QLD electricity distribution determinations – Energex and Ergon 2020 to 2025

QCOSS Submission: AER Issues Paper

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About QCOSS

We are QCOSS (Queensland Council of Social Service), Queensland's peak body for the social service sector.

Our vision is to achieve equality, opportunity and wellbeing for every person, in every community.

We believe that every person in Queensland – regardless of where they come from, who they pray to, their gender, who they love, how or where they live – deserves to live a life of equality, opportunity and wellbeing.

We are a conduit for change. We bring people together to help solve the big social issues faced by people in Queensland, building strength in numbers to amplify our voice.

We're committed to self-determination and opportunity for Aboriginal and Torres Strait Islander people.

QCOSS is part of the national network of Councils of Social Service lending support and gaining essential insight to national and other state issues.

QCOSS is supported by the vice-regal patronage of His Excellency the Honourable Paul de Jersey AC**,** Governor of Queensland**.**

Join us to mobilise a force for equality, opportunity and wellbeing. To join visit the QCOSS website (www.QCOSS.org.au).

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Contents

Glossary 4
Introduction 5
Summary of issues and recommendations 6
Future risks and longer-term outlook 9
Benchmark performance 11
    Future directions 12
    Benchmarking customer outcomes 13
Capex 14
    Summary 15
ICT spending 16
Opex 17
Regulatory depreciation 19
    Energex's proposed move to year-to-year tracking 19
    Absorption of SPARQ into Energex and Ergon regulated asset base 20
    Interaction with corporate income tax allowance 20
EBSS and CESS incentive schemes 21
Consumer engagement 21
    Future consumer engagement 22
Appendix 1 - Energex and Ergon benchmark performance 24
    Capacity utilization 28
    Partial performance indicators 29
    Overall view on Energex and Ergon benchmark performance 30
    Benchmarking customer outcomes 30
Bibliography 32

Glossary

AEMO	Australian Energy Markets Operator
AER	Australian Energy Regulator
AUGEX	Augmentation Expenditure
CAPEX	Capital Expenditure
CCP	Consumer Challenge Panel
CESS	Capital expenditure sharing scheme
DER	Distributed energy resources
DMIA	Demand Management Innovation Allowance
DMIS	Demand Management Incentive Scheme
EBSS	Efficiency benefit sharing scheme
ENA	Energy Networks Association
EQ	Energy Queensland
GWh	Gigawatt hours
MTFP	Multilateral total factor productivity
MSS	Minimum Service Standards
NER	National Electricity Rules
RAB	Regulatory Asset Base
REPEX	Replacement Expenditure
SAPN	South Australian Power Networks
STPIS	Service Target Performance Incentive Scheme
TSS	Tariff Structure Statement
WACC	Weighted Average Cost of Capital (the rate of return)

Introduction

QCOSS welcomes the opportunity from the Australian Energy Regulator (AER) to provide comment on the 2020-25 regulatory proposals provided by Energex and Ergon (collectively Energy Queensland, or EQ).

Access to electricity that is affordable and reliable is vital to health and wellbeing. In making this submission in response to the AER's Issues Paper on the regulatory proposals of the two distributors, our objective is to outline where the AER should identify further savings to benefit all Queenslanders.

Since 2005, Energex and Ergon have invested heavily in their networks, increasing the size of their regulated asset bases by considerable margins. This has resulted in higher costs flowing through to higher electricity prices for Queensland households and businesses. This trend must be reversed for electricity to become affordable for the people of Queensland.

In its regulatory proposal, EQ has proposed a 10 per cent reduction in distribution use of system charges for residential customers. While this is good news, we are concerned that this proposed reduction is heavily dependent on several factors which may or may not continue through to the next regulatory period. These include:

- Record low interest rates
- An assumption that the Queensland Government will continue to fund the solar bonus scheme (SBS)[i] beyond 2020
- Forecast demand, which is currently assumed to be relatively flat. (If it instead falls prices will rise under the current revenue cap arrangement), and
- The once-off decision by EQ (conditional on acceptance of its revenue proposal) to forego revenue from the capital expenditure sharing scheme ($146 million) and efficiency benefit sharing scheme ($426 million).

The Consumer Challenge Panel estimated that the changes in the Weighted Average Cost of Capital (WACC) stemming from lower WACC values and lower interest rates account for half of the reduction in revenue. This means that the bulk of the revenue reductions proposed by EQ stem from environmental factors or decisions which are outside of EQ's control.

Electricity charges are a substantial burden on consumers, particularly low-income consumers and people with high uncontrollable energy use. We therefore consider it critical for the AER to investigate all possible avenues for further price reductions beyond those currently proposed by EQ. It will be important for the AER to assess the two distributors' regulatory proposals to ensure that not a cent more is spent on operational or capital expenditure than is necessary.

In QCOSS' view there are further possible savings to be made and QCOSS encourages the AER to seek them out. This submission discusses areas where savings are possible, as summarised in the next section.

QCOSS acknowledges and thanks Luke Berry of Engineroom Infrastructure Consulting for significant technical assistance in producing this submission.

Summary of issues and recommendations

The electricity supply world is changing. New forms of supply, as well as new tariff arrangements are likely to change both demand and peak demand. Persistently high prices and more efficient appliances have placed a cap on growth in demand, with demand flatlining or falling in many jurisdictions. At the same time new forms of generation such as distributed solar panels and batteries are posing a threat to existing supply chains.

The risks from these changes are significant for long-lived distribution assets. Energex and Ergon must be careful to contain future capex at a level which can be recouped from customers in these changing conditions. Energex and Ergon have invested heavily across the period since 2005, pushing up their regulated asset bases by considerable margins. This trend must be reversed for Energex and Ergon to be able to offer electricity at prices acceptable to consumers.

While the AER conducts a valuable benchmarking process comparing the distributors, this process is complicated by the fact that different distributors are at different points in the investment cycle, with some having made recent and large investments while others have such investments ahead of them as assets age and are retired. To gain a longer-term view, the AER should conduct forecast benchmarking given the different directions of capital and operating expenditure across the networks.

Benchmarking indicates some areas where Energex and Ergon do not compare favourably with their cohort, such as overhead costs and capacity utilisation. In terms of performance, both Energex and Ergon are only about 60 per cent of the performance level of the leading network provider. QCOSS urges the AER to consider whether this indicates scope for reduction in capex and opex costs.

Energex and Ergon propose to merge their jointly owned IT provider, SPARQ, into their regulated asset bases rather than paying for SPARQ's services through opex. However, the merger raises issues about whether SPARQ's asset base is prudent, and whether the merger is the lowest cost way of obtaining IT services. It also increases the asset base and return on assets and depreciation allowance while reducing opex. A cost effectiveness analysis should inform this decision. If SPARQ were to be merged into Energex and Ergon, these return on asset allowances and opex impacts would need to be accounted for in assessing Energex and Ergon benchmark performance and spending in the 2018-19 base year. Additionally, the SPARQ assets should be depreciated over the life of the underlying assets to which they have contributed to avoid price shocks for customers.

QCOSS favours continuing with current approaches to regulatory depreciation for Energex, including the weighted average remaining life approach and the use of straight-line depreciation.

Finally, QCOSS considers there is a continuing role for consumers and consumer advocates to hold distributors to account on their performance between regulatory determinations. The AER should consider expanding the role of the Consumer Challenge Panel to monitor consumer outcomes during regulatory periods. Energex and Ergon should also provide financial support to enable consumer advocates to remain engaged in the regulatory process throughout the regulatory periods.

QCOSS' key issues and recommendations are summarised in the following table.

Issues and opportunities to reduce costs	QCOSS recommendations
There are increasing risks for electricity distributors with changes in demand, peak demand, and the emergence of Distributed Energy Resources (DER).	Recommendation One: Based on changes in operating conditions, the AER should assess future capex rigorously against ever increasing risk of stranding through changes or falls in demand or technological obsolescence.
The external environment for networks is changing rapidly as demand and peak demand slow down and new technologies threaten to strand existing assets.	Recommendation Two: The AER should assess whether its current approach to assessing capex remains fit-for-purpose in an environment where the risks of asset stranding through changes in demand or due to emerging technologies are increasing.
Peak demand tariffs are proposed for the first time for Energex and Ergon. Their impact on demand and peak demand should be considered in determining future augex.	Recommendation Three: The AER should forecast the impact of peak-demand tariffs on the shape of overall demand to evaluate whether augex aimed at expanded supply at peak times is justified.
Overhead costs for Energex and Ergon have been persistently above the average of other distributors.	Recommendation Four: The AER must investigate the cause of the high overhead costs of Ergon and Energex (particularly Ergon).
Different networks are heading in different direction in terms of their capex and opex spending, which has the potential to change the benchmark ranking of distributors. **It would assist stakeholders for the AER to forecast likely future Multilateral Total Factor Productivity (MTFP) based on allowed revenues and other factors.**	Recommendation Five: On the basis of allowed or forecast revenues across the NEM networks, the AER should forecast Energex and Ergon multilateral total factor productivity to 2025 compared to other distributors.
Capacity utilization at both Energex and Ergon is persistently low and falling. This reduces the case for future capital spending on both repex and augex.	Recommendation Six: The AER should investigate the scope for reductions in Energex and Ergon's capex in view of their low utilization levels, and the rationale presented by Ergon to pull forward spending to the 2020-25 regulatory period.

Issues and opportunities to reduce costs	QCOSS recommendations
Merging SPARQ into Energex and Ergon may or may not be the lowest cost way of providing the IT services that the distributors need.	Recommendation Seven: The AER must require EQ to demonstrate the savings that stem from bringing SPARQ in-house compared to contracting out those services.
Energex and Ergon propose to add SPARQ assets to their Regulatory Asset Bases (RABs), so the SPARQ asset base needs to be evaluated to determine if it is prudent	Recommendation Eight: The AER should assess whether the SPARQ asset base is prudent and the minimum asset base required to provide IT services.
Energex and Ergon base year opex needs to be adjusted for the inclusion of SPARQ . The capex trend similarly needs to be adjusted with the increase in assets.	Recommendation Nine: The AER should ensure base year opex in 2018-19 accounts for the reduction in opex from the merger of SPARQ into Energex's and Ergon's RAB, and adjust capex and opex trends for analysis purposes to account for the merger of SPARQ.
Energex and Ergon base year performance in 2018-19 is likely to be below 0.75 of the leading performer given the two distributors are at 0.6 in 2016-17. **This would indicate there are potential savings to be made in opex and the base year may be materially inefficient.**	Recommendation Ten: The AER should analyse, publish, and compare the efficient base year performance of a distributor based on the Australian cohort and compare it with Energex's and Ergon's actual performance in their proposed base year of 2018-19.
Energex's existing WARL approach to depreciation should be continued to avoid an impact on prices and for the sake of consistency.	Recommendation Eleven: The AER should retain the existing WARL regulatory depreciation approach for Energex.
SPARQ assets if included in the Energex and Ergon RABs, should be depreciated in line with the underlying assets that they contribute to.	Recommendation Twelve: The AER should require that SPARQ assets be depreciated over the age profile of the underlying assets rather than the life of the IT assets.
There are proposals in other arenas to use the diminishing value method for deprecation. In terms of regulatory depreciation, straight-line depreciation should continue to be used.	Recommendation Thirteen: The AER should continue to use straight-line depreciation in calculating regulatory depreciation.

Issues and opportunities to reduce costs	QCOSS recommendations
It is important for consumers to continue to actively engage with Energex and Ergon between regulatory control periods – both to ensure capacity and knowledge is maintained for the next determination, and for consumers to actively hold Energex and Ergon to account on the outcomes they are achieving for consumers.	Recommendation Fourteen: The AER should consider providing a wider role for the Consumer Challenge Panel to monitor consumer outcomes between regulatory control periods. Energex and Ergon should provide financial support for consumer advocates to engage on regulatory reset issues.

Future risks and longer-term outlook

There are some risks that could disrupt the forecast revenues and prices that Energex and Ergon may charge.

External factors affecting network revenues going forward include:

- Interest rates rising affecting the cost of debt
- Uncertain changes in total and peak demand
- Role of grid in connecting generation (DER) and managing two way flows
- Technological uncertainty around future supply and demand
- Sustainability focus and management of climate change
- Tariff changes

First, demand and peak demand are both increasingly uncertain. The uptake of solar panels does not appear to be abating with factors such as the end of the 44 cent/kWh feed-in tariff for new residential solar panels under the solar bonus scheme.[ii] This is beginning to challenge the hosting capacity of feeders to manage two-way flows from solar panels and traditional sources of supply. We can see from South Australia that residential and commercial solar generation is forecast to exceed minimum demand in that State by the middle of next decade. The economic conditions exist for a similar experience in Queensland, with plentiful sun, low and falling solar panel costs, and comparatively high electricity prices. It remains to be seen if the forecast 10 per cent fall in distribution charges and new tariff peak pricing structures will help to reduce the gap between on-house solar supply and grid supply.

Energex is forecasting very slightly rising energy and peak demand over the 2020-25 regulatory control period.[iii] They are forecasting average annual peak demand growth of 0.29 per cent.[iv] Energex forecasts total energy transported to grow from 21,332 GWh in 2019-20 to 21,730 GWh in 2024-25, a rise of less than 2 per cent over five years.[v]

Similarly, Ergon is forecasting flat demand and peak demand. They forecast that annual peak demand will grow by 0.38 per cent during the 2020-25 regulatory control period.[vi] Ergon forecasts that total demand will rise from 13,820 GWh in 2019-20 to 13,979 GWh in 2024-25, a rise of just over 1 per cent over five years.[vii]

These very low peak and total demand growth forecast increase the risk for capex.

Second, batteries are likely to emerge as a cost-effective solution for residential and commercial users sometime in the 2020-2030 decade. Batteries are likely to ease management issues, as they absorb power from solar panels and reduce two-way flows. However, it is possible that batteries could draw power from the grid to recharge (either because a user does not have solar power or because the batteries are seeking to recharge when panels are not generating). Under these circumstances, batteries could increase demand on the network. The emergence of batteries is likely to render a significant amount of substation expansion unnecessary as batteries can be installed at substations to expand capacity.

Tariff changes are likely to impact on demand. Up to now, the standard tariff has been tariff 11. Tariff 11 is currently a single rate plus a daily fixed charge. This has not encouraged users to divert use to off-peak times. Off-peak tariffs are available, but the user has to be aware of these tariffs, have an additional meter, and have the meter wired to particular appliances that can tolerate only being used off-peak.

As a result, a move to tariff structures that encourage off-peak use could shift use from peak to off-peak times on some use that can be moved, such as washing, cooking, ironing. Tariffs such as smart control tariffs and solar sponge tariffs might be able to achieve this outcome.

The impact of these factors is that:

- Capex could much more easily become stranded;
- There could be reductions in peak demand, particularly arising from restructuring of tariffs and the emergence of batteries; and
- There are likely to be more options available apart from traditional expansion of the grid to supply incremental power to customers, including DER.

In these circumstances, Energex and Ergon need to be more careful in spending capex that might become stranded and rigorous in assessing capex against existing and emerging alternatives. The AER as regulator must be similarly vigilant about proposed capex.

Recommendation One:

Based on changes in operating conditions, the AER should assess future capex rigorously against ever increasing risk of stranding through changes or falls in demand or technological obsolescence.

Recommendation Two:

The AER should assess whether its current approach to assessing capex remains fit-for-purpose in an environment where the risks of asset stranding through changes in demand or due to emerging technologies are increasing.

Recommendation Three:

The AER should forecast the impact of peak-demand tariffs on the shape of overall demand in order to evaluate whether augex aimed at expanded supply at peak times is justified.

Benchmark performance

A key issue is the level of efficiency of Energex and Ergon in providing electricity distribution services to customers. The relative performance of these distributors compared to other Australian electricity distributors is a good indicator of areas where performance could be improved.

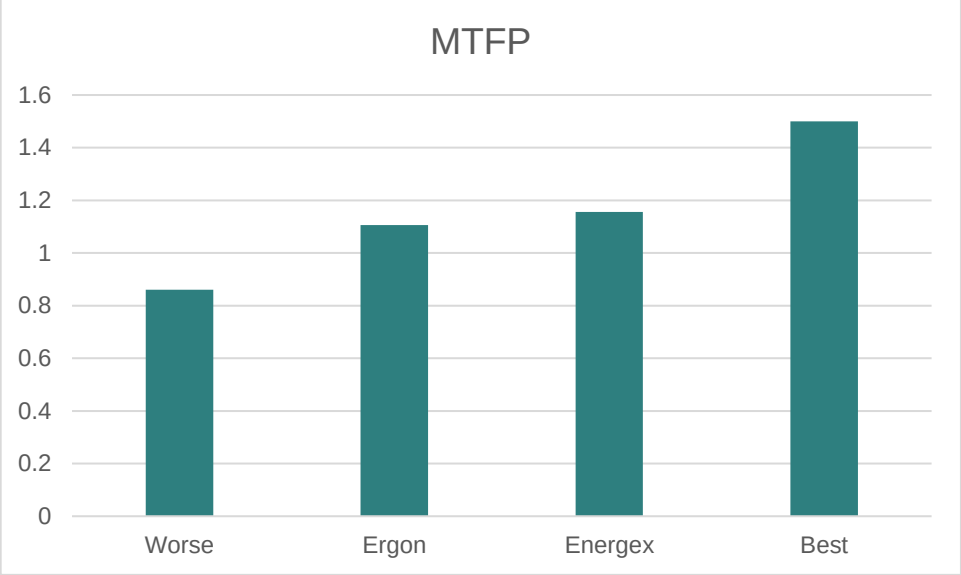
The AER conducts an annual performance benchmarking exercise comparing the thirteen distributors in the NEM. The AER examines multilateral total factor productivity (MTFP), capital expenditure productivity, and operating expenditure productivity. The most recent report was released in November 2018 and considers performance during the period from 2006 to 2017.[viii]

The benchmarking report provides a basis for assessing whether Energex and Ergon are operating at or near the frontier of efficiency, and for assessing whether there are potential efficiency savings to be made on the distributors' proposed capex and opex for the coming regulatory control period.

QCOSS has conducted a review of the benchmark performance of Energex and Ergon. The overall conclusions of this review are:

- Distribution charges are a higher proportion of the total bill in Queensland than in any other State or Territory in the NEM, representing 40 per cent of the total bill for retail customers.[ix]
- Network revenue charges in Queensland have risen by more than any other jurisdiction in the period from 2006 to 2017.[x]
- These outsized rises in costs and proportion of total residential bill would generally suggest the potential for Energex and Ergon to be able to find efficiency savings relative to current levels of capex and opex.
- Energex's and Ergon's performance are both in the middle of the pack for total factor productivity (MTFP) and capital and operating efficiency.
- There is a significant gap between Energex and Ergon's performance and that of the best performer, Citipower. Ergon performed at about 74 per cent of the efficiency of Citipower, while Energex performed at 77 per cent. See Figure 1 below.
- For MTFP Energex has tracked close to the NEM average, with Ergon improving from below the average to right on the average.[xi]
- In terms of partial performance measures, Ergon and Energex do not perform well on average total overheads per customer against average customer density ($2017). Ergon is well above its peers, including other networks with low customer densities, while Energex's overhead costs are also significantly elevated.[xii] It is noted that Energy Queensland is forecasting a 10 per cent fall in overhead costs over 2020-25.[xiii]

Figure 1: MTFP relative performance of the worst, best, and Queensland distributors



One other factor that affects benchmark performance is the capacity utilization levels. If utilization falls, this is reflected in lower capital efficiency.

The CCP slides from the presentation at AER's public forum (9 April 2019) provide statistics on constrained feeders for 2017/18, 2020/21 and 2024/25 which show the number of constrained feeders remains static across the period.[xiv] The CCP slides also show that both Energex and Ergon capacity utilization fell over the period 2006 to 2018, and remained below the average of NEM networks across the entire period.[xv] The low capacity utilization would suggest a limited need for augex.

More detailed commentary by QCOSS on Energex and Ergon's benchmark performance is contained in Appendix 1.

Recommendation Four:

The AER must investigate the cause of the high overhead costs of Ergon and Energex (particularly Ergon).

Future directions

Energex and Ergon (particularly Ergon) seem to be improving their relative position. It will be interesting to evaluate Energex and Ergon's comparative performance by the end of the 2020-25 regulatory control period.

Overall, most networks are cutting opex and capex for the forward regulatory control period. In this context, Energex and Ergon might be expected to improve their productivity indexes but hold their relative productivity positions.

Recommendation Five:

Based on allowed or forecast revenues across the NEM networks, the AER should forecast Energex and Ergon multilateral total factor productivity to 2025 compared to other distributors.

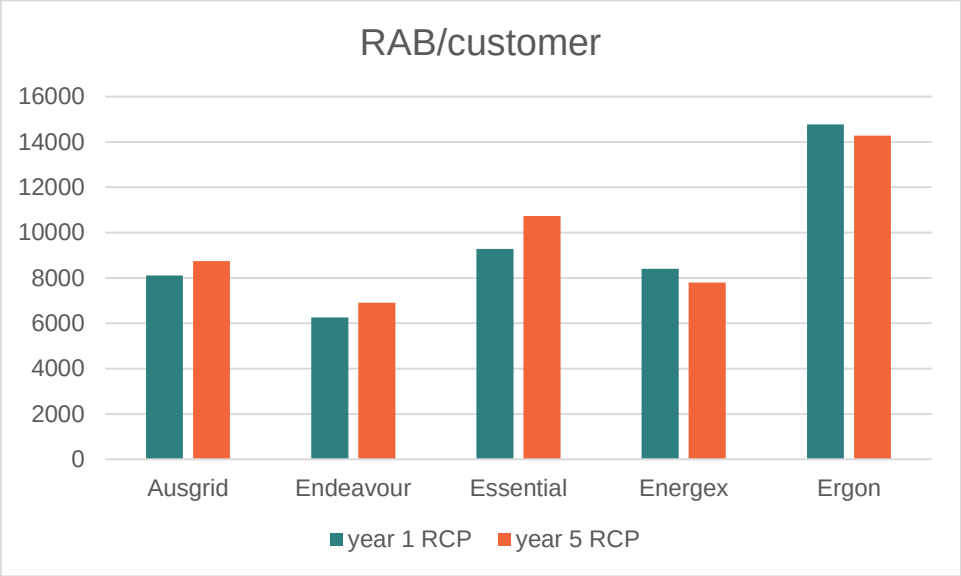
Benchmarking customer outcomes

In addition to benchmarking performance, it is important to assess the cost of supply to customers. QCOSS has benchmarked the cost of delivering electricity through the distribution network to customers on two measures:

- the amount of assets used per customer (or RAB/customer);
- the amount of revenue collected per customer (or revenue/customer).

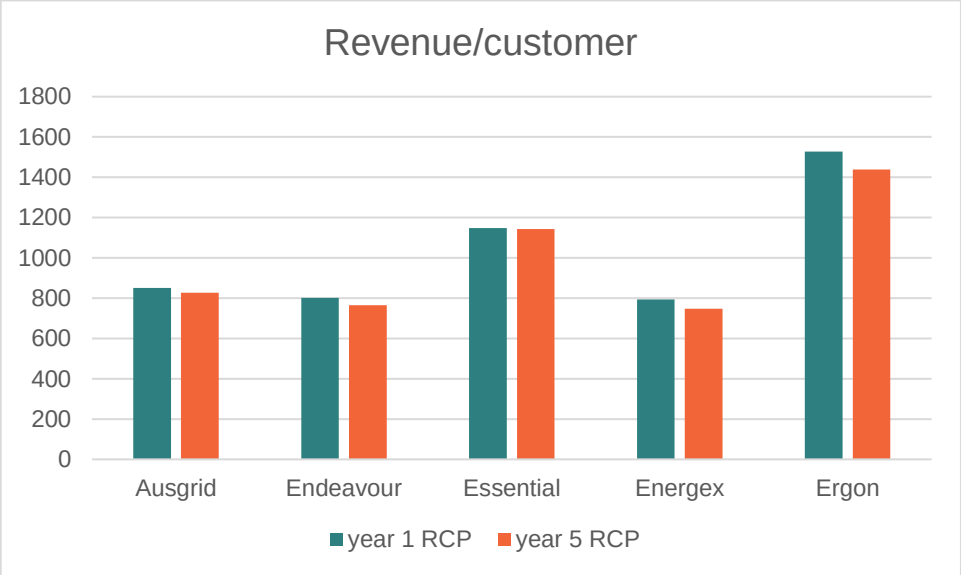
Compared to the three NSW distributors, Ergon is significantly above the equivalent rural NSW distributor, Essential Energy, while Energex is about the middle of the pack (Figure 2).

Figure 2: RAB/customer for Qld and NSW networks (mix of real $ for Qld and nominal $ for NSW)[xvi]



Similarly, on revenue per customer, Energex in the middle of the pack while Ergon is significantly higher than other distributors, including Essential Energy (Figure 3).

Figure 3: Revenue/customer for Qld and NSW networks (mix of real $ for Qld and nominal $ for NSW)[xvii]



These measures indicate it is significantly more costly for Ergon to provide services than the other four distributors, including Essential Energy, suggesting that further efficiencies may be possible.

Capex

Capex is the capital expenditure on long-lived assets that is necessary to supply electricity distribution services. These assets are added to the regulated asset base, and their cost is recovered over the life of the asset through rate of return and a depreciation allowance. By contrast, operating expenditure is recovered each year.

In the electricity distribution sector, assets tend to have much longer lives than other sectors, with some asset lives up to 50 years. This means that any over-investment in assets may result in recovery of the value of the asset over many years.

As noted earlier, Energex and Ergon need to develop strong business cases for proposed capex given historically high capex in current and recent regulatory control periods, and the increasing risks going forward. This high uncertainty emphasises the need for the networks to adopt flexibility and a 'no regrets' approach to capex spending to avoid stranding investment.

Energex is proposing capex of $2.0 billion for the 2020-25 regulatory control period, a decrease of 20 per cent on net capex for 2015-20.[xviii] The decrease is across all categories of capex (augex, repex, non-network, connections, overheads).

Ergon is proposing capex of $2.7 billion for the 2020-25 regulatory control period, compared with $2.5 billion in 2015-20, representing an increase of 8 per cent.[xix]

The reduced capex spending by Energex is not surprising in one sense, as it is likely to be in part due to the high level of behind-the-meter spending by consumers on solar panels and batteries, which have allowed for deferral of some augex. It would be reasonable to review the capex proposals in light of these savings.

Repex is expenditure on replacement of network assets with assets that provide the same level of services. Repex may not be justified in circumstances where assets at the end of their lives can be replaced with lower capacity assets.

In 2020-25, Energex has proposed $643 million of repex.[xx] In assessing Energex's repex, it needs to be noted that currently:

- Energex's network displays low utilization levels compared to comparable networks, making it more difficult to justify replacement of like-for-like.
- While Energex's repex is down by 26 per cent from the 2015-20 regulatory control period, it is important not to overlook the very high starting point in 2015-20. In fact, the higher the repex spending allowance during 2015-20, the stronger the justification for a lower allowance in 2020-25.

Connections capex is the capex borne by the network in connecting new customers. Energex is proposing connections capex of $475 million, which is 13 per cent below 2015-20. Again, it should be noted that while proposed spending is below 2015-20 spending levels, this is partly because spending is coming off a very high base.

In 2020-25, Ergon is proposing repex of $1094 million, 23 per cent higher than in the current period.[xxi] This amount has been boosted $214 million or 24 per cent since the draft proposal proposed $880 million as recently as September 2018. (A clear picture of the areas where repex has increased since the draft proposal is difficult as the draft proposal figures were presented at a high level).[xxii] It seems somewhat surprising that Ergon would not have had a longer forward view of its repex requirements.

Other elements of Ergon's proposed capex have also raised some concerns:

- Again, Ergon's network currently has a low level of utilization, similar to Energex.
- The rationale to boost capex spending now to avoid a boom-bust cycle in capital spending[xxiii] implies some early ramping up of capex ahead of requirements.
- The rationale to be proactive in addressing safety risks[xxiv] suggests a different risk approach than historically. This raises the question whether the historical or implied forward risk approach is the more appropriate, and whether being more proactive has the risk of providing a solution early when a lower cost solution might emerge at the time that the safety risk is significant.

Summary

While Energex's capex has gone down significantly from 2015-20, this reflects the historically high capex during 2010-15 and 2015-20. Given the low utilization levels of Energex's network, there is likely to be scope for further savings, particularly in repex and customer connections.

Ergon is likely to be able to find savings on its proposed capex budget, given its low utilization rate and the fact that some of its capex proposal is based on pull-forward factors, such as spending early to moderate boom-bust cycles, and a change in stance to proactively spending on safety-related capex.

Recommendation Six:

The AER should investigate the scope for reductions in Energex and Ergon's capex in view of their low utilization levels, and the rationale presented by Ergon to pull forward spending to the 2020-25 regulatory control period.

ICT spending

IT expenditure is generally classified as non-network capex. It is divided between direct and indirect capex, with indirect capex collected via overhead charges.

Prior to 2020, Energex and Ergon purchased IT services from a jointly-owned but separate entity, SPARQ, on a fee-for-service basis, with SPARQ assets not included in Energex's and Ergon's RAB.[xxv] SPARQ is to be merged in Energex and Ergon's RABs from 2020, with its assets of about $300 million to be added to Energex and Ergon's RABs.

This makes it difficult to compare the 2020-25 regulatory control period with previous periods.

Energex and Ergon have presented what is stated to be like-for-like information on direct and indirect IT costs, as shown below in tables 1 and 2.

Table 1: Energex IT proposal for 2020-25 ($2020) million[xxvi]

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Indirect	22.1	21.7	20.8	19.2	17.5	101.3
Direct	37	36.8	42.5	38.5	38.2	193
Total						294.3

Table 2: Ergon IT proposal for 2020-25 ($2020) million[xxvii]

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Indirect	28.8	29.9	31.9	32.6	34	157.2
Direct	44.4	43.9	42.8	37.8	41.3	210.2
Total						367.4

Energex and Ergon note that they have decreased proposed IT expenditure (Energex, minus $43 million, Ergon minus $16 million) from the draft proposal in response to consumer feedback.[xxviii]

Most of the proposed IT capex is classified as replacement capex, meaning that it does not improve productivity. For example, Energex classifies 82.7 per cent of its IT spending as replacement, while for Ergon the figure is 83.8 per cent.[xxix] The AER needs to conduct a thorough examination of whether this IT repex is required at this time.

More broadly, EQ should be required to demonstrate the savings that stem from bringing SPARQ in-house compared with options to contract out these services. The AER could conduct an assessment on whether the SPARQ asset base is the prudent and the minimum asset base required to provide IT services.

Finally, bringing the SPARQ assets into the RABs of Energex and Ergon should result in a material fall in opex (by the amount being recouped by SPARQ to cover its asset base) and an offsetting increase in capex (by the return on the SPARQ assets in the Energex and Ergon RABs). This change needs to be taken into account in comparing historical to forward capex and opex across the business, and in particular in determining the appropriate base year opex in 2018-19.

Recommendation Seven:

The AER must require EQ to demonstrate the savings that stem from bringing SPARQ in-house compared to contracting out those services.

Recommendation Eight:

The AER should assess whether the SPARQ asset base is prudent and the minimum asset base required to provide IT services.

Recommendation Nine:

The AER should ensure base year opex in 2018-19 accounts for the reduction in opex from the merger of SPARQ into Energex's and Ergon's RAB, and adjust capex and opex trends for analysis purposes to account for the merger of SPARQ.

Opex

Opex or operating expenditure is recurring, non-capital expenditure incurred in providing electricity distribution services. Opex is recovered in the year that it is incurred.

The AER requires distributors to apply the Base-Step-Trend approach to developing opex, by:

- selecting a base year that represents efficient expenditure;
- proposing steps that adjust for proposed savings or additional expenses compared to the base year (such as savings from removal of particular regulatory requirements); and
- trending the adjusted opex forward by CPI less an efficiency factor.

Energex is proposing total opex for 2020-25 of $1806 million. This is a small real reduction in Energex's opex allowance in 2020-25 compared to 2015-20. Energex are proposing to use 2018-19 as the base year, with zero steps, and a productivity improvement of 1.72 per cent.[xxx]

Ergon is proposing to spend $1835 million in opex across 2020-25.[xxxi] Ergon is not proposing any steps and has identified a productivity improvement of 2.58 per cent.[xxxii]

QCOSS does not raise any issues with Energex or Ergon's proposed steps or trending approach. However, it will be important for the AER to critically assess whether Energex's 2018-19 base year opex is efficient. We note from our earlier benchmarking discussion that Energex's opex performance is around the middle of the pack for its cohort, while Ergon has improved to be just below Energex by 2017.

Figures 4 and 5 below (showing opex performance over the 2012-17 period and over the longer 2006-17 period) show that Energex and Ergon are performing at roughly 60 per cent of the performance of the leading networks (Citipower and Powercor).

Figure 4: Opex multilateral partial productivity 2012-17 average[xxxiii]

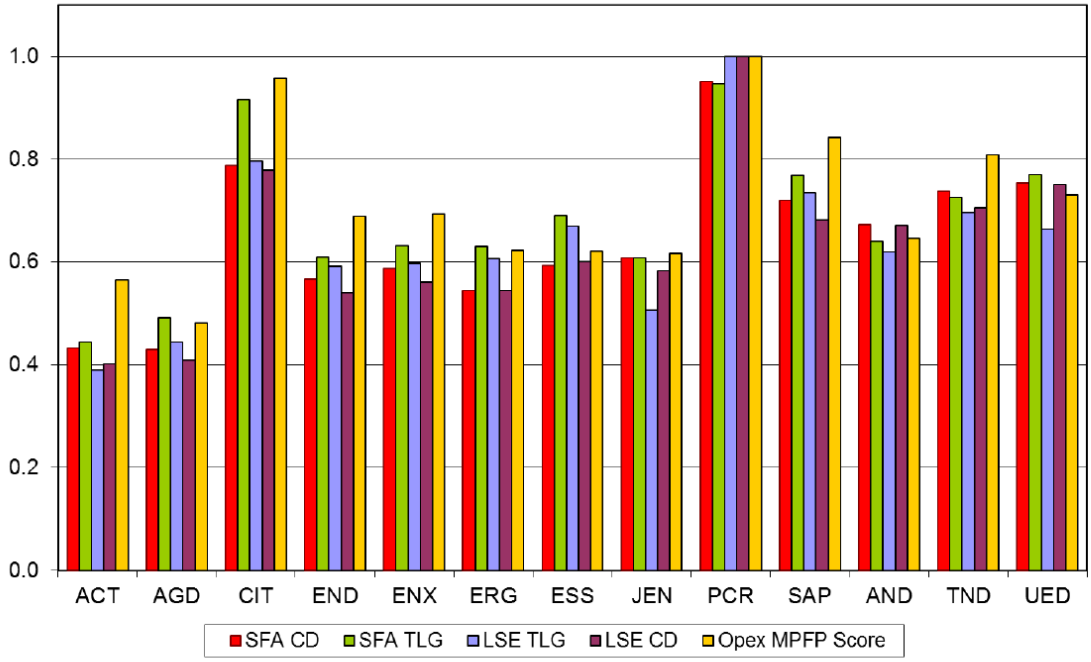
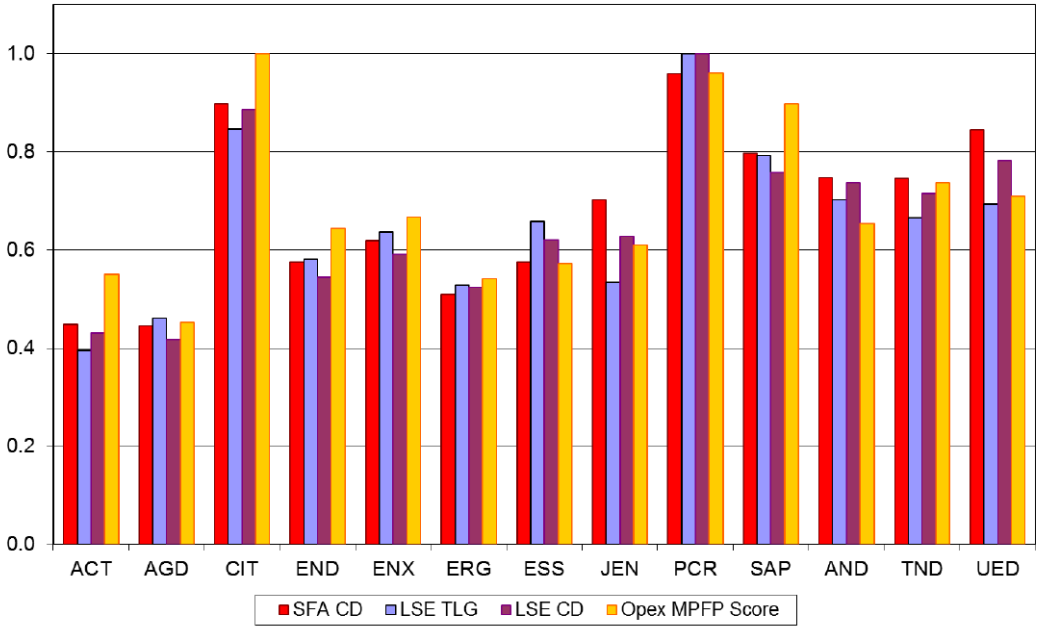


Figure 5: Opex multilateral partial productivity 2006-17 average[xxxiv]



The benchmark adopted by the AER is 75 per cent of the performance of the leading network. This would suggest Energex and Ergon's proposed base year 2018-19 opex is likely to contain a reasonable degree of inefficiency, which should be adjusted for in terms of assessing their reasonable opex levels for 2020-21 and beyond.

There is likely to be scope for improvements in opex for both networks to lift them to the point of efficiency.

Recommendation Ten:

The AER should analyse, publish, and compare the efficient base year performance of a distributor based on the Australian cohort and compare it with Energex's and Ergon's actual performance in their proposed base year of 2018-19.

Regulatory depreciation

Regulatory depreciation is an allowance provided to cover the reduction in the real value of capital assets over the regulatory control period. The current arrangement applied in 2015-20 is straight-line depreciation less an inflation indexation adjustment of the regulated asset base.[xxxv]

The AER Issues Paper states that Energex is forecasting regulatory depreciation for 2020-25 will be 55 per cent higher in real terms than in 2015-20. However, the AER allowed $1996.4 million in depreciation allowances in 2015-20 (nominal).[xxxvi] In 2020-25, Energex is seeking depreciation of $2437.33 million (nominal),[xxxvii] which appears to be a 25 per cent increase in depreciation allowance compared to the previous period.[xxxviii]

The AER attributes the uplift in regulatory depreciation for Energex to four factors:[xxxix]

- The increase in the regulated asset base (RAB);
- The absorption of SPARQ in the regulated asset base from a standalone service, with a proposed 10 year asset life;
- More assets in the RAB with a shorter asset life; and
- The move [from WARL] to year-to-year tracking, which the AER expects to lift depreciation by 8.1 per cent.

Ergon is forecasting that regulatory depreciation that will be 27 per cent higher in real terms than in 2015-20.[xl]

Ergon currently uses the year-to-year tracking approach to calculate depreciation.[xli] [xlii] The AER Issues Paper incorrectly says that Ergon uses the period-to-period tracking approach.[xliii] The AER issues paper attributes the rise in Ergon's regulatory depreciation to the same factors cited for Energex, except for the move to year-to-year tracking.[xliv]

QCOSS comments on these issues below.

Energex's proposed move to year-to-year tracking

Energex is proposing to move from period-to-period tracking (or the weighted average remaining life, WARL method) from year-to-year tracking of depreciation. The AER has previously stated its preference for the WARL methodology as "this method reflects the mix of assets within the asset class [and] also reflects when the assets were acquired over that period and the remaining asset lives of existing assets at the end of that period."[xlv]

We prefer continuing the WARL approach, as it is consistent with Energex's current approach, aids transparent analysis of Energex over time, and for the reasons given above by the AER.

Recommendation Eleven:

The AER should retain the existing WARL regulatory depreciation approach for Energex.

Absorption of SPARQ into Energex and Ergon regulated asset base

SPARQ was set up when Energex and Ergon were run as separate organisations to provide a common back office for the provision of IT services. As such, SPARQ was a separate organisation rather than part of Energex or Ergon, and its services were charged as an annual opex expense while its asset base was separate from Energex's or Ergon's RAB.

The AER has previously criticized this approach as it makes it difficult to compare Energex and Ergon with other distributors which provide IT services in-house.[xlvi]

EQ proposes that now that Energex and Ergon have been merged, it will merge SPARQ into Energex and Ergon and allocate its $300 million asset base to Energex's and Ergon's RAB.[xlvii] This will increase regulatory depreciation and decrease opex, as the external yearly charge for IT services will become an internal mix of opex and return on capital.

EQ proposes that the SPARQ assets should be depreciated over 10 years, and notes that customer feedback preferred a 10 year depreciation period rather than a five year depreciation period.

While the merger of SPARQ into Energex and Ergon may make sense, it does not imply that the IT assets in SPARQ should be depreciated over 10 years. QCOSS considers that these assets should be aligned with the underlying assets that they contribute to and depreciated in line with those asset lives. For example, if IT assets are used to build transformers, then the values should be depreciated over the life of transformers.

QCOSS notes that when asked by EQ customers preferred a 10-year depreciation life for the ex-SPARQ assets over five years. However, customers were presented with a binary choice of a 5 or 10 year depreciation life. They were not asked if they preferred the IT assets being depreciated over the life of the underlying assets that they contribute to building.

QCOSS considers that depreciating the IT assets over the life of the underlying assets makes sense. When people contribute to building assets, their labour is added to the capex and depreciated over the life of the assets, rather than the life of the people. In the same way, the IT assets should be depreciated over the age profile of the underlying assets rather than the life of the IT assets.

Recommendation Twelve:

SPARQ assets should be depreciated over the age profile of the underlying assets rather than the life of the IT assets.

Interaction with corporate income tax allowance

The AER noted that in the estimate of the corporate income tax allowance, its latest approach is to "adopt the diminishing value method for tax depreciation to all future capex except for a limited number of assets which must be depreciated using the straight-line (SL) depreciation method under the tax law".[xlviii] QCOSS assumes that this approach on depreciation is confined to the method for estimating the corporate income tax allowance rather than more broadly represents the AER's approach to estimating depreciation. QCOSS considers it is

preferable for depreciation purposes to continue the existing approach of applying straight-line depreciation as with long-lived electricity assets it best represents the cost of service provision.

Recommendation Thirteen:

The AER should continue to use straight-line depreciation in calculating regulatory depreciation.

EBSS and CESS incentive schemes

An efficiency benefit sharing scheme (EBSS) for savings in opex, and a capital expenditure sharing scheme (CESS) apply to Energex and Ergon for the 2015-20 regulatory control period.[xlix]

We understand that Energex and Ergon are not proposing at this time to claim amounts owed to them under the EBSS and CESS.[l]

Energex claims it is foregoing $157.34 million in EBSS entitlements and $106.97 million in CESS entitlements, while for Ergon, the foregone EBSS is $268.51 million and the forgone CESS is $39.33 million.[li]

The distributors state that they are forgoing the CESS and EBSS entitlements "based on our customers' key concerns of safety, affordability, security and sustainability".[lii] They have inserted a caveat that their decision to forego the entitlements under the two incentive schemes is "subject to the AER's acceptance of our Regulatory Proposal" and in "the event that the AER has any material concerns with our proposals in its Draft Determination we will reassess our approach to these schemes to ensure our revised proposal continues to provide a balanced approach in the long-term interest of consumers".[liii]

QCOSS welcomes the fact that Energex and Ergon have foregone the EBSS and CESS. However, we are somewhat disappointed that they consider it necessary to include a caveat. If EQ revised its position in response to the draft AER decision, it would open up a new issue at a late stage in the regulatory decision-making process.

Given the caveat provided by the distributors, it will be important for the AER as part of its review process to assess carefully whether the amounts claimed under the EBSS and CESS are consistent with the EBSS and CESS scheme rules. Overall, the AER should not adjust its position to review carefully the regulatory proposals for 2020-25 on the basis that this might somehow cause the distributors to add back in their claims for CESS and EBSS amounts. The position of the networks on the CESS and EBSS and the amount allowed by the AER for revenues in 2020-25 are separate issues and there should not be a link between them.

Consumer engagement

QCOSS acknowledges the hard work that EQ put into engaging with consumers and consumer advocates in preparing the regulatory proposals. QCOSS considers that EQ provided good detail in sessions with consumer advocates, shared information, were keen to help consumers understand their business, followed up in response to questions, and listened to consumer feedback in reshaping the regulatory proposal over time.

EQ has been willing to engage with stakeholders, listen to them and respond by making changes as a result of that engagement. The process of engagement continued after the release of a draft proposal up to the submission of a proposal to the AER in January 2019.

EQ organized community forums around Queensland, five deep-dive sessions for community advocates on different aspects of its regulatory proposal, and several tariff structure statement (TSS) sessions. EQ responded to many of the questions raised by stakeholders during the deep-dive sessions at the time or in subsequent sessions. They created an Issues Register to capture and respond to issues as they arose. EQ also changed its proposal in terms of providing the forecast price reduction as a P0 reduction rather than a smoothed reduction, its treatment of leases, the approach to depreciation of SPARQ assets, and a reduction in the ICT program.

QCOSS would like to thank the representatives of the AER's Consumer Challenge Panel (CCP) who attended the deep-dive and TSS sessions and made significant contributions during these sessions.

QCOSS acknowledges the AER for organizing a public forum in April 2019 to hear first-hand about consumers' and stakeholders' issues. The CCP representatives and a number of consumer groups[liv] including QCOSS provided presentations at the AER public forum. QCOSS is supportive of the positions taken by the CCP at the public forum.

QCOSS attended all the deep-dive sessions and three of the community forums and made submissions on the EQ draft proposal released in September 2018. QCOSS also attended the public forum organized by the AER in April 2019.

Future consumer engagement

To ensure that capacity and knowledge is maintained for the next regulatory period, and for consumers to be able to actively hold Energex and Ergon to account on the outcomes they are achieving for consumers, it will be important for consumers to be able to engage with Energy Queensland between regulatory control periods.

At present, Energy Queensland has not set up a consumer forum with specific responsibility to look at revenue and tariff structure issues beyond the development of the regulatory proposal. There is an existing consumer council but this deals with high level, strategic issues and does not provide sufficient detail or resources to enable consumers to examine the components of revenue and tariff structure determinations.

QCOSS considers that resources should be provided to enable consumers to have an ongoing role in engaging with Energy Queensland on revenue and tariff structure issues throughout the regulatory control period. Consumer advocates put a considerable amount of time and energy into participating in revenue and tariff structure determination processes and should be supported to do so. These processes are very technical and require a significant amount of expertise, so the financial support provided must be commensurate with the time and resources required to provide informed advice and input. It is not adequate to just provide consumer advocates with sitting fees.

There are several ways that consumers could be better enabled to play a more active role in regulatory processes. These include:

- The AER could give its CCP members a wider role in actively monitoring consumer outcomes and holding distributors to account on regulatory reset issues between determinations.
- Energex and Ergon could provide financial support to enable consumer advocates to continue to engage on regulatory reset and tariff structure issues.
- The Queensland Government could establish a permanent consumer body in Queensland (similar to the Public Interest Advocacy Centre in NSW) which would be well placed to engage on a wide range of technical issues affecting consumers.

Recommendation Fourteen:

The AER should consider providing a wider role for the Consumer Challenge Panel to monitor consumer outcomes between regulatory control periods. Energex and Ergon should provide financial support for consumer advocates to engage on regulatory reset issues.

Appendix 1 - Energex and Ergon benchmark performance

A key issue is the level of efficiency of Energex and Ergon in providing electricity distribution services to customers. The relative performance of these distributors compared to other Australian electricity distributors is a good indicator of areas where performance could be improved.

The AER conducts an annual performance benchmarking exercise comparing the thirteen distributors in the NEM. The AER examines multilateral total factor productivity (MTFP), capital expenditure productivity, and operating expenditure productivity. The most recent report was released in November 2018 and considers performance during the period from 2006 to 2017.[lv]

The benchmarking report provides a basis for assessing whether Energex and Ergon are operating at or near the frontier of efficiency, and for assessing whether there are potential efficiency savings to be made on the distributors' proposed capex and opex for the coming regulatory control period.

At the outset, it is worth noting that at 40 per cent of the total bill for retail customers, distribution charges are a higher proportion of the total bill in Queensland than in any other State or Territory in the NEM.[lvi] In the ACT, distribution charges represent only 26 per cent of the total bill. Additionally, network revenue charges in Queensland have risen by more than any other jurisdiction in the period from 2006 to 2017.[lvii]

These outsized rises in costs and proportion of total residential bill would generally suggest the potential for Energex and Ergon to be able to find efficiency savings relative to current levels of capex and opex.

The AER report assessment of MTFP finds that Energex placed 5th out of the 13 distribution networks, with a 2017 score of 1.156, while Ergon placed 6th with a score of 1.106.[lviii]

Rather than considering the ranking of Energex and Ergon, QCOSS considers it is more important to consider:

- the relative gap between Energex, Ergon, and better performing networks; and
- the trend performance of Energex and Ergon over time.

This is because the relative gap between Energex, Ergon and better performers shows the potential size of the efficiency loss in Energex and Ergon's performance, and thus the potential gain for customers if Energex and Ergon were able to close this gap and pass on the savings to consumers. By contrast, rankings and year-to-year performance can move around (eight of the 13 distributors changed ranking between 2016 and 2017), and small changes in index score can change relative rankings (six distributors, Energex to Evoenergy, have a 2017 index score just over 1). It would be valuable for the AER to calculate the value that would be passed on to customers of Energex and Ergon of attaining an index score of 1.500, i.e. that of best performer, Citipower.[lix]

Figure A1 below shows the MTFP performance of the worse, best, and Queensland distributors to show the relative gap between the Queensland distributors and the most efficient distributor.

Citipower achieved an index performance of 1.500, which shows that Ergon performed at about 74 per cent of the efficiency of Citipower, while Energex performed at 77 per cent.

Figure A1: MTFP relative performance of the worst, best, and Queensland distributors

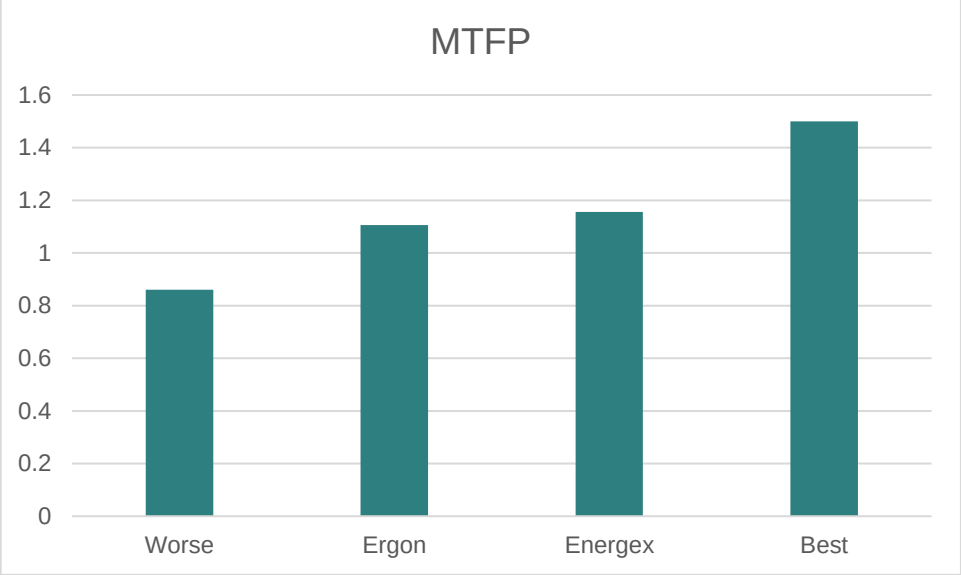
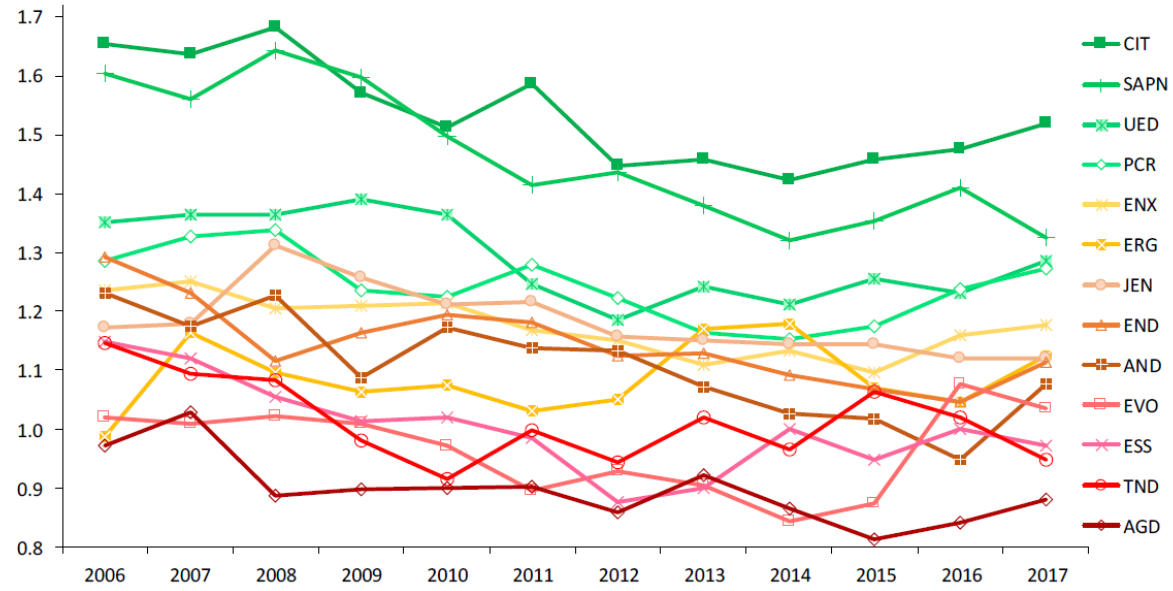


Figure A2 shows the MTFP performance of Energex and Ergon from 2006 to 2017.[lx] It shows that Energex's MTFP performance has remained relatively flat, while Ergon's performance has improved by a reasonable margin, though with greater volatility from year to year. Their performance is in the middle of the pack, with a reasonable gap to the next three distributors above them and then a further gap to the best performing distributor. Figure A3 shows that Energex has tracked close to the NEM average, with Ergon improving from below the average to right on the average.[lxi]

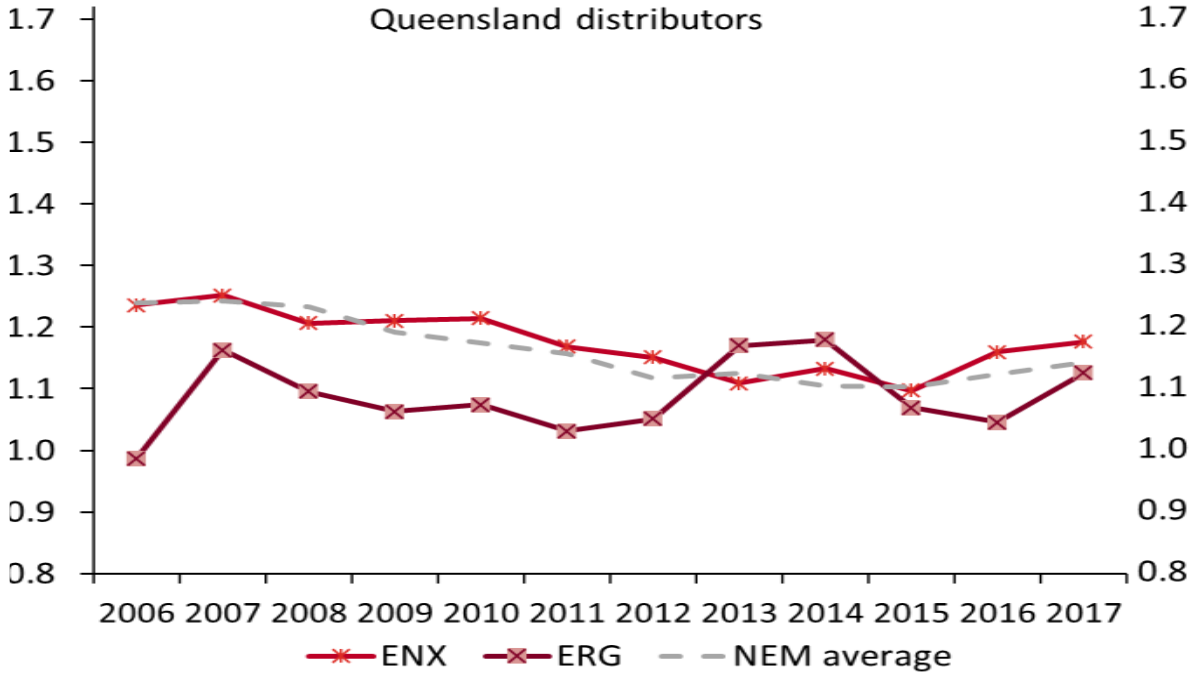
It would be instructive for the AER to project forwards the relative MTFP efficiency of Energex and Ergon to 2024 or 2025 by comparing them to other distributors on the assumed basis of their proposed capex and opex allowances against the allowances sought or allowed for other distributors, and forecast gains in factors such as circuit length and customer numbers. This would show whether Energex and Ergon are likely to be able to maintain or improve their position relative to other distributors out to 2024 or 2025 and to close the gap on the best performer.

Figure A2: MTFP performance of the 13 distributors in the NEM



Source: Economic Insights, AER analysis.

Figure A3: Queensland distributor MTFP performance compared to the NEM average

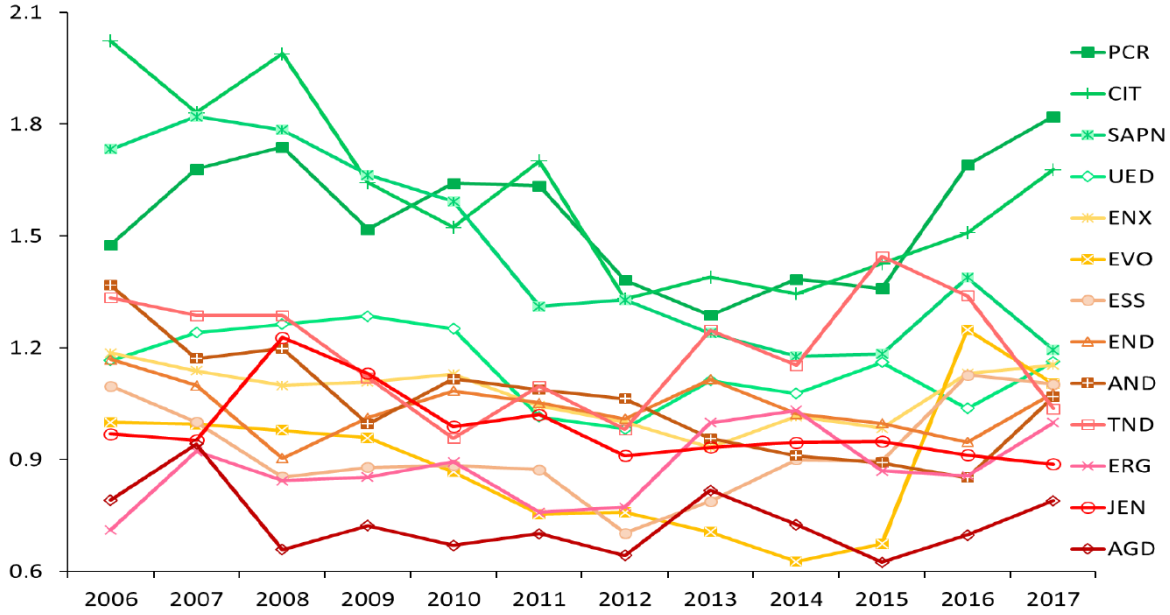


The AER benchmarking report also examines the opex and capex productivity performance of Energex and Ergon against their network cohort.

Opex performance is presented in figure A4 below.

It shows Energex maintaining a relatively steady performance in the middle of the pack, while Ergon's performance has improved from last in 2006 to slightly below Energex's performance in 2017.

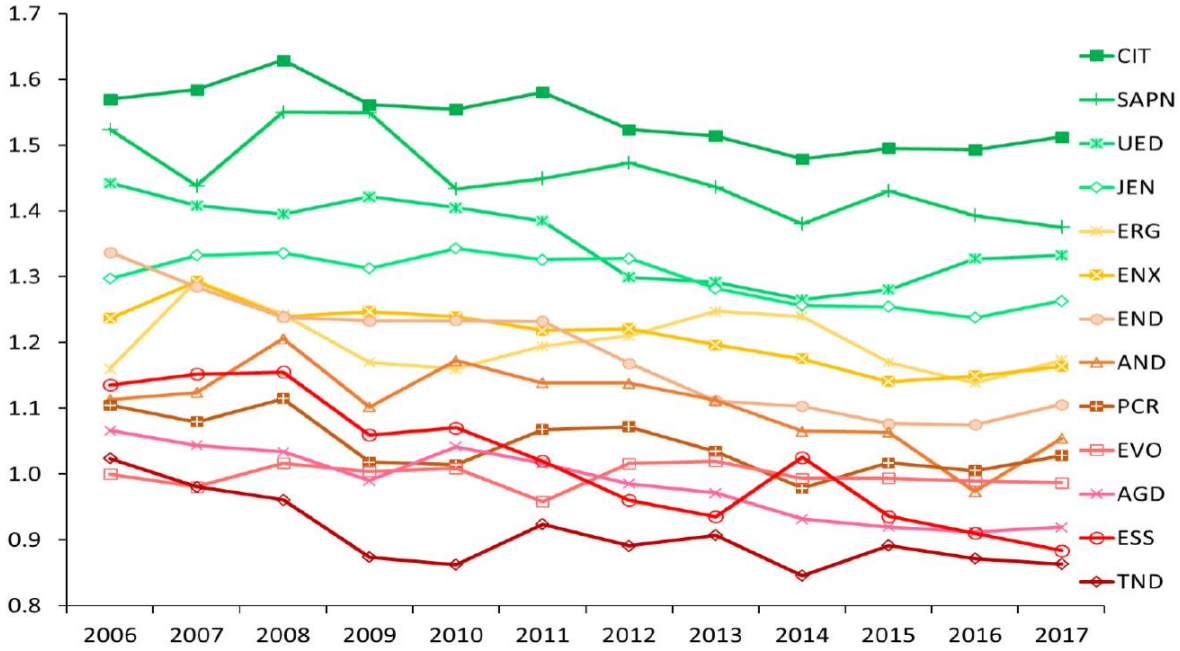
Figure A4: Distributor opex multilateral partial factor productivity indexes 2006-2017



Source: Economic Insights, AER analysis.

Figure A5 shows capex performance. Both distributors have started and finished in the middle of the pack, trending relatively flatly across the 2006 to 2017 period. Overall, figures A4 and A5 taken together would suggest that opex productivity has been improving for Ergon over 2006 to 2017 and has made a significant contribution to its overall total factor productivity improvement, while for Energex, its performance has been steady over both indicators while other distributors have declined slightly, leaving it in a relatively better position at the end of the 2006 to 2017 period than its cohort.

Figure A5: Distributor capital multilateral partial factor productivity indexes 2006-2017



Capacity utilization

The CCP has shown that the number and percentage of constrained feeders for 2017/18, 202/21 and 2024/25 is forecast to remain static across the period (figure A6 below).[lxii]

The CCP slides also show that both Energex and Ergon capacity utilization fell over the period 2006 to 2018 and remained below the average across the entire period (figure A7).[lxiii]

Figure A6: Capacity utilization

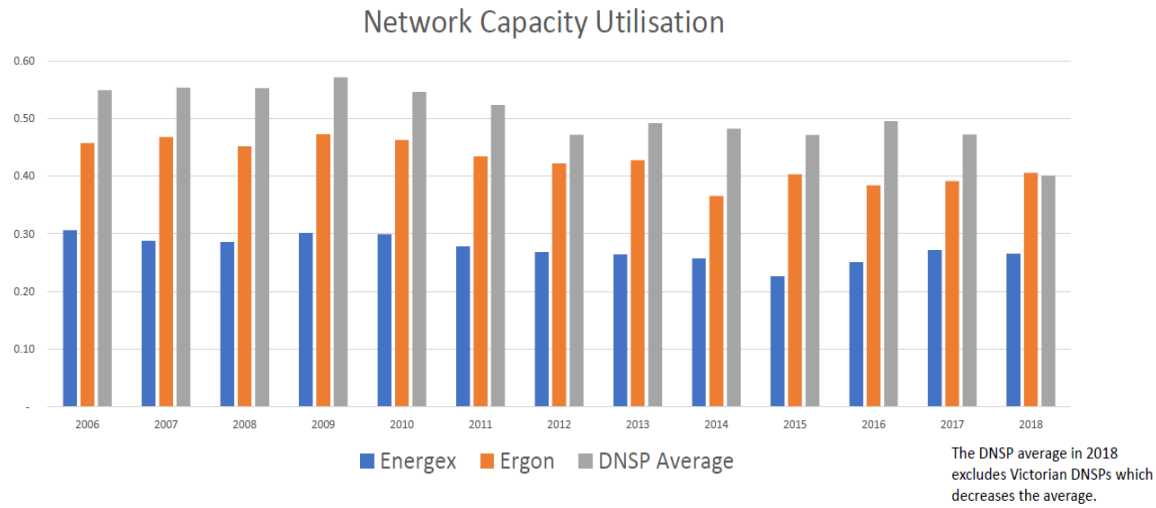


Figure A7: Constrained feeders over the period 2017 to 2025

Ergon

Region	Total Feeder Numbers (2017/18)	2017/18	2020/21	2024/25
Northern	572	24	26	23
Southern	563	51	50	49
Total	1135	75	76	72

*Capacity constraint against the Security Criteria loading (75% for Urban Feeders and 90% for all feeder categories).
**Note dedicated customer connection assets are excluded from the analysis.

Energex

Region	2017/18	2019/20	2024/25
Constrained Feeders*	53	57	53
Total Feeders	2035	2037	2078

- *Capacity constraint against the Security Criteria loading.

"Note that the number of constraints is remaining relatively constant which reflects Energex's customers expressed need to maintain and not improve network performance during the regulatory control period 2020-25." Energex 7.091 p. 12; same words in Ergon 7.092 p. 12

Partial performance indicators

It is worth examining Energex's and Ergon's performance in terms of partial performance indicators.

One measure is total cost per customer. Networks with low customer density might expect to perform worse on this indicator as they must build more line to service customers, although at the same time, it is generally cheaper to build line in rural and remote areas and more lines in rural and remote areas are single wire earth return (SWER lines) rather than three-phase lines.

Ergon performs poorly on total cost per customer at a total cost of over $1300 per customer ($2017) against under $1100 for Essential Energy and around $700 for SAPN, the other two distributors with low customer density.[lxiv]

Ergon's performance is comparatively better measured in terms of total cost per kilometre of line ($2017), where its performance places it among other distributors with low customer densities.[lxv] Ergon's performance is also comparatively better measured in terms of total cost per MW of maximum demand ($2016) where its performance is a little better than Essential Energy and close to SAPN.[lxvi]

On all these measures, Energex is around the middle of the pack.

Notably, one area where Ergon and Energex do not perform as well is average total overheads per customer against average customer density ($2017).

On this measure, Ergon is well above its peers, including other networks with low customer densities, while Energex's overhead costs are also significantly elevated.[lxvii] In calculating and reporting this measure, the AER used total overheads allocated to capex or opex to ensure that network capitalisation policies did not affect the analysis.[lxviii]

It would be worth the AER investigating and determining the cause of the high overhead costs of Ergon and Energex (particularly Ergon). The high overheads could be due to high IT costs, corporate, network, or non-network overheads.

It is noted that Energy Queensland is forecasting a 10 per cent fall in overhead costs over 2020-25.[lxix] This is a move in the right direction to tackle high overhead costs.

Overall view on Energex and Ergon benchmark performance

Overall, Energex and Ergon (particularly Ergon) seem to be improving their relative position. With forecast drops in capex and opex in the coming regulatory control period, it will be interesting to evaluate where Energex and Ergon's comparative performance may end up around the end of the 2020-25 regulatory control period.

In this context, it is interesting to examine the opex and capex forecasts for other networks for the 2020-25 or 2019-24 period.

Other networks for their 2019-24 regulatory periods are forecasting or have been awarded opex changes of:

- minus 5.5 per cent for Energex
- minus 21 per cent for Power and Water Corporation;
- minus 11.8 per cent for Ausgrid;
- minus 6.6 per cent for Essential;
- minus 2.2 per cent for Endeavour;
- plus 3.9 per cent for Evoenergy; and
- percentage change unstated but a significant rise for TasNetworks.[lxx]

SAPN is seeking a significant increase in opex in 2020-25 of 17.3 per cent.

The capex budgets and forecasts for the 2020-25 or 2019-24 regulatory periods are stated below compared to the previous regulatory control periods:[lxxi]

- minus 20 per cent for Energex;
- plus 8 per cent for Ergon;
- plus 0 per cent for SAPN;
- minus 5 per cent for Ausgrid;
- minus 6.8 per cent for Essential Energy;
- plus 10 per cent for Endeavour; and
- minus 2.8 per cent for Evoenergy.

Overall, most networks are cutting opex and capex for the forward regulatory control period. In this context, Energex and Ergon may improve their productivity indexes and hold their relative productivity positions.

Benchmarking customer outcomes

In addition to benchmarking performance, it is important to assess the cost of supply to customers. QCOSS has benchmarked the cost of delivering electricity through the distribution network to customers in terms of two measures:

- the amount of assets used per customer (or RAB/customer);
- the amount of revenue collected per customer (or revenue/customer).

QCOSS has compared these measures for Energex and Ergon against the three NSW distributors.

The results are presented in figures A8 and A9 below.

Figure A8: RAB/customer for Qld and NSW networks (mix of real $ for Qld and nominal $ for NSW)[lxxii]

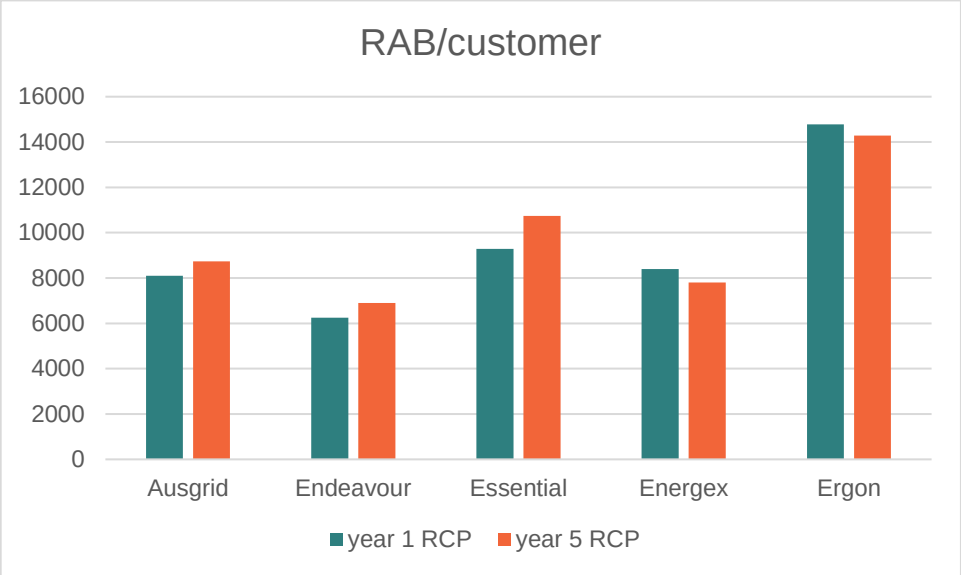


Figure A8 shows that, in terms of the cost of delivering electricity to customers, the amount of assets used by Energex is about the middle of the pack, while Ergon is significantly above the rural NSW distributor, Essential Energy. Having said that, it is true that both Energex and Ergon are improving on this measure over the regulatory control period, while the three NSW distributors are increasing their cost per customer.

Figure A9: Revenue/customer for Qld and NSW networks (mix of real $ for Qld and nominal $ for NSW)[lxxiii]

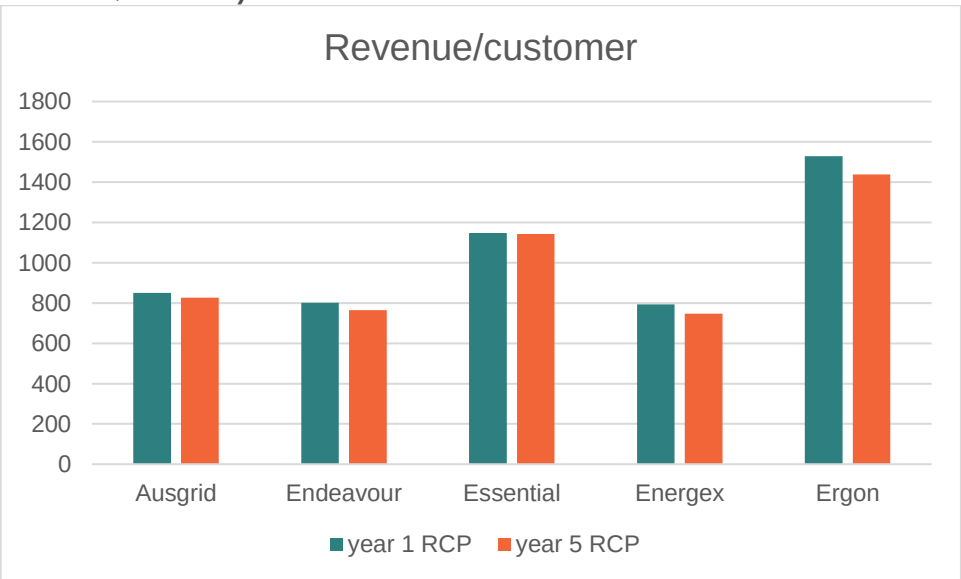


Figure A9 shows a similar picture on revenue per customer, with Energex in the middle of the pack and Ergon significantly higher than the other distributors, including the rural distributor in NSW, Essential Energy. In this case, the NSW distributors are trending sideways in terms of revenue per customer while Energex and Ergon are trending downwards.

On these measures, it is significantly more costly for Ergon to provide services than the other four distributors, including the rural NSW distributor.

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[ii] For example, see the Clean Energy Regulator December 2018 media release at http://www.cleanenergyregulator.gov.au/Infohub/Media-Centre/Pages/Media%20updates/NewsItem.aspx?ListId=19b4efbb-6f5d-4637-94c4-121c1f96fcfe&ItemId=589

[iii] Energy Queensland 2019, *An Overview: Our Regulatory Proposals 2020-25*, January, p. 33.

[iv] Energex 2019, *Energex Regulatory Proposal 2020-25*, January, p. 36.

[v] Energex 2019, *Energex Regulatory Proposal 2020-25*, January, p. 37, table 11.

[vi] Ergon 2019, *Ergon Regulatory Proposal 2020-25*, January, p. 35.

[vii] Ergon 2019, *Ergon Regulatory Proposal 2020-25*, January, p. 36, table 11.

[viii] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November.

[ix] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 5, figure 2.1.

[x] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 7, figure 2.2.

[xi] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. v, figure 3.

[xii] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, pp. 41-42, figure 5.9.

[xiii] Energy Queensland 2019, *An Overview: Our Regulatory Proposals 2020-25*, January, pp. 19, 31.

[xiv] CCP 2019, *EQ 2020-25 – AER Public Forum Consumer Challenge Panel 9 April 2019*, slide 29.

[xv] CCP 2019, *EQ 2020-25 – AER Public Forum Consumer Challenge Panel 9 April 2019*, slide 14.

[xvi] Distributor regulatory proposals and AER decisions and own analysis

[xvii] Distributor regulatory proposals and AER decisions and own analysis

[xviii] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 25.

[xix] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 38.

[xx] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, pp. 27-28.

[xxi] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, pp. 39-40.

[xxii] Energy Queensland 2018, *Our Draft Plans 2020-25*, September, p. 76, table 12.

[xxiii] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 38.

[xxiv] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 40.

[xxv] For example, Energex 2019, *Energex Regulatory Proposal 2020-25*, January, pp. 75-76.

[xxvi] Energex 2019, *Energex Regulatory Proposal 2020-25*, January, p. 77, table 32.

[xxvii] Ergon 2019, *Ergon Regulatory Proposal 2020-25*, January, p. 75, table 32.

[xxviii] Energy Queensland 2019, *An Overview: Our Regulatory Proposals 2020-25*, January, p. 39 and p. 49.

[xxix] For example, see Energex ICT Plan 2002-25 at Supporting Document 7.008, p. 15, table 4.

[xxx] Energy Queensland 2019, *An Overview: Our Regulatory Proposals 2020-25*, January, pp. 33-34.

[xxxi] Energy Queensland 2019, *An Overview: Our Regulatory Proposals 2020-25*, January, pp. 44- 45.

[xxxii] Energy Queensland 2019, *An Overview: Our Regulatory Proposals 2020-25*, January, p. 45

[xxxiii] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 31.

[xxxiv] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 32.

[xxxv] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 36.

[xxxvi] AER 2015, Final Decision, *Energex determination 2015-16 to 2019-20 Overview*, October, p. 22.

[xxxvii] Energex 2019, *Energex Regulatory Proposal 2020-25*, January, p. 94, table 36.

[xxxviii] After adjusting for indexation, regulatory depreciation is lower in 2020-25 than in 2015-20.

[xxxix] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 24.

[xl] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 36.

[xli] Ergon 2019, *Ergon Regulatory Proposal 2020-25*, January, p. 92.

[xlii] Energy Queensland 2019, An Overview: Our Regulatory Proposals 2020-25, January, p. 40.

[xliii] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 36.

[xliv] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 36.

[xlv] AER 2014, *Draft Decision, Ausgrid distribution determination 2015-16 to 2018-19, Attachment 4: Regulatory depreciation*, November, p. 9.

[xlvi] For example, Ergon 2019, *Ergon Regulatory Proposal 2020-25*, January, p. 90.

[xlvii] Allocating $147 million to Energex and $154 million to Ergon: AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 23 and p. 35.

[xlviii] AER 2019, *Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 21.

[xlix] For Energex, see AER 2015, *Final Decision: Energex Determination 2015-16 to 2019-20 Overview*, October, at pp. 36 and 37. The AER applied version 2 of the EBSS and version 1 of the CESS in the 2015-20 regulatory control period.

[l] Energy Queensland 2019, p. 41 and p. 51.

[li] Energy Queensland 2019, p. 41 and p. 51.

[lii] Energy Queensland 2019, p. 51, for Ergon with Energex citing similar reasons.

[liii] Energy Queensland 2019, p. 51, for Ergon with Energex stating a similar position.

[liv] Representatives from Uniting Care, Queensland Farmers' Federation and QCOSS presented consumers' perspectives on the RESET and TSS. Gold Coast City also presented local government perspectives.

[lv] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November.

[lvi] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 5, figure 2.1.

[lvii] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 7, figure 2.2.

[lviii] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 13, table 4.1.

[lix] Setting aside for the moment the impacts of tariff equalization in Queensland.

[lx] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. v., figure 3.

[lxi] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. v, figure 3.

[lxii] CCP 2019, *EQ 2020-25 – AER Public Forum Consumer Challenge Panel 9 April 2019*, slide 29.

[lxiii] CCP 2019, *EQ 2020-25 – AER Public Forum Consumer Challenge Panel 9 April 2019*, slide 14.

[lxiv] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, pp. 34-35, figure 5.3.

[lxv] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, pp. 35-36, figure 5.4.

[lxvi] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, pp. 36-37, figure 5.5.

[lxvii] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, pp. 41-42, figure 5.9.

[lxviii] AER 2018, *Annual Benchmarking Report: Electricity distribution network service providers*, November, p. 41.

[lxix] Energy Queensland 2019, *An Overview: Our Regulatory Proposals 2020-25*, January, pp. 19, 31.

[lxx] Refer to AER, fact sheets for various networks, and AER 2019, Issues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025, March, p. 31.

[lxxi] AER 2019, I*ssues Paper Qld electricity distribution determinations Energex and Ergon Energy 2020 to 2025*, March, p. 25, 37, SAPN 2019, 2020-25 Regulatory Proposal, January, Attachment 5, p. 28, various fact sheets.

[lxxii] Distributor regulatory proposals and AER decisions and own analysis

[lxxiii] Distributor regulatory proposals and AER decisions and own analysis