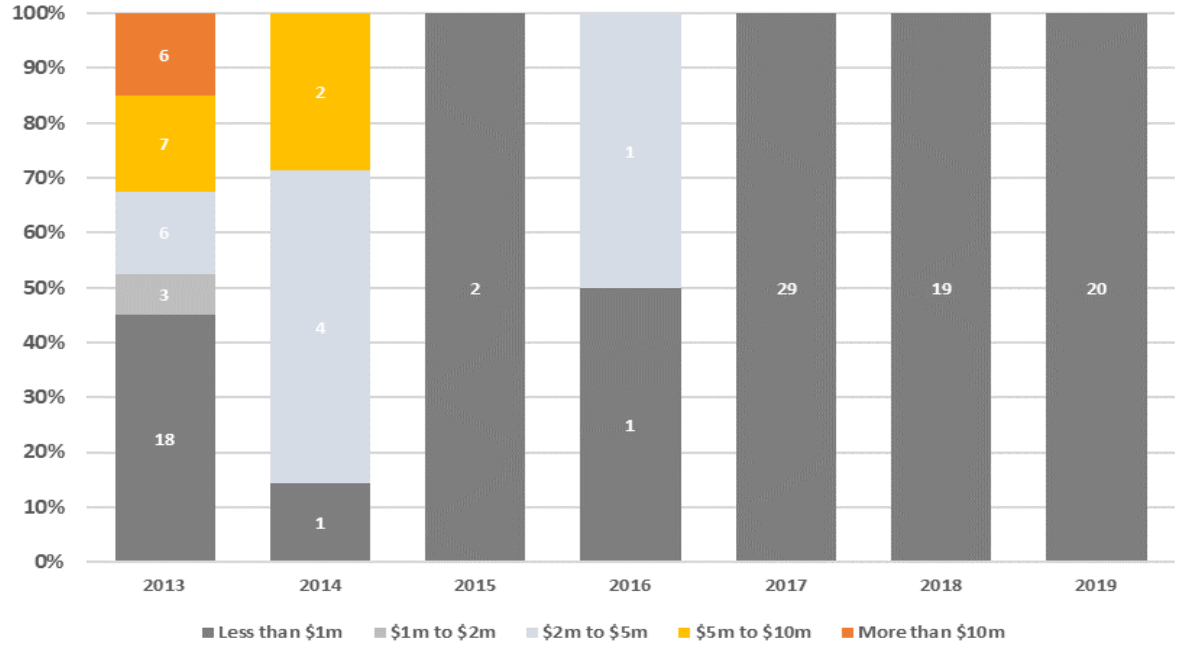
Figure C.8 Essential Energy: Largest and average total augmentation capital project expenditures by year project first included in the DAPR, 2013 – 2019, $'00,000 (119 projects)



Projects meeting the RIT-D cost threshold, 2013 - 2019

Figure C. 9 shows the share of all projects with capital expenditures less than $1 million, between $1 and $2 million, $2 to $5 million, $5 million to $10 million or more than $10 million grouped by the year the project first appeared in the DAPR. Figure C. 10 shows the same data for all augmentation projects. Adjusting the groups to reflect the RIT-D threshold from 2019 makes no difference. One project from the 2013 DAPR would have been affected, but the project was not an augmentation project and so would not have been covered by the RIT-D (assuming no other exemption category applied).

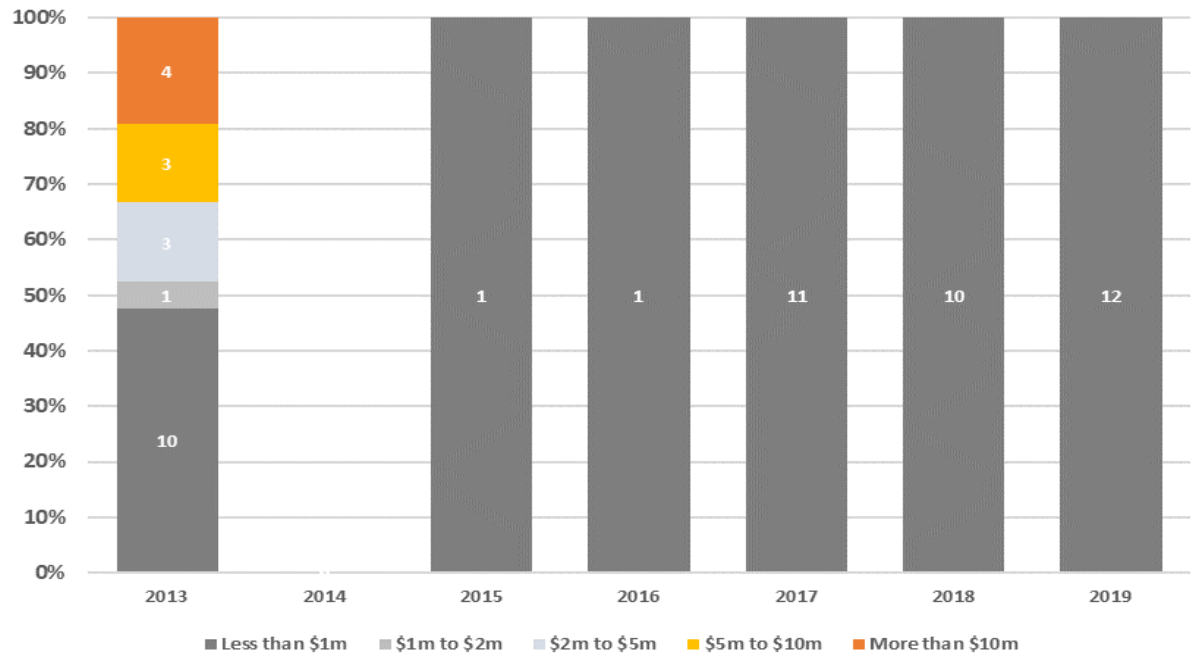
Figure C. 9 Essential Energy: Total identified capital project expenditures by year project first included in the DAPR and estimated cost, 2013 – 2019, number of projects and percent of total annual project number(119 projects)



The data show a very rapid shift in the composition of project budgets from the 2013 DAPR, where a third of the projects had budgets of $5 million or more to a quarter of all projects in the 2014 DAPR to no projects with actual or expected budgets of more than $1 million in 2015, 2017, 2018 or 2019. It also suggests the recent extension of the RIT-D to replacement and refurbishment (repex) projects is unlikely to materially enhance the market for non-network services in its franchise area. Since 2013 only 15 projects, all of them first included in either the 2013 or 2014 DAPRs, have been sufficiently large to qualify under the RIT-D cost threshold for coverage, assuming no other exemption applied.

As Figure C. 10 shows, in its 2013 DAPR Essential Energy had 7 projects that, before exemptions, would have been eligible to be covered by the RIT-D. All of these projects appear to have been exempt from the RIT-D. The AER's data show Essential with no RIT-D projects during the 2013 – 2017 period. Subsequently, no augmentation project has been sufficiently large to qualify for RIT-D coverage, even had other exemptions not been applicable. Essential Energy has implemented two load shifting projects over between 2013 and 2019. The average cost of these projects, at just under $120,000, is similar to the average cost of Essential Energy's augmentation projects since 2015.

Figure C. 10 Essential Energy: Total identified augmentation capital project expenditures by year project first included in the DAPR and estimated cost, 2013 – 2019, number of projects and percent of total annual project number (56 projects)



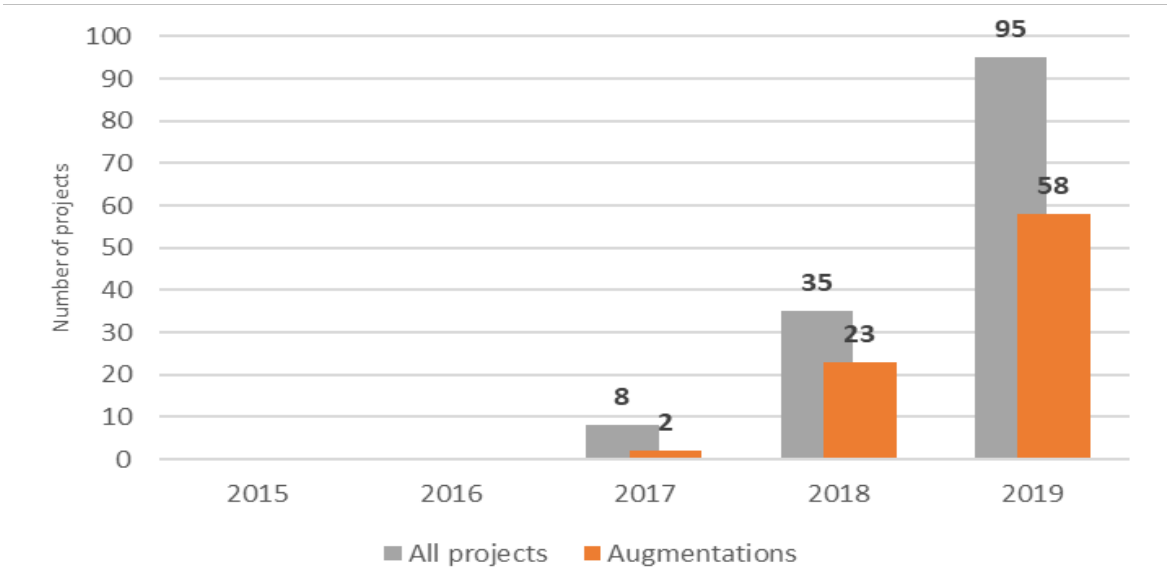
Attachment D: Ergon Energy, Evoenergy and United Energy – DAPR project data, available years

We have three or more years available DAPRs for Ergon Energy, Evoenergy and United Energy and have presented that information in charts similar to those used to present Essential Energy's data in the previous section. Our objective is to use this partial information to understand whether the trajectory in Essential's capital projects looks similar to the experience of other DNSPs.

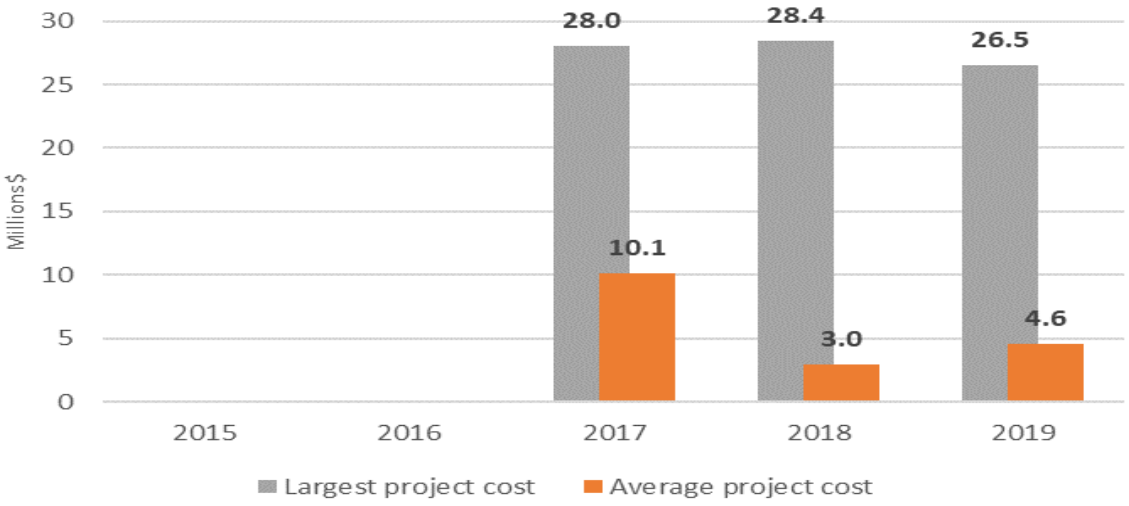
While we have checked the data, removed duplicate records and attempted to capture each project only once and in the year in which it was first mentioned in the DAPR, we have not sought additional information from these DNSPs, relying only on the information presented in the DAPRs. As a result, we may have the same project appearing more than once in different guises as detailed project descriptions relating to switchgear, zone substations, etc. morph into blander descriptions like "supply to Civic" for example. Also, it's possible that our classification of a project as an augmentation/refurbishment/new asset/etc. may not be consistent with the DNSP's classification, although any project described in the DAPR as subject to the RIT-D has been classified as an augmentation.

Ergon Energy

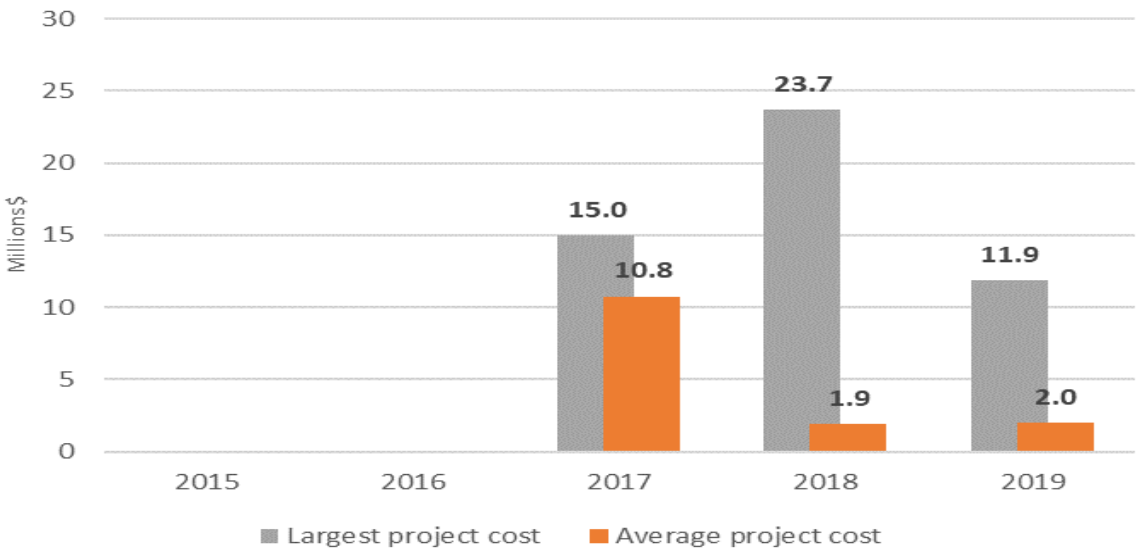
D. 1 Ergon Energy: All projects and Augmentation Projects by year in which first included in DAPR, 2017-2019, number of projects



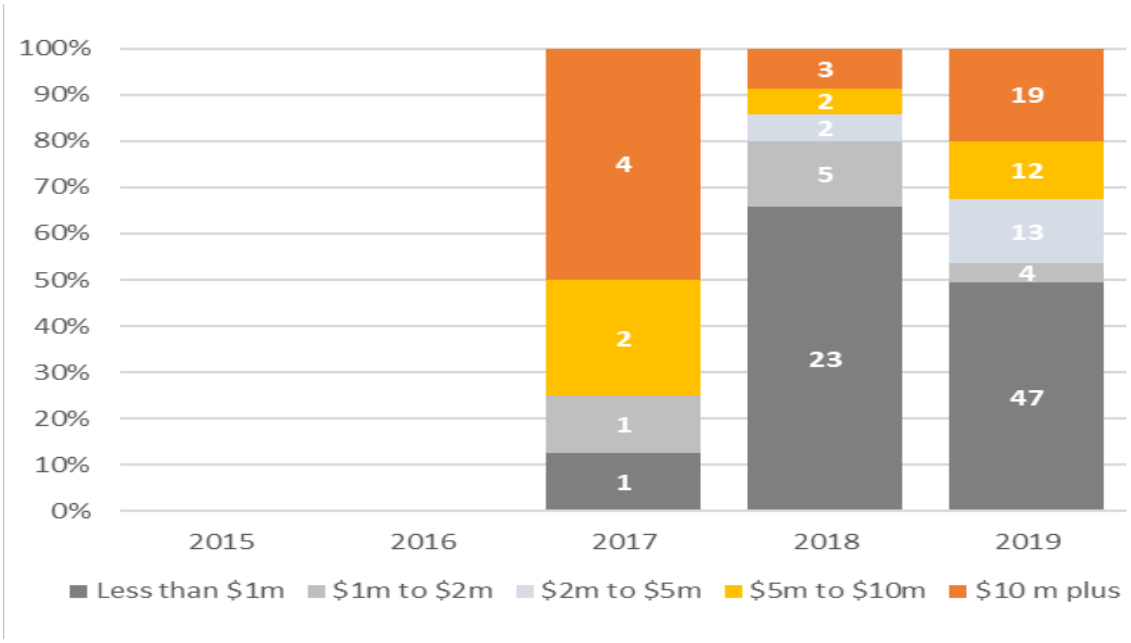
D. 2 Ergon Energy: Largest and average total identified capital project expenditures by year project first included in the DAPR, 2017 – 2019, $ millions



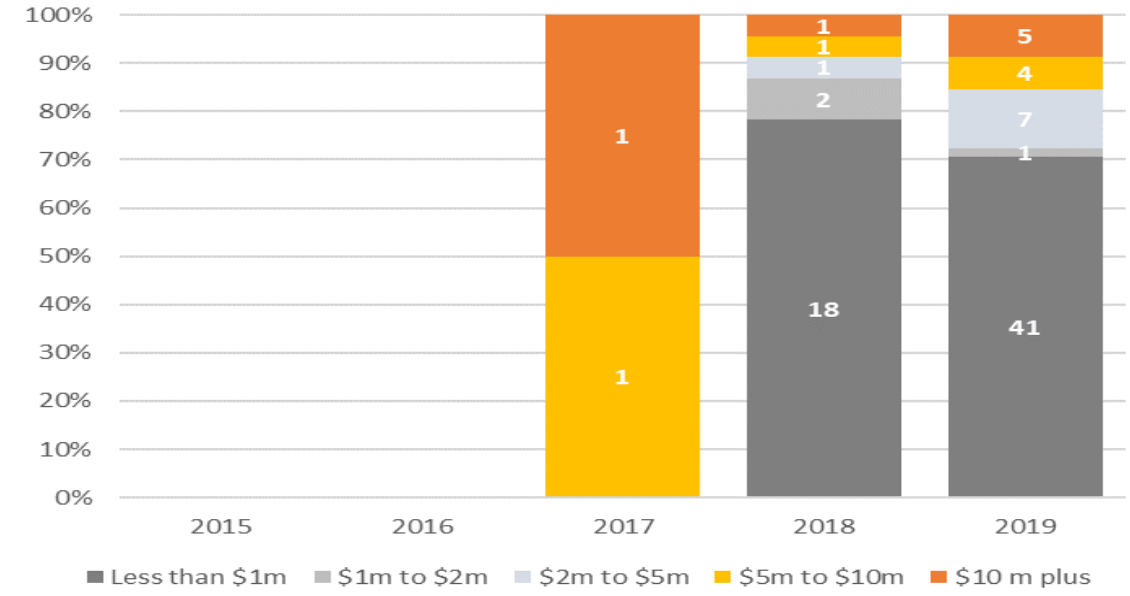
D. 3 Ergon Energy: Largest and average identified augmentation project expenditures by year project first included in the DAPR, 2017 – 2019, $ millions



D. 4 Ergon Energy: Total identified capital project expenditures by year project first included in the DAPR and estimated cost, 2017 – 2019, number of projects and percent of total annual project number

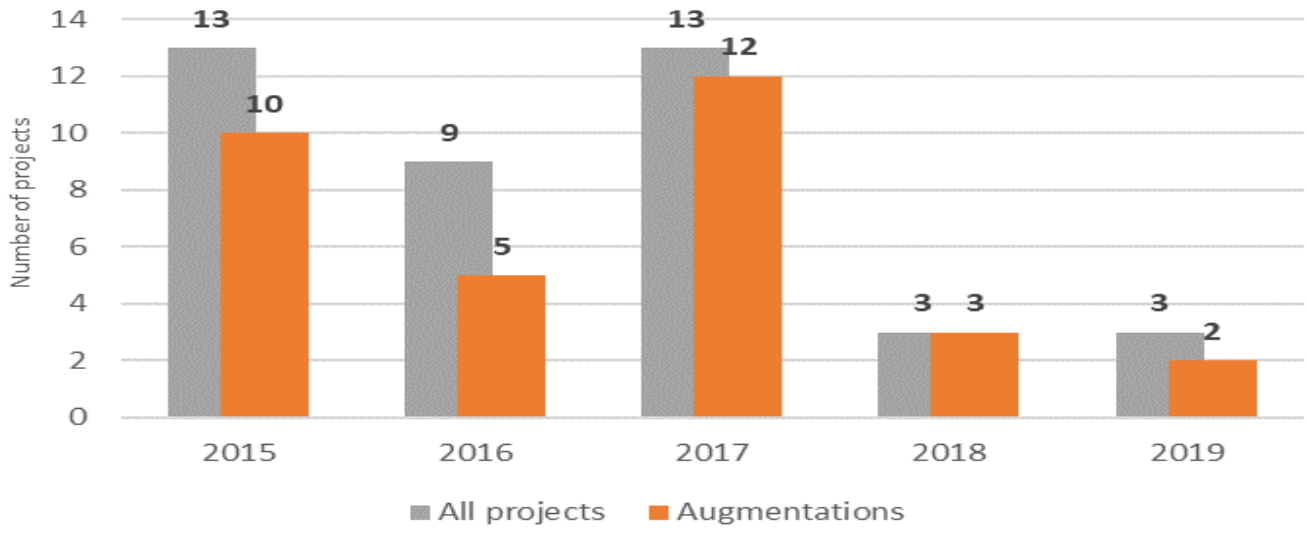


D. 5 Ergon Energy: Total identified augmentation capital project expenditures by year project first included in the DAPR and estimated cost, 2017 – 2019, number of projects and percent of total annual project number

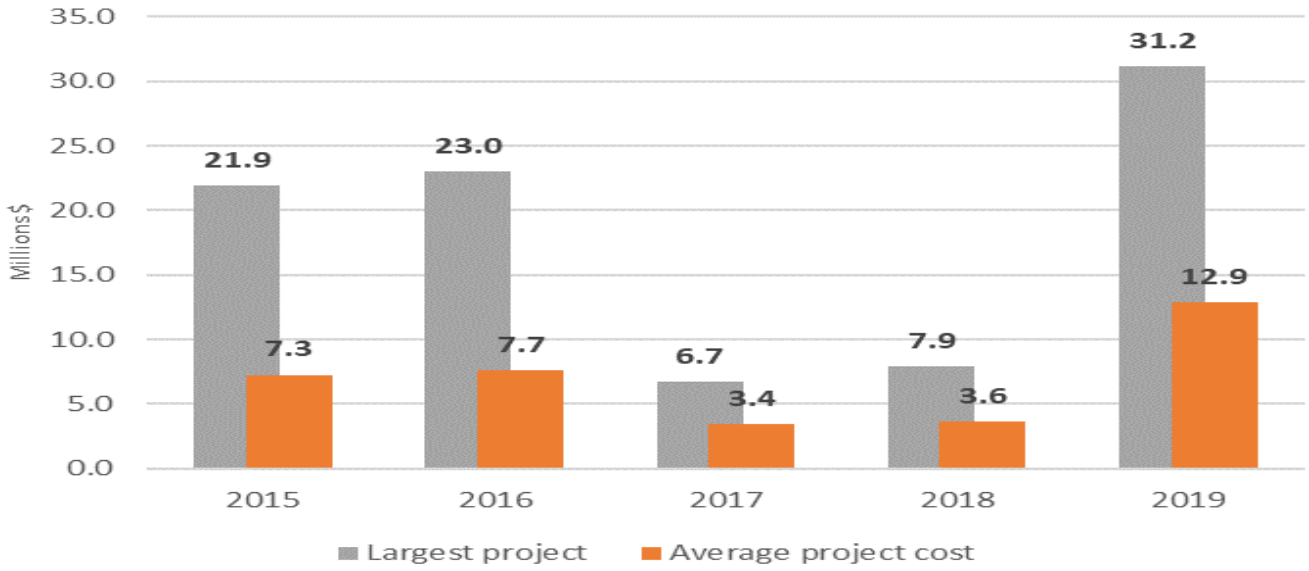


Evoenergy

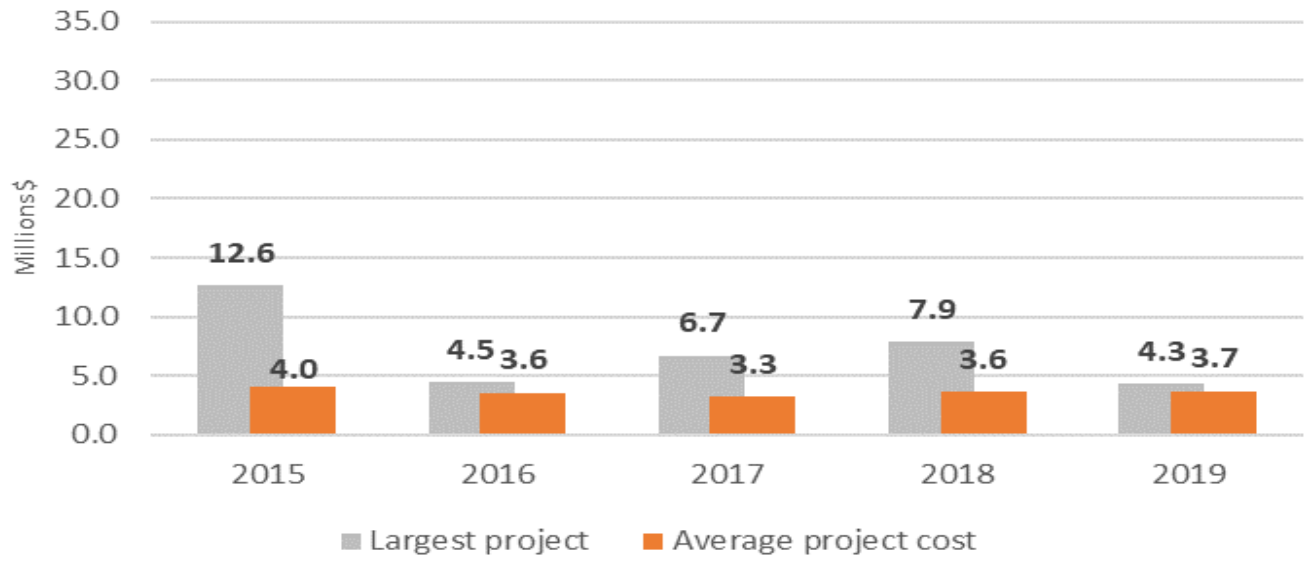
D. 6 Evoenergy: All projects and Augmentation Projects by year in which first included in DAPR, 2015-2019, number of projects



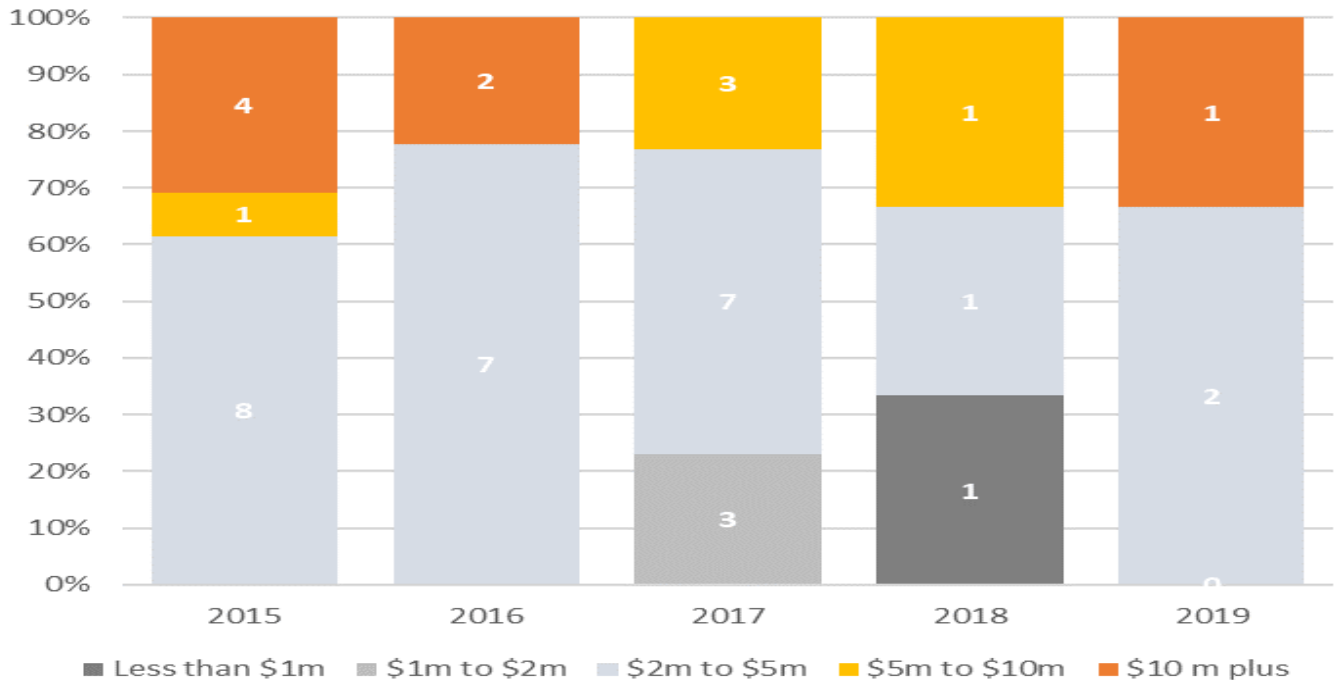
D. 7 Evoenergy: Largest and average total identified capital project expenditures by year project first included in the DAPR, 2015 – 2019, $ millions



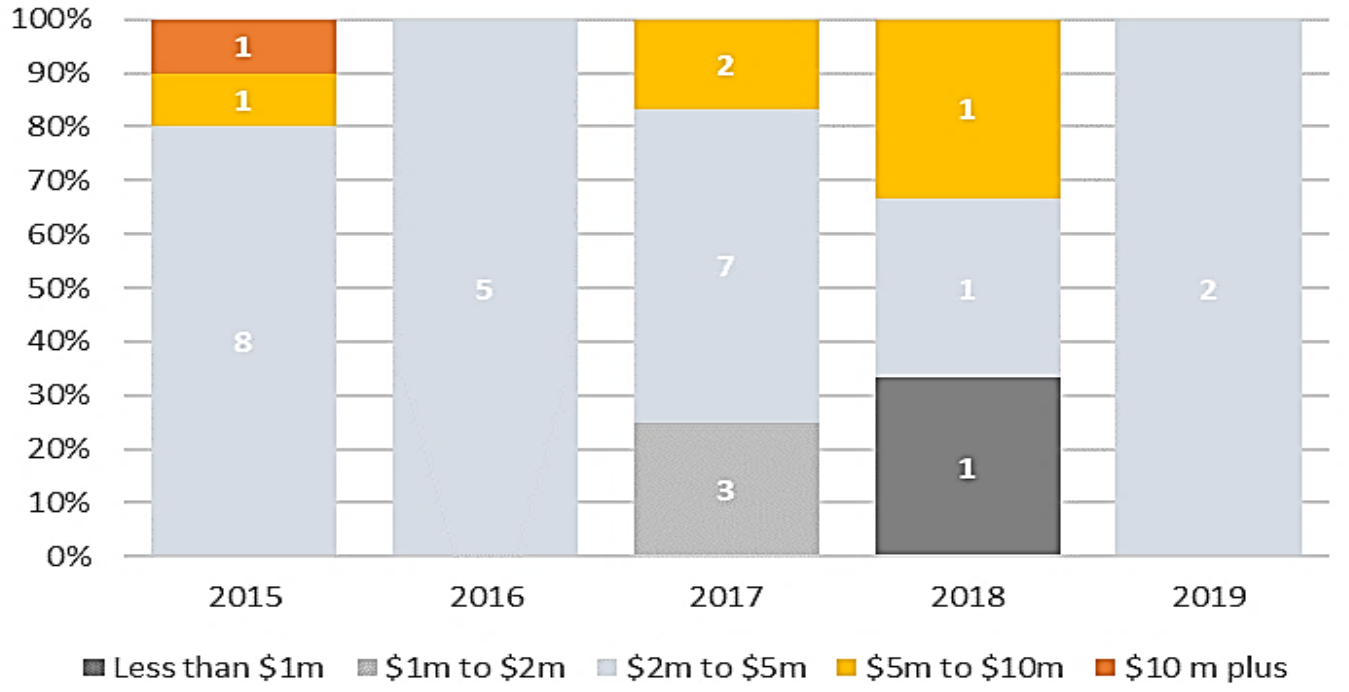
D. 8 Evoenergy: Largest and average identified augmentation project expenditures by year project first included in the DAPR, 2015 – 2019, $ millions



D. 9 Evoenergy: Total identified capital project expenditures by year project first included in the DAPR and estimated cost, 2015 – 2019, number of projects and percent of total annual project number

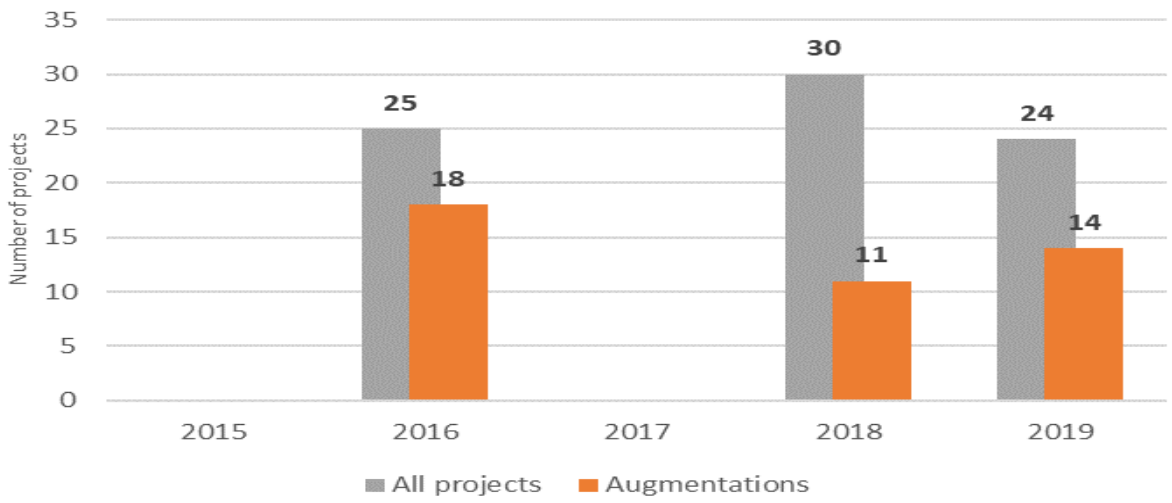


D. 10 Evoenergy: Total identified augmentation capital project expenditures by year project first included in the DAPR and estimated cost, 2015 – 2019, number of projects and percent of total annual project number (56 projects)

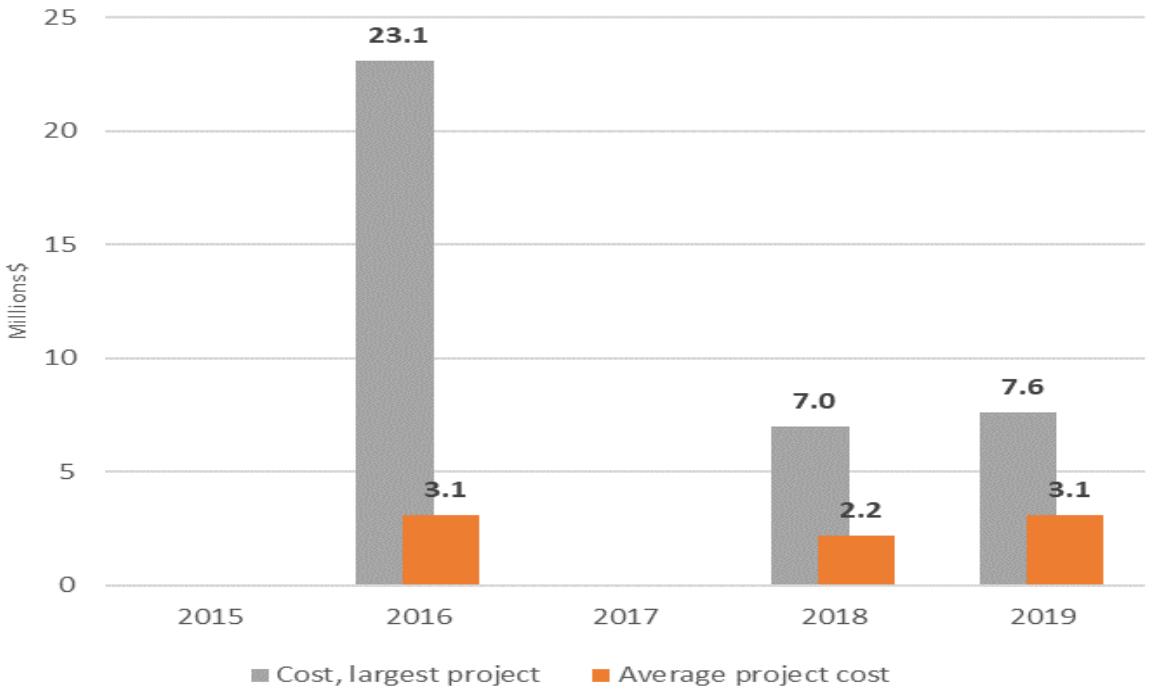


United Energy

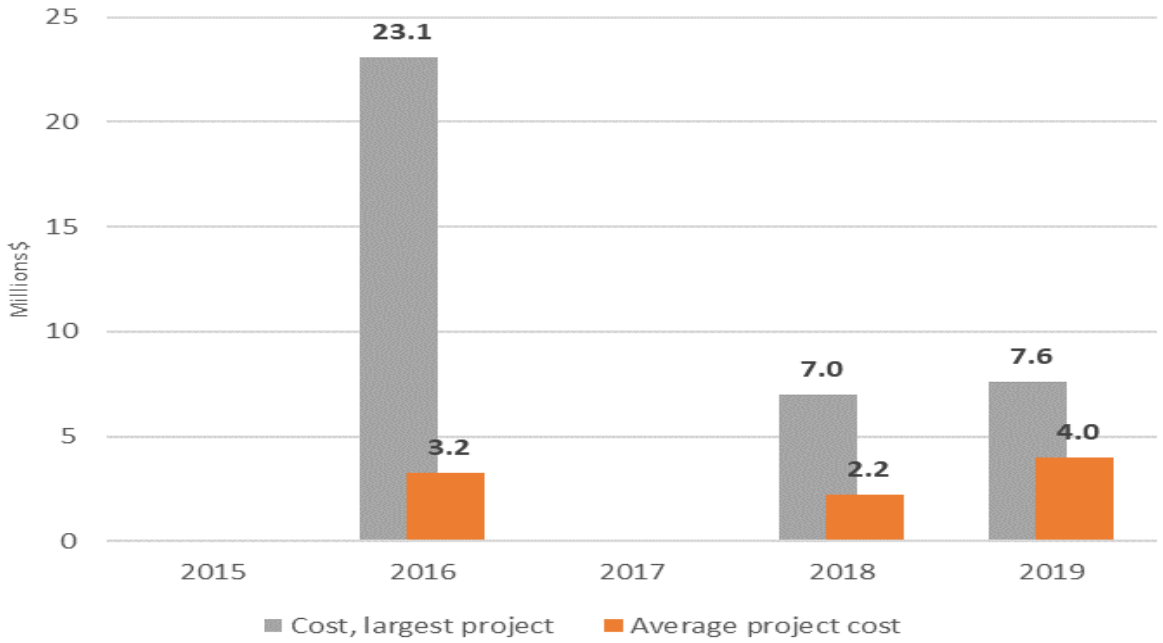
D. 11 United Energy: All projects and Augmentation Projects by year in which first included in DAPR, 2015-2019, various years, number of projects



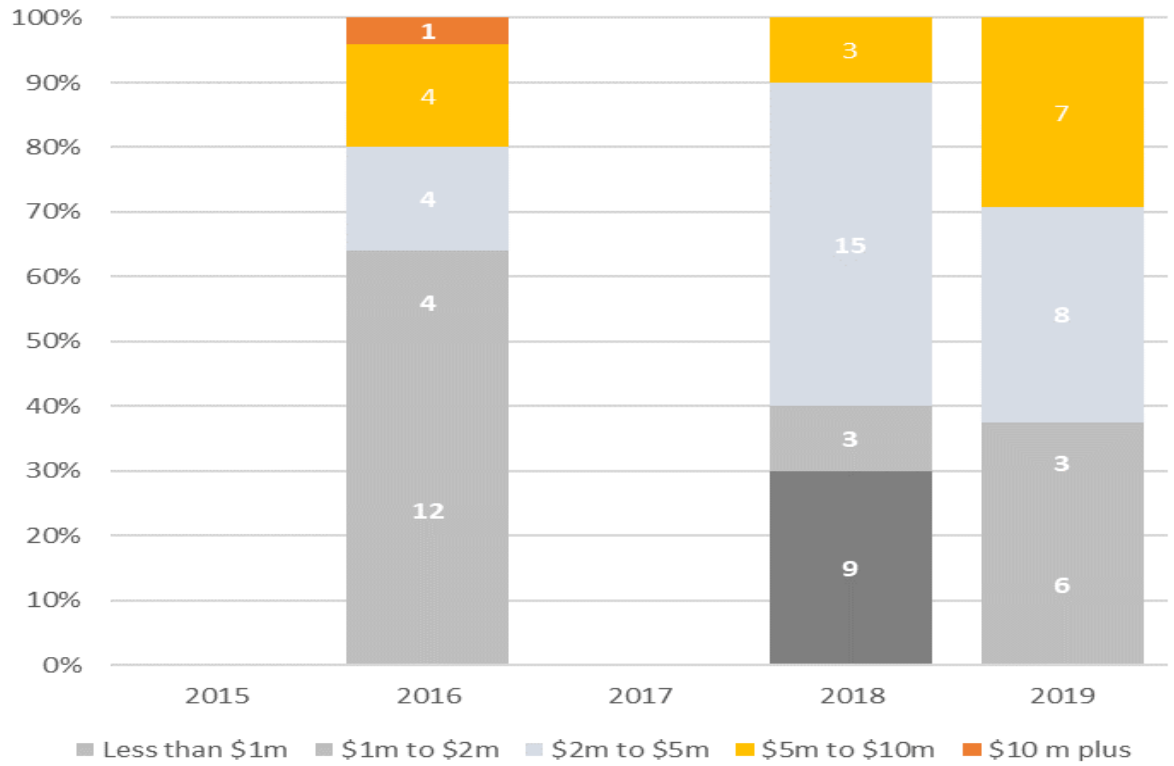
D. 12 United Energy: Largest and average total identified capital project expenditures by year project first included in the DAPR, 2015 – 2019, various years, $ millions



D. 13 United Energy: Largest and average identified augmentation project expenditures by year project first included in the DAPR, 2015 – 2019, various years, $ millions



D. 14 United Energy: Total identified capital project expenditures by year project first included in the DAPR and estimated cost, 2015 – 2019, various years, number of projects and percent of total annual project number



D. 15 United Energy: Total identified augmentation capital project expenditures by year project first included in the DAPR and estimated cost, 2013 – 2019, number of projects and percent of total annual project number