



Review of Alternative Control Services
Advice to Australian Energy Regulator

PUBLIC VERSION

A Marsden Jacob Report

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About Us

Established in 1996, Marsden Jacob Associates has grown to be Australia's leading dedicated natural resource economics, policy and strategy advisory. We employ talented economists and policy advisors who specialise in solving practical, real world problems relating to water, energy, environment, natural resources, agriculture, earth resources, public policy and transport. We work with a wide range of cross-disciplinary partner firms to deliver best project outcomes for our clients.

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1. Review of Alternative Control Services

This report presents the findings of an independent study by Marsden Jacob Associates of input costs for Alternative Control Services.

Marsden Jacob Associates (Marsden Jacob) has been engaged by the Australian Energy Regulator (AER) to undertake input cost assessment services in relation to regulatory determinations for:

- Ausgrid;
- Endeavour Energy;
- Essential Energy;
- Evoenergy (ActewAGL);
- TasNetworks; and
- Power and Water Corporation (PWC).

The assessments are to consider the reasonableness of forecast cost inputs that generate prices for Alternative Control Services (ACS) for these distribution network businesses in relation to Determination 2019-24. The scope of engagement is provided in Appendix 1.

1.1 Approach

In reviewing the proposed ACS charges, we have considered:

- proposed labour rates;
- material costs; and
- time taken to perform fixed fee and quoted services.

This approach follows a similar methodology used for our 2014-19 recommendations.

Importantly, we have considered only whether cost inputs and prices are *reasonable* and not whether they are efficient or best practice. The approach is considered appropriate for this review, which is the first such review for two of the network businesses and the second for the other four. It establishes a methodology for analysing and comparing the network businesses' ACS costs and establishes maximum prices.

For future reviews, the AER may wish to consider a more assertive approach, in which prices are moved toward the efficiency frontier. Rather than establishing prices based on reasonable costs, this approach would establish efficient costs by examining underlying drivers and considering the benchmarks set by the most efficient providers, including those outside the AER's jurisdiction.

By establishing maximum 'reasonable' prices only, the current approach may inadvertently discourage providers that are already operating below the 'reasonable' threshold from seeking further cost efficiencies. A more assertive approach would provide an incentive for inefficient businesses to continually reduce their costs toward the efficient benchmark.

One disadvantage of the more assertive approach is the need for more detailed information to ensure that material differences between the organisations and their services is taken into account when establishing efficient costs. Ideally, this information would be received in a standardised format to facilitate comparison. The AER would also need to consider whether (and how) it would be appropriate to reward efficient providers to ensure the system is not entirely punitive.

1.2 Base year

In reviewing ACS, Marsden Jacob has examined the charges or equivalent charges for 2018/19, the year prior to the regulatory period. In most cases, regulated businesses either provided estimates for this base year and extrapolated into the new regulatory period or provided estimates that could be converted to 2018/19:

- **Ausgrid** developed charges for 2018/19 and then escalated through the regulatory period using projected inflation and a labour escalation factor. The 2018/19 figures were examined.
- **Endeavour Energy** provided labour rates for 2014/15 and escalated through the two regulatory periods for inflation and a labour escalation factor to obtain the charges for each service. The 2018/19 figures were examined.
- **Essential Energy** provided proposed fees for each year of the regulatory period set in 2019/20 prices. For every service, the basis was obtained from 2018/19 estimates which were used for comparison purposes.
- **Evoenergy** developed labour and other cost estimates for each year starting 2017/18 and through the regulatory period. The inputs and fees for 2018/19 were used.
- **TasNetworks** developed real (2018/19 price) estimates of labour and other costs for each year of the regulatory period. TasNetworks also applied a smoothing algorithm for the final price. For the purposes of comparing the underlying costs, we have examined the unsmoothed inputs and fees. We have used the 2019/20 estimates set in 2018/19 prices as the basis of comparison. The nominal labour rates were deflated by the assumed inflation rate for 2019/20.
- **PWC** generated a 'real' price that was common across all regulatory years. Consequently, each year would be increased by the inflation factor. The constant fee and input cost were used for comparison purposes.

1.3 Labour rates

All Distribution Network Service Providers (DNSPs) provided underlying labour rates. The overall labour rate reflects the base cost of salaries plus on-costs and attribution of overheads. The extent of detail varied across each DNSP:

- **Ausgrid** showed separately its on-costs and overheads associated with labour.
- **Endeavour Energy** showed neither on-costs nor overheads. In almost all cases the hourly labour rate was the hourly fee rate. In a number of cases, an overhead was applied to a separate labour figure. These overhead rates aligned with rates applied in the previous determination.
- **Essential Energy** showed separately its on-costs and overheads associated with labour.
- **Evoenergy** showed overheads but not on-costs.
- **TasNetworks** showed overheads but not on-costs.

- **PWC** showed overheads but not on-costs. However, overheads were not allocated on the basis of labour inputs and were calculated separately for each service.

Marsden Jacob has reviewed each of the labour rates provided by the distribution businesses. Although the businesses use differing category names, the labour used to deliver ACS fell broadly into one of five categories - Administration, Technical Services, Engineers, Field Workers and Senior Engineers. A full translation of the DNSP rates to these five categories is provided in Appendix 2.

Using these categories, Marsden Jacob developed benchmark labour rates based on Hays 2017 *Energy* sector and *Office support* salary data against which the efficiency of proposed labour rates could be assessed. These annual salary figures are repeated in Appendix 3.

In assessing the reasonableness of labour rates, Marsden Jacob has 'normalised' the rates provided by each business, i.e. decomposed the rates into comparable subcomponents.

The 'normalised' rates are shown in 2018/19 dollars and are separated into '*raw*' labour rates (presented in section 1.3.1), *on-costs* (section 1.3.2) and *overheads* (section 1.3.3). As noted above, not all DNSPs provide sufficient information to compare all of these elements. Together the elements add to the *total* or '*all-in*' labour rate (section 1.3.4), which may be applied to calculate cost reflective prices for ACS when a 'bottom-up' approach to pricing is utilised.

Marsden Jacob have defined the scope of each cost element as:

- '*Raw*' labour costs are the most basic hourly labour rates. The value excludes all on-costs and overheads. This rate excludes basic leave allowances such as sick leave, annual leave, and public holidays and is calculated based on a 40-hour week.
- *On-costs* include:
 - Basic leave allowances (sick leave, annual leave, public holidays);
 - Superannuation;
 - Workers Compensation;
 - Payroll tax;
 - Annual leave loading; and
 - Long service leave loading.
- *Overheads* are all additional costs included in the total labour rates proposed by distribution business.

'Implied overhead rates' have been calculated by Marsden Jacob as a ratio of the total labour rates compared with the base labour rates (including on-costs). We have adopted this method rather than using the more disaggregated overhead rates proposed by businesses to ensure that the total overhead rates are directly comparable. This method avoids the need to compare sub-categories of overhead charges, which have been inconsistently defined between the businesses.

In addition, a number of businesses allocate overheads on the basis of the service provided. These may therefore reflect drivers such as service revenue or input hours, rather than being a simple add-on to input costs. In these cases, it is not possible to generate a comparable all-in labour rate for individual labour types. We have therefore focussed on comparing the all-in cost of the service and examined number of hours required to provide the service and the implied average hourly rate.

1.3.1 Raw labour rates

Marsden Jacob has proposed a maximum rate that should be applied for each labour category based on consideration of the rates applied across the businesses and a comparison against the Hays benchmark salary rates (Table 1).

The Hays annual salaries have been scaled to reflect a raw hourly rate.

Table 1: Hays hourly salary rates, ex-super, 2017

		Sydney	Darwin	Canberra
Administration	Low	\$18.75	\$21.63	\$19.23
	Average	\$28.61	\$28.85	\$30.05
	High	\$38.46	\$36.06	\$40.87
Technical specialist	Low	\$31.25	\$36.06	
	Average	\$44.47	\$54.09	
	High	\$57.69	\$72.12	
Engineer	Low	\$33.65	\$40.87	
	Average	\$52.88	\$54.09	
	High	\$72.12	\$67.31	
Field worker	Low	\$31.25	\$28.85	
	Average	\$39.66	\$44.47	
	High	\$48.08	\$60.10	
Senior Engineer	Low	\$48.08	\$48.08	
	Average	\$63.70	\$64.90	
	High	\$79.33	\$81.73	

Source: Hays 2017

Consistent with the approach in the previous review, we have taken the maximum figure for each group to represent the highest 'reasonable' rate. We have also inflated the highest figure by 8.5%, which reflects:

- estimated changes in the Consumer Price Index (notionally 2.5% per year for 2 years); plus
- Treasury's real labour forecasts of 0.25% for 2017/18 and 0.5% for 2018/19; plus
- a further (approximate mid-point) allowance of 2.5% to reflect the fact that Hays rates only increase in increments of \$5,000 and many of those used in ACS have not changed since 2014 (e.g. Sydney Line Workers have remained at \$100,000 per year).

As the Hays survey only reports Administration rates for Canberra, we have applied Sydney rates as the closest comparator for other labour categories. While Canberra has a higher proportion of professional jobs and therefore higher earnings generally, we do not consider that provides evidence that higher rates are required for the specific labour categories shown in Table 1.

The Hays survey also does not report figures for Tasmania, so we have reviewed the Average Weekly Earnings (AWE)¹ rates for Tasmania and note that they are the lowest of any capital city in Australia. While some specialist jobs can command higher rates in smaller capital cities, TasNetworks' proposed labour rates (see section 1.3.5) are lower than the maximum rates shown in Table 1 for all categories

¹ As reported by the Australian Bureau of Statistics (ABS).

other than Administration. On that basis, for Tasmanian non-administration staff we have used the lowest rate across the two reported capital cities that show Energy staff costs.² This approach is likely to result in conservatively high values, as AWE rates for the other three cities are between 12% and 22% higher than Tasmania.

Table 2 provides a summary of the 2018/19 maximum rates for each jurisdiction.

Table 2: Maximum hourly rates – ‘raw’ labour rates, inflated to \$ 2018/19

	NSW	ACT	Tas ¹	NT
Administration	\$41.72	\$44.33	\$39.12	\$39.12
Technical specialist	\$62.59	\$62.59	\$62.59	\$78.23
Engineer	\$78.23	\$78.23	\$73.02	\$73.02
Field worker	\$52.15	\$52.15	\$52.15	\$65.19
Senior engineer	\$86.05	\$86.05	\$86.05	\$88.66

1 Uses lowest rate Sydney, Canberra and Darwin for Administration staff and lower of Sydney and Darwin for Energy staff.

1.3.2 On-costs

Two types of on-costs have been added to the ‘raw’ labour rates to benchmark the total on-cost rates proposed by the distribution businesses:

- *Basic leave entitlements* including annual leave, sick leave and public holidays - the leave entitlements, once added to the raw labour rate, establish the wage rate per hour actually worked by an employee; and
- *Standard on-costs* such as superannuation, workers compensation, payroll tax, annual leave loading, and long service leave.

Table 3 provides Marsden Jacob’s recommendations in relation to total on-costs. Basic leave entitlements have been estimated on the basis of 44 weeks of actual work per year (52 weeks minus 4 weeks of annual leave, 2 weeks of sick leave and 2 weeks of public holidays).

The estimates for standard on-costs have been developed with reference to:

- the superannuation level included in the Enterprise Bargaining Agreements for each DNSP;
- an estimate of workers compensation premiums;³
- standard payroll tax rates for each jurisdiction;
- annual leave loading of 17.5% loading on 4 weeks annual leave (industry standard), which equates to 1.35% of total salary; and

—

² There are not any Energy staff rates for Canberra.

³ NSW The NSW rates have not changed since 2015 (Gazette No 47 of 5 June 2015). We have used the rate advised at the time of the previous analysis that also reflects the published rate plus loadings for claims and size.

ACT Premium rate for Electricity distribution 2017/18 [Suggested Reasonable Premium Rates for 2017/18](http://www.cmd.act.gov.au/_data/assets/pdf_file/0009/912168/Reasonable-Rates-2016-17_V2.pdf), p. 2 (note draft for discussion)

http://www.cmd.act.gov.au/_data/assets/pdf_file/0009/912168/Reasonable-Rates-2016-17_V2.pdf

Tasmania Premium rate for Electricity distribution 2017/18 WorkCover Tasmania Board (2018) *Suggested premium rates 2017/18*

https://www.workcover.tas.gov.au/_data/assets/excel_doc/0008/376865/Suggested_Premium_Rates_2017-18.xlsx Figures for 2018/19 indicate an even lower rate of 0.52%.

NT Rate for Electricity, gas and water 2016 PWC (2016) *NT WorkSafe: Actuarial review of Northern Territory workers compensation scheme as at 30 June 2016*, p. 106. <http://www.worksafe.nt.gov.au/AboutUs/Documents/workers-comp-actuarial-review-20160630.pdf>

- a conservative long service leave allowance based on three months leave for every 10 years of service, equating to 2.5% per year.

Table 3: Labour on-costs

Description	NSW	ACT	Tas	NT
<i>Basic leave entitlements</i>				
Standard leave (annual leave, sick leave, public holidays)	Rate of 18.18% assumed for all businesses			
<i>Standard on-costs</i>				
Superannuation	15%	12%	9.5%	9.5%
Workers Compensation	2.25%	3.35%	0.58%	0.69%
Payroll tax	5.45%	6.85%	6.10%	5.50%
Annual leave loading	1.35%	1.35%	1.35%	1.35%
Long Service leave allowance	2.50%	2.50%	2.50%	2.50%
<i>Total on-costs (note percentages are compounded)</i>				
Marsden Jacob proposed on-costs	52.23%	51.84%	43.46%	42.81%

Marsden Jacob draft recommendations:

Marsden Jacob recommends that the maximum on-cost applied for ancillary network services should be the rates shown in Table 3 based on a 'bottom up' estimate of each of the factors that are included in the on-cost.

1.3.3 Overheads

The overheads applied by each of the distribution businesses varied substantially both in definition and in magnitude between businesses.

In the previous review, Marsden Jacob calculated an 'implied overhead rate' for each of the businesses by taking the ratio between the total labour rate proposed by distribution businesses (including all on-costs and overheads) and the standard labour rate (including on-costs but not overheads). This approach provided a simple method of calculating directly comparable total overhead rates. For this review we have concentrated only on the total ('all-in') rate, inclusive of a maximum benchmark overhead rate, to avoid the need for assumptions regarding the breakdown of on-costs and overheads.

Three of the DNSP's provided a breakdown of overhead rates (Table 4). Endeavour did not provide any breakdown of labour rates. TasNetworks and PWC allocated overheads to individual services, so labour rates were examined on a case by case basis (see section 1.3.5). Essential's overhead rate is the product of its explicit Overhead rate, its Non-system charge and its Margin.

Table 4: DNSP proposed overhead rates

Category	Ausgrid	Endeavour	Essential	Evoenergy
Administration	50%		72.94%	61.00%
Technical specialist	59%		72.94% (105.99%)	61.00%
Engineer	69%	Not provided	72.94% (101.72%)	61.00%
Field Worker	87%		72.94% (115.69%)	61.00%
Senior Engineer	69%			61.00%

Note that Essential applies its overhead rate to a fleet allowance for Outdoor technical specialists, Engineers and Fieldworkers. The total overhead rate therefore increases for these categories (and is shown in parenthesis).

Marsden Jacob draft recommendations:

Overheads include a wide range of costs, including anything other than the direct labour cost of providing a service, including (but not limited to) supervisory and management costs, customer service and billing, communications and information technology, fleet costs, and corporate costs such as finance and planning.

We have also accepted the inclusion of an explicit profit margin. Where these are explicitly identified, however, this allocation is to be recovered – and therefore benchmarked – within the overall overhead allowance.

In our previous review a number of DNSPs provided different overhead rates for each labour category. Our recommended overhead rate of 65% was an average of a number of different rates. For this review, the process of comparison has been simplified as Essential and Evoenergy have both provided a single overhead rate across all services.

Only Ausgrid has differentiated their rate, apparently based on the recommendations from our previous review. We note that three of the five rates we had recommended previously referenced the benchmark rates set by Essential, including the most common rate, ‘Field Worker’. Essential has now applied a consistent rate of 72.94% across all labour categories. For a number of DNSPs, Field Workers activities are explicitly associated with provision of a vehicle. For the remainder, it would appear that vehicle costs are bundled within overheads. To provide consistency in comparing these rates, we have assumed a separate (conservatively high) allowance of \$20 per hour for Field Worker vehicles which is added to the Hays derived rates. We have not added an overhead allowance to this vehicle allowance.

Very little information is publicly available to benchmark the DNSPs proposed overhead rates with other industries, because this level of breakdown does not need to be provided in statutory financial reports. Self-published information and industry information published for specific purposes is often not suitable as a benchmark because of inconsistent and/or unclear definitions.

In our experience reviewing commercially confidential information in other capital intensive industries such as water and gas, overhead rates for non-retail businesses in the order of 45-65% are not unreasonable. In retail businesses, the rates can be as high as 100% of (purely) direct costs due to the higher level of customer engagement.

Based on the benchmark overhead proposed by Evoenergy, we recommend a maximum overhead rate of 61% across all labour categories, plus a \$20 per hour vehicle allowance for Field Workers.

Importantly, we note that the methodology for allocating overheads is provided in the AER’s Cost Allocation Method. Therefore, while our benchmarking considers the overheads for ACS services in isolation, capping the overhead rate may have unintended consequences for the broader Cost Allocation Method. On this basis, this recommendation should be considered preliminary until confirmed by the AER.

1.3.4 Maximum hourly rates, DNSPs with general overheads

For the four DNSPs that were evaluated in the previous review, overheads were applied at a sufficiently high level that it is possible to compare the ‘all-in’ hourly rate against Marsden Jacob’s built-up benchmark rate, i.e. Hays base rate plus standard on-costs plus benchmark overhead rate. Based on the aggregate of these elements, the maximum total (all-in) rates recommended by Marsden Jacob are shown in Table 5.

It is important to reiterate that the maximum hourly rates in Table 5 include the *highest* of the Hays salary rates for each labour category. While we consider these to be reasonable maximum rates, they are not necessarily efficient rates. In the next review, we recommend the AER consider whether it is appropriate to reduce the maximum rates to reflect more efficient benchmarks.

In the current and previous reviews, Essential included separate categories for Indoor and Outdoor technical specialists. The difference reflecting the vehicle allowance. In considering the rate for Technical specialist, we have used the calculated rate and added a vehicle allowance of \$20 for the Outdoor technical specialist consistent with the approach adopted for Field workers.

In the current review, Essential has included a separate administrative category titled Paralegal. Inspection of Hays data for *Legal Support* within *Office Support* and for *Paralegal* for *Private Practice - Top Tier* and *In-house* indicates that the maximum rates are below those already provided for Administration. We have therefore used the same rates for both types of Administration. This may suggest a need to review the rates for “general” administration.

Table 5: Maximum total hourly rates (base plus on-costs plus overheads), \$ 2018/19

	Ausgrid	Endeavour	Essential	Evoenergy
Admin	\$102.26	\$102.26	\$102.26	\$108.37
Technical Specialist	\$153.39	\$153.39	\$153.39	\$153.00
Engineer	\$191.74	\$191.74	\$191.74	\$191.25
Field worker	\$147.83	\$147.83	\$147.83	\$147.50
Senior Engineer	\$210.91	\$210.91	\$210.91	\$210.37

Note that the Field Worker rate includes an allowance for a vehicle as an additional overhead.

Table 6 summarises the all-in labour rates (including all overheads) proposed by each of the distribution businesses by category. Labour rates that are higher than our proposed maximum have been identified in red, with our recommended rate shown in brackets beneath.

In the case of Endeavour Energy, Marsden Jacob has examined rates for the year 2018/19, which have not had previously approved X-Factors applied. Application of adjustments for subsequent years through X-factors must be consistent with achieving these base year rates. Using agreed figures for 2019/20, Marsden Jacob has back cast a rate for 2018/19 as the base year. These adjusted base rates are used to determine average fee rates and total fees for service.

Table 6: DNSP proposed total hourly rate (base plus on-costs plus overheads), \$ 2018/19

	Ausgrid	Endeavour	Essential	Evoenergy
Admin	\$99.84	\$101.91	\$127.53 (\$102.26) \$174.24 (\$102.26)	\$139.68 (\$108.37)
Technical Specialist	\$160.10 (\$153.39)	\$163.41 (\$153.39)	\$178.58 (\$153.39)	\$171.30 (\$153.00)
Outdoor			\$212.71 (\$173.39)	
Engineer	\$199.01 (\$191.74)	\$203.14 (\$191.74)	\$239.25 (\$191.74)	\$182.30
Field Worker	\$150.00 (\$147.82)	\$153.10 (\$147.82)	\$172.20 ¹ (\$147.83)	\$132.60
Senior Engineer	\$236.51 (\$210.91)	\$241.40 (\$210.91)	Not provided (\$210.91)	\$229.52 (\$210.37)

Note that Essential Energy's Field Worker rate includes a vehicle allowance.

Marsden Jacob draft recommendations:

Marsden Jacob recommends that Essential Energy and Evoenergy Administration total hourly rate be reduced to \$102.26 per hour and \$108.37 per hour respectively. For Essential, this applies to both the Administration and Paralegal categories.

For Essential, Marsden Jacob recommends that the rates applied for all other categories be reduced. Marsden Jacob recommends a rate of \$153.39 for Indoor technical specialists, \$173.39 for Outdoor technical specialists, \$191.74 for Engineers and \$147.83 for Field workers.

For Evoenergy, Marsden Jacob recommends that the rate for Technical specialist (Line worker) be reduced from \$171.30 to \$153.00. Marsden Jacob recommends that the Senior Engineer rate be reduced from \$229.52 to \$210.37.

For Ausgrid, Marsden Jacob recommends that the rates applied for all non Administration categories be reduced. While Ausgrid appears to have based its rates on the previous decision and extrapolated using inflation, this has overestimated the reported increase in salaries over the same time period.

Marsden Jacob recommends a rate of \$153.39 per hour for Technical Specialist, \$191.74 per hour for Engineer, \$147.82 for Field Worker and \$210.91 per hour for Senior Engineers.

For Endeavour, Marsden Jacob recommends that the Technical Specialist rate be reduced to \$153.39, the Engineer rate reduce to \$191.74, the Field worker rate to \$147.82 and the Senior Engineer be reduced to \$210.91 per hour.

While Senior Engineers are not used by Essential in its pricing for the ACS services benchmarked in this study, we have provided maximum rates that could be applied to other services if required.

For any services not benchmarked in this report, the AER may choose to multiply the rates in Table 6 by the time taken to provide that service to arrive at a maximum price.

1.3.5 Maximum hourly rates, DNSPs with overheads allocated to individual services

Both TasNetworks and PWC have applied different levels of overhead to each service based on an alternative overhead allocation methodology. Therefore, for these DNSPs, we have compared the hourly

rates before adding overheads, and then separately compared the fee for individual services including overhead allocations (see section 1.4).

Table 7 summarises calculated maximum rates based on base plus on-costs only, and a second rate that includes the benchmark 61% overhead rate. We have used the latter when benchmarking ‘all in’ hourly rates for individual services in section 1.4.

It is important to reiterate that the maximum hourly rates in Table 7 include the *highest* of the Hays salary rates for each labour category. While we consider these to be reasonable maximum rates, they are not necessarily efficient rates. In the next review, we recommend the AER consider whether it is appropriate to reduce the maximum rates to reflect more efficient benchmarks.

Table 7: Maximum rates – base plus on-costs, \$ 2018/19

	Excluding overheads		Including 61% overheads	
	Tas Networks	PWC	Tas Networks	PWC
Admin	\$56.12	\$55.86	\$90.36	\$89.94
Technical Specialist	\$89.79	\$111.72	\$144.56	\$179.87
Engineer	\$104.75	\$104.27	\$168.65	\$167.88
Field worker	\$74.81	\$93.10	\$140.45	\$169.89
Senior Engineer	\$123.45	\$126.62	\$198.75	\$203.86

Note, Field Worker rate includes an allowance for a vehicle as an additional overhead

Table 8 shows the base plus on-cost labour rates (excluding overheads, which vary by service) proposed by TasNetworks and PWC. Labour rates that are higher than our proposed maximum have been identified in red.

In determining fee based services, PWC solely uses Technicians and Administrative staff. For quoted services, PWC also includes Engineering labour charges.

Table 8: DNSP proposed rates - base plus on-costs, excluding overheads, \$ 2018/19

	Tas Networks	PWC
Admin	\$69.88 (\$56.12)	\$60.17 (\$55.86)
Technical Specialist	\$63.95	\$91.59
Engineer		\$107.40 (\$104.27)
Field worker	\$60.53 ¹	
Senior Engineer		

1 Excludes vehicle allowance

Marsden Jacob draft recommendations:

Marsden Jacob recommend that TasNetworks’ and PWC’s Administration base plus on-cost rate be reduced to \$56.12 and \$55.86 per hour respectively, in line with our maximum benchmarked rates.

Marsden Jacob recommends that PWC's Engineering base plus on-cost rate be reduced to \$104.27 per hour, in line with our maximum benchmark.

For any services not benchmarked in this report, the AER may choose to multiply the maximum rates in Table 7 (inclusive of overheads) by the time taken to provide that service to arrive at a maximum price.

1.3.6 Overtime rates

This analysis has focussed on normal time rates. The DNSPs also provide after hours services which are based on an overtime rate. All above on-costs and overheads would still apply to these rates. We consider that without specific evidence on the split of after hours work, that the average overtime rate would lie between the main categories of time and a half and double time.

In the Electricity supply sector, *Average weekly total hours paid for* (38.6 hours) exceeded *Average ordinary time hours paid for* (36.8 hours) by less than 2 hours in 2016.⁴ As this is less than the minimum daily time typically required before double time applies, it is likely that most overtime incurs time and half.

For the purposes of this analysis, a simple average suggests the average overtime rate would not exceed 1.75 times the standard rate.

1.4 Benchmarked services

Marsden Jacob reviewed the proposed charges for a number of ACS services. In the previous report some 10 services were broadly common across the four reviewed distribution businesses and were reviewed. In the current report, the number of common services across the six businesses reviewed is fewer. As a result, we looked at a broader range of services to ensure that the analysis covered the majority of expected revenues for the businesses.

We retained the services used from the previous analysis to maintain continuity and because they remain significant revenue sources for these businesses. For the DNSPs newly included, we sought to include those services that accounted for the overwhelming majority of revenue. In general, we have included services that individually accounted for at least 3% of revenue or where a common calculation base was used that meant it represented a number of services. The services examined were:

- Special meter read;
- Meter testing;
- Supply of conveyancing information;
- Off-peak conversion;
- Disconnection site visit;
- Disconnection at pole top/pillar box;
- Reconnections;
- Access permits;
- De-activation – credit issue;
- Change meter;
- Underground service charge (greenfields);

⁴ *Employee earnings and hours, Australia, May 2016* (ABS Cat No 6306.0)

- Overhead service charge (greenfields); and
- Penalty charges.

The list of services included and how they aligned with each other is shown in Appendix 4.

In developing cost forecasts for these services, the distribution businesses made use of a number of approaches, which can be largely categorised as either:

- *Top-down* where the costs associated with running a particular department or unit responsible for providing the service (as well as other services) was estimated, and then the costs associated with the individual service were proportioned based on historic estimates, time data or volume data to deduce the total cost per unit for the service;
- *Bottom-up* where a labour rate cost and a time estimate were multiplied to deduce the direct cost of providing the services and overhead rates were applied to cover estimated indirect costs; or
- *Combined approach* incorporating both top-down and bottom-up elements dependent on the type of data available to the businesses.

Given the disparity in the approaches to labour rates, Marsden Jacob has focussed on the three key measures:

- the time the DNSP has estimated it takes to perform the service;
- the average all-in average rate for that service; and
- the total fee.

In the case of Evoenergy, Marsden Jacob has examined the cost reflective charges and not examined actual charges separately. Evoenergy intends to move towards these cost reflective prices over the course of this regulatory period. Marsden Jacob considers the cost-reflective charges to be the upper limit for any year's actual charge to customers.

The following tables summarise this benchmarking exercise undertaken by Marsden Jacob.

Where the total all-in rates and / or time taken proposed (or implied) by the distribution businesses is higher than Marsden Jacob's estimates, these rates appear in the table in red, with analysis and recommendations immediately following the table.

Items in blue font are charged using a single rate by the DNSP. Where we have recommended changes to these charges, we recognise that either the whole group would need to be changed or the DNSP would need to disaggregate the charges.

Table 9: Number of hours to perform service (recommended rates shown in brackets)

Service	Ausgrid	Endeavour Energy	Essential Energy	Evoenergy	TasNetworks	PWC
Special Meter read	0.07	0.25	Not provided (0.25)	0.25	0.30	[redacted]
Meter test (business hours)	3.00	3.00	3.40	2.00	2.03	[redacted]
Supply of conveyancing information (desk inquiry)		0.67 (0.50)	0.50		0.42	
Off-peak conversion	1.48 (1.00)	0.83	0.62			
Disconnection site visit	0.50			0.50	0.30	
Disconnection at meter box		1.00 (0.50)		0.50	0.30	
Disconnection at pole top / pillar box	2.77 (1.75)	1.00	1.75	0.50	1.67	
Reconnections				0.50	0.30	
Access permits	8.00	15.06	17.25			
De-activation - credit issue				1.00	0.93	
Change meter	1.67	1.00			1.67	[redacted]
Underground service change				4.50 (no change)	1.31	
Overhead service change				4.00 (no change)	2.67	
Penalty charges	0.71		0.90	1.00		[redacted]

Marsden Jacob draft recommendations:

In reviewing the time taken, we considered which DNSPs were outliers, with times greater than 30% of the next highest provider(s). The choice of a 30% threshold was based on professional judgement, providing a balance between the natural variation in times between jurisdictions and variations we considered excessive.

Our recommendations are detailed below.

Supply of conveyancing information (desk inquiry): Based on the benchmark time taken by Essential (0.5 hours) and TasNetworks (0.42 hours), reduce the time taken for Endeavour to 0.5 hours.

Off-peak conversion: Based on benchmark time taken by Essential (0.62 hours) and Endeavour (0.83 hours), reduce the time taken for Ausgrid to 1 hour.

Disconnection at meter box: Based on maximum time taken by other DNSPs, reduce the time taken for Endeavour to 0.50 hours.

Disconnection at pole top/pillar box: Based on the benchmark time taken by other DNSPs, reduce the time taken for Ausgrid to 1.75 hours.

Disconnection services for Evoenergy are undertaken by Line workers (Technical specialists) while other DNSPs can use Field workers, albeit for longer times. We have retained the use of the Line worker but note the difference approaches.

Access permits: While Ausgrid’s time appears substantially lower than other DNSPs, Ausgrid uses a fixed fee for simple access permits and an hourly rate for more complex permits, skewing the time downward. Therefore, despite the apparently significant differences, we do not recommend any change in the times taken for Endeavour or Essential.

Underground and Overhead service charges: While the times taken by Evoenergy appear high compared to TasNetworks, the fact that there is only one comparator is not adequate for benchmarking and therefore we do not recommend any change.

Table 10: Average total rate per hour (including overheads, contract payments, etc)

Service	Ausgrid	Endeavour Energy	Essential Energy	Evoenergy	Tas Networks	PWC
Special Meter read	\$150.00 (\$147.82)	\$150.00 (\$147.82)	Not provided (\$147.83)	\$139.68 (\$132.60)	\$254.07 (\$140.45)	[redacted]
Meter test (business hours)	\$150.00 (\$147.82)	\$150.00 (\$147.82)	\$212.71 (\$147.83)	\$171.30 (\$153.00)	\$124.53	[redacted]
Supply of conveyancing information (desk inquiry)		\$101.91	\$127.54 (\$102.26)		\$110.83 (\$90.36)	
Off-peak conversion	\$150.00 (\$147.82)	\$150.00 (\$147.82)	\$172.21 (\$147.83)			
Disconnection site visit	\$150.00 (\$147.82)	\$61.68		\$171.30 (\$153.00)	\$254.07 (\$140.45)	
Disconnection at meter box		\$185.75 (\$147.82)		\$171.30 (\$153.00)	\$254.07 (\$140.45)	
Disconnection at pole top / pillar box	\$150.00 (\$147.82)	\$213.84 (\$147.82)	\$177.08 (\$147.83)	\$171.30 (\$153.00)	\$141.97 (\$140.45)	
Reconnections		\$61.68		\$171.30 (\$153.00)	\$254.07 (\$140.45)	
Access permits	\$160.10 (\$153.39)	\$177.01 (\$151.66)	\$167.86 (\$147.47)			
De-activation - credit issue				\$171.30 (\$153.00)	\$153.18 (\$140.45)	
Change meter	\$144.69 (\$142.94)	\$150.00 (\$147.82)			\$141.97 (\$140.45)	[redacted]
Underground service change				\$158.40	\$168.05	
Overhead service change				\$173.15	\$146.29	
Penalty charges	\$150.00 (\$147.82)		\$175.99 (\$147.83)	\$171.30 (\$153.00)		[redacted]

* See comment below

Marsden Jacob draft recommendations:

In reviewing the average rate per hour, we have considered our recommendations from sections 1.3, in addition to reviewing outlier rates for individual services.

For Ausgrid, we have recommended a lower maximum Field Worker rate, which is commonly applied and appears throughout Table 10 as a reduction from \$150.00 to \$147.82.

In addition, the across the board reductions for Essential from Table 6 flow through to these figures. In this case, reduced Administration (from \$127.53 to \$102.26), Outdoor Technical specialist (from \$212.71 to \$173.39) and Field worker rates (from \$172.20 to \$147.83) are applied. The rate for *Access permits* is the weighted average of the three elements.

Reductions in the rate for Field Workers for Ausgrid flows through to *Off-peak Conversion, Disconnection Site visit, Disconnection at pole top / pillar box, Change meter* and *Penalty charges*. Reductions in the rate for Technical Specialists for Evoenergy flows through to *Meter testing, Off-peak Conversion, Disconnection Site visit, Disconnection at meter box, Disconnection at pole top / pillar box, Reconnections, Deactivation – credit issue* and *Penalty charges*. The allocation of Field workers to *Special meter reads* also drops the rate for Evoenergy. Our other recommendations are detailed below.

Special meter read: Evoenergy and TasNetworks' hourly rates are higher than other DNSPs based on two different driving factors. Evoenergy includes a contractor payment which does not appear to have had the effect of reducing the overall cost. If the contractor adds the same amount of time as the internal input, then the time input would be excessive. We note that Essential Energy solely uses a contractor but its cost is well below that for Evoenergy. We have included a rate for Essential for comparison purposes only. In the case of TasNetworks, the methodology used for allocating overheads results in overheads representing another 255% on top of direct costs (labour plus vehicle). As Ausgrid and Endeavour have applied the Field Worker category for this service, we have applied the same category in recommending maximum hourly rates for Evoenergy (\$132.60) and TasNetworks (\$140.45).

Meter test: Essential Energy and Evoenergy both use hourly rates significantly higher than their peers for meter testing. Both Evoenergy and Essential Energy have used a category equivalent to our 'Technical Specialist' for meter tests. By comparison, several other DNSPs have used a category equivalent to our 'Field Worker'. Accordingly, we recommend applying the 'Field Worker' category for Essential Energy (\$147.83); however as Evoenergy uses significantly less time we have retained the (higher) Technician rate (\$153.00) as well.

Supply of conveyance information (desk inquiry): Like Endeavour, Essential and TasNetworks have applied an Administration category for 'Supply of conveyance information (desk inquiry)'. Our maximum administration rate for Essential is \$102.26 and for TasNetworks is \$90.36 (see section 1.3.4) and we recommend reducing the hourly rate accordingly.

Off-peak conversion, Penalty rates: Like other DNSP's Essential Energy has proposed using a Field Worker for Off-peak conversions and Penalty rates. For these services, we recommend reducing the hourly rate for Essential to align with our maximum proposed hourly rate for a Field Worker (\$147.83).

Reduction in the rate for Field worker flows through into the average rates for *Special Meter read, Meter test (business hours), Off-peak conversion, Disconnection at meter box, Disconnection at pole top / pillar box* and *Change meter*. The lower rate for Field workers and Technical Specialists flows into a lower recommended rate for *Access permits*.

Endeavour applies a unique labour rate for *Disconnections – meter box* and for *Disconnections pole top*. In the first, it uses a unique rate and applies a 65% overhead rate. In the second, it uses a raw Field worker rate and applies an 85% overhead rate. We have applied the Endeavour Field worker rate from Table 6 which is the same approach used in other DNSPs for this service.

It is not possible to determine for Endeavour Energy if the labour cost for *Disconnection Site visit* and *Reconnections* is appropriate as there is no indication of whom it comprises. It is not, however, out of line with other DNSP total fee rates.

Disconnection site visit, Disconnection at meter box, Disconnection at pole top/pillar box, Reconnections: TasNetworks' hourly rate for these services is significantly higher than other providers due to the method of overhead allocation. We recommend these rates be reduced to reflect our maximum base plus on-cost rate, plus our recommended maximum of 61% overheads. Furthermore, TasNetworks alone has proposed to use the rate associated with a Technical Specialist for these jobs. We have applied the Field Worker category (\$140.45) to align with several other DNSPs.

Access permits: Ausgrid has proposed solely using a Technical Specialist for Access Permits. We recommend reducing the hourly rate for Ausgrid to align with our maximum proposed hourly rate for a Technical Specialist (\$153.39).

Table 11: Total fees

Service	Ausgrid	Endeavour Energy	Essential Energy	Evoenergy	Tas Networks	PWC
Special Meter read	\$10.87	\$37.50 (\$36.96)	\$16.46	\$42.83 (\$33.15)	\$76.22 (\$42.14)	\$28.38
Meter test (business hours)	\$450.00 (\$443.47)	\$450.01 (\$443.47)	\$723.21 (\$505.62)	\$342.61 (\$306.00)	\$253.16	\$238.67
Supply of conveyancing information (desk inquiry)		\$66.45 (\$50.96)	\$63.77 (\$51.13)		\$46.18	
Off-peak conversion	\$222.57 (\$147.82)	\$125.00 \$123.19	\$106.77			
Disconnection site visit	\$75.00 (\$73.91)	\$61.68	\$37.30	\$85.65 (\$76.50)	\$76.22 (\$70.23)	\$70.02
Disconnection at meter box		\$185.75 (\$73.91)		\$85.65 (\$76.50)	\$76.22 (\$70.23)	\$70.02
Disconnection at pole top / pillar box	\$415.58 (\$258.69)	\$213.84 (\$147.82)	\$309.89 (\$258.70)	\$85.65 (\$76.50)	\$236.62 (\$234.55)	\$70.02
Reconnections		\$61.68	\$45.43	\$85.65 (\$76.50)	\$76.22 (\$70.23)	\$70.02
Access permits	\$1,280.82 (\$1,227.12)	\$2,665.74 (\$2,284.07)	\$2,895.50 (\$2,543.82)			
De-activation - credit issue			\$51.26	\$171.30 (\$153.00)	\$142.97 (\$130.62)	
Change meter	\$241.64 (\$238.71)	\$170.88 ¹ (\$167.82)			\$236.62 (\$234.55)	\$431.17 ²
Underground service change ¹				\$712.82	\$220.15	
Overhead service change ¹				\$723.34	\$511.73	
Penalty charges	\$107.17 (\$105.62)		\$158.39 (\$133.05)	\$171.30 (\$153.00)		\$123.46

1 Includes materials

2 This is the weighted average for *Exchange or replace meter – three phase* and *Exchange or replace meter – standard*

Marsden Jacob draft recommendations:

Our draft recommendations for each ACS charge, based on the two previous tables, is shown in Table 11. Charges shown in brackets are our recommended changes from the DSNP's proposed charges.

Items in **green** font are charges that would have been higher if we applied the recommendations from the previous two tables, but which we have left unchanged because the combination of time taken and hourly rate is less than other DNSPs, indicating a more efficient use of resources (i.e. the extra time taken is more than compensated by the lower hourly rate or vice versa).

In the case of TasNetworks, the **green** font reflects our recommendation for a lower hourly rate, but allows a higher time taken (0.5 hours rather than 0.3 hours) to reflect the higher benchmark time taken by other providers. TasNetworks currently charge a single fee for all site visits without appointment, including special meter reads, disconnections and reconnections. We have not recommended a change in time for special meter reads as TasNetworks' proposed time is more closely aligned with other DNSPs for this service. We recognise that our recommendation implies that TasNetworks would need to either disaggregate the service (as all other providers have done) or charge the whole group at the lower rate.

As the rates in Table 11 were derived by multiplying the recommended labour hourly rate by the time taken from the previous tables, they can be applied to the benchmark services without further adjustment.

2. Public lighting and metering inputs

In addition to analysis of the labour costs and fees for ACS, the AER requested Marsden Jacob assist in evaluating input costs for public lighting and metering.

While metering and public lighting services are part of the ACS, pricing follows a building block approach. Review of the models is not within this analysis, which focusses on the key input costs.

For public lighting, the key material input costs comprise:

- the lamp, which may comprise a number of globes defined by wattage and type (LED, Sodium Vapour, etc);
- a luminaire;
- a bracket; and
- the pole.

Typically, there are standard globes and fittings for major versus minor lighting areas for each provider. However, reflecting historical factors there may be a large number of different types of light used even by a single provider. For this analysis, we have focussed on the main types of luminaire.

Note that in general, the actual lamps are included as operating expenses and part of the maintenance cycle.

Information was provided by the four DNSPs providing public lighting. This allowed both comparison across the providers as well as with external sources.

2.1 Meter costs

In the case of metering, only PWC provided identifiable inputs for bottom-up modelling of its metering charges. We have examined these charges and compared with publicly available rates for the same or similar equipment.

PWC undertook a cost benefit analysis of proposed new and replacement smart meters. The key input capital costs considered in the CBA are outlined in Table 12.

Table 12: Input meter costs for PWC CBA

Meter Type	Phase Type	Model	Supplier	Meter Unit Cost (Real \$2018) \$/unit
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

would expect PWC to obtain both wholesale prices for these meters and in most cases, a volume discount reflecting the need to supply a major roll-out of meters.

Analysis of the relationship between retail and wholesale costs in Australian retailing⁵ suggests that the landed cost of imported goods (and ex factory cost of domestic goods) averaged around 52% of final cost of retail goods. Within the 48% of final cost that represents the mark-up between the cost of goods and the retail price, some 16% comes from wholesaler costs and margins with the remaining 32% from retailer costs and margins. This suggests that on average, avoiding retailer costs and margins saves some 32% off the retail price. We have applied this indicative rate to retail prices of meters where available.

Where we have export prices for a meter, we have adjusted these to reflect both international shipping and local delivery costs. International freight reflects the cost container cost between country of export and Darwin. We have also used the wholesale costs and margins ratio as a proxy for the local cost of delivering to the DNSP.

For comparison purposes, we obtained prices for:

- the [redacted] single phase advanced capable meters;
- the [redacted] single phase advanced meter; and
- [redacted] three phase advanced meter.

The maximum recommended rates appear in the far right-hand column in Table 13. Market rate data used to inform maximum recommended rates was sourced from online advertised prices. Market rate prices listed in Table 13 take into consideration volume discounts which would reasonably be expected to apply to meter hardware purchases made by network businesses.⁶

Table 13: Meter hardware costs (current prices)

	PWC proposed	Range ¹	Maximum recommended
[redacted]	[redacted]	\$262 (retail)	\$178.00
[redacted]	[redacted]	\$120.27-\$138.06 ² (2016) \$220 (delivered) (2018)	\$220.00
[redacted]	[redacted]	\$824.00 (retail) ³	\$560
[redacted]	[redacted]		
[redacted]	[redacted]		

1 At factory prices for Chinese single and three phase smart meters can be as low as \$US20 and \$US50 respectively without communications capability. It is not clear if the quality is proportional to the price.

2 Export price from India 2016 sourced from Zaubacorp.com. Converted using AUD Rupee exchange rate at October 2016. Shipping of meters assumed to cost \$20/meter plus 16/(51+16) for local delivery costs. Inflated by 2.5% pa.

3 Note the [redacted] which is only advanced capable retails for \$482

⁵ D'Arcy, P., Norman, D and S. Shan (2012) "Costs and margins in the Retail Supply Chain", *Reserve Bank Bulletin*, June quarter, pp. 13-22

⁶ It is expected that bulk purchases of single phase and three phase meters directly through the wholesale provider would receive a discount from retail of at least 50 per cent.

Marsden Jacob draft recommendations:

As no meter hardware costs proposed by PWC were higher than our proposed maximum, Marsden Jacob recommends that metering hardware costs should be accepted in each case.

Marsden Jacob accepts that the delivered price for [redacted] meters is unlikely to be significantly below the price charged by PWC.

2.2 Public lighting comparisons

Information was provided by the four DNSPs providing public lighting on their input costs:

- **Ausgrid** provided 2018 and 2019 materials prices for developing annuity estimates for its PTRM for public lighting.
- **Endeavour Energy** provided nominal 2019 input costs for public lighting elements.
- **Essential Energy** shows a bottom-up estimate for the cost of each type of luminaire, bracket and pole (where separate). Except by lamp type, there are no estimates of the volumes associated with each item. We note that the top 5 accounted for 90% of the count of lamps.
- **TasNetworks** provides a bottom-up estimate for each lamp type to develop an unsmoothed price. This was then transformed into a smoothed price. As with ACS in section 1, we have focussed on the unsmoothed input figures.

2.2.1 Price of luminaires

Previous analysis of the number of lights used in NSW, the likely replacement policy in terms of phasing out of inefficient lights and commonalities across the DNSPs suggests that the following is likely to comprise the major component of future luminaire replacement and installation:

- residential – LED 22W and FLU0350-ST-1620
- residential – 70W MBI
- intermediate – 100W MBI
- low volume roads – 150W SON
- medium volume roads – 250W SON
- high volume roads – 400W SON

However, examination of the proposed charges for each DNSP did not align with these prospective roll-outs. As a result, we have identified the following luminaires as indicative (Table 14).

Table 14: Main luminaires by DNSP

Ausgrid	Endeavour Energy	Essential Energy	TasNetworks
22W LED	14W Energy Efficient Fluoro		14W LED
29W LED	24W Energy efficient fluoro		
42W CFL	42W CFL	42W CFL	42W CFL
150W SON	150W SV	150W HPS	150W SV
250W SON	250W Sodium	250W HPS	250W SV
400W SON	400W SON	400W SON	400W SV

Table 15: Luminaire hardware costs (current prices)

	Ausgrid	Endeavour Energy	Essential Energy	TasNetworks
14W LED		[redacted]		\$270.50
22W LED	\$225.00			
24W LED		[redacted]		
29W LED	\$287.00			
42W CFL	\$188.11	[redacted]	[redacted]	\$188.91
150W SON	\$263.36	[redacted]	[redacted]	\$216.87
250W SON	\$263.36	[redacted]	[redacted]	\$232.00
400W SV	\$306.51	[redacted]	[redacted]	\$308.13

In all cases, there are no outliers in terms of the prices charged by DNSPs. Marsden Jacob was unable to obtain independent estimates of luminaire prices.

Marsden Jacob draft recommendations:

Marsden Jacob recommends that AER accepts the input prices for the luminaires.

2.2.2 Overheads

An examination of the DNSPs annuity models indicates that TasNetworks’ has applied a substantial overhead to public lighting costs. As an example, we have replicated TasNetworks cost build-up for 14W LED luminaires in Table 16. With ‘unsmoothed’ prices, 14W LEDs would generate \$0.55m of TasNetworks’ \$1.175m Private contract lights revenue and \$3.426m of \$8.475m public road lights revenue.

Table 16: TasNetworks annuity per light, 14W LED

	Private contract lights	Public road lights
Lamp UNIT price Annualised Cost	\$-	\$-
PE Cell UNIT price Annualised Cost	\$0.85	\$0.85
Corp capex annuity per light	\$20.29	\$20.29
Lamp Service costs Annualised	\$-	\$-
PE Cell Service costs Annualised	\$6.03	\$6.03
Indirect Opex	\$11.80	\$22.56
Indirect Capex	\$-	\$-
Opex Overheads Costs per light	\$46.87	\$85.85
Bracket UNIT price	NA	\$4.33
CAPEX Instalation costs	NA	\$-
Luminaire UNIT price	NA	\$19.31
CAPEX Instalation costs	NA	\$19.13
	\$85.83	\$178.35

Source: TasNetworks Public Lighting Annuity Model

The two explicit overhead components 'Corp capex annuity' and 'Opex overheads' together comprise the majority of the underlying cost of the public lighting annuity. In the case of 14W LED lights, these overhead items represent a mark-up of 360% (private contract lights) and 147% (public road lights) on top of direct and indirect costs.

While indirect operating and capital costs could also be considered an overhead, they include items that are more directly related to the service than traditional overheads, such as cable inspection, monitoring and removal of redundant switchware. We consider it reasonable that TasNetworks includes these costs separately from overheads.

With regard to the 'Corp capex annuity' and 'Opex overheads', TasNetworks' proposed overhead allocations are substantially higher than we would consider reasonable.

For a maximum reasonable rate, we refer to the AER's decision for Victoria. Based on a benchmark analysis of Victorian DNSPs, in which overheads ranged from 7 to 25 per cent, the AER allowed a maximum operating overhead of 25 per cent.⁷ There is no public lighting capital overhead allowed for Victorian DNSPs.

Marsden Jacob draft recommendations:

Marsden Jacob recommends that consistent with the Victorian decision, that overheads for public lighting be capped at 25 per cent of the direct and indirect operating cost.

Alternatively, if TasNetworks would like to distribute overheads across both capital and operating, the combined total should not exceed 25 per cent of operating costs only.

⁷ AER, 2011-15 Victorian Electricity Distribution, Draft Decision, pp. 799-800.

Appendix 1 Scope of engagement

Broadly the requirement of the services is to:

- provide input cost assessment services in relation to regulatory determinations for Ausgrid, Endeavour Energy, Essential Energy, Evoenergy (ActewAGL), TasNetworks and Power and Water Corporation (NT).

Specifically, the AER will require the consultant to:

- Assist AER staff to evaluate the reasonableness of forecast cost inputs that generate revenues/prices for alternative control services. This includes:
 - o proposed labour rates;
 - o materials costs; and
 - o the times taken to perform fixed fee and quoted services.
- Assist in evaluating input costs for public lighting and metering services.
- Provide written report on findings.

Appendix 2 DNSP labour categories

Table 17: DNSP and Marsden Jacob labour categories

	Ausgrid	Endeavour Energy	Essential Energy	Evoenergy	TasNetworks	PWC
Admin	Admin support	Admin	Administration Para legal	Office support service delivery	Market support officer	Admin
Technician	Technical specialist	Technical	Indoor technical officer Outdoor technical officer	Line worker	Elec technician	Technical
Engineer	Engineer	Engineer	Professional			
Field worker	Field worker	Field worker	Field worker	Trade assistant / labour	Linesman	
Senior engineer	Senior engineer	Senior engineer		Senior engineer		

Note that Endeavour Energy also provided rates for another 13 labour types that included blended rates and pre-overhead labour rates (the “R” set of inputs)

- Traffic Controllers & Supervisors - External Contractors
- Operations Manager
- Engineering Officer / Project Manager
- EFM
- All staff involved in disconnections / reconnections (Meter Box)
- All staff involved in disconnections / reconnections (Site Visit)
- All staff involved in disconnections / reconnections (Meter Box)
- R4 - Field Worker
- R1 - Admin
- R2 - Technical Specialist
- R3 - Engineer
- R4 - Field Worker
- Blended (69% R2 Tech & 31% R4 Field Worker)

Appendix 3 Summary of Hays labour rates

Table 18 shows the job descriptions included against each labour category from the Hays 2017 report. The table also shows the rates used. Since the previous report, Hays has included a number of separate descriptions for Manager. As these are included under direct supervision and overheads, these are excluded from the analysis. For the same reason, OHS Manager has been removed.

Following the table, we provide an example of how these translate into the overhead included rates.

Table 18: Hays categories included in analysis

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
ENERGY SECTOR										
Engineer	T&DG	Design engineer	Low	70	75	80	75	80	85	0
Engineer	T&DG	Design engineer	High	90	100	100	100	100	115	0
Senior engineer	T&DG	Senior design engineer	Low	100	100	100	100	100	115	0
Senior engineer	T&DG	Senior design engineer	High	120	130	140	135	130	150	0
Senior engineer	T&DG	Principal design engineer	Low	130	130	140	140	135	120	0
Senior engineer	T&DG	Principal design engineer	High	165	150	180	170	155	170	0
	T&DG	Engineering manager	Low	160	130	150	160	150	145	0
	T&DG	Engineering manager	High	200	160	190	200	185	190	0
	T&DG	Design manager	Low	130	110	110	130	130	130	0
	T&DG	Design manager	High	150	160	160	160	155	170	0

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
	T&DG	Design drafter	Low	50	50	60	65	55	65	0
	T&DG	Design drafter	High	80	80	80	85	75	85	0
	T&DG	Senior design drafter	Low	70	70	80	85	75	80	0
	T&DG	Senior design drafter	High	100	90	100	100	95	110	0
Engineer	T&DG	Project engineer (EPCM)	Low	80	90	90	100	80	115	0
Engineer	T&DG	Project engineer (EPCM)	High	115	130	140	125	115	140	0
Senior engineer	T&DG	Senior project engineer (EPCM)	Low	130	130	140	125	125	125	0
Senior engineer	T&DG	Senior project engineer (EPCM)	High	150	175	190	160	150	170	0
Engineer	T&DG	Power systems engineer	Low	80	70	80	90	85	95	0
Engineer	T&DG	Power systems engineer	High	120	120	110	130	115	140	0
Engineer	T&DG	Protection engineer	Low	75	75	110	100	85	100	0
Engineer	T&DG	Protection engineer	High	110	125	150	120	125	130	0
Engineer	T&DG	Transmission line design engineer	Low	110	100	80	95	90	90	0
Engineer	T&DG	Transmission line design engineer	High	150	125	150	145	130	140	0
	T&DG	Project manager	Low	120	100	120	120	120	135	0
	T&DG	Project manager	High	160	140	160	160	150	180	0
	REN	Wind farm engineer	Low	95	95	95	100	100	-	0
	REN	Wind farm engineer	High	135	130	125	130	130	-	0
	REN	Solar engineer	Low	80	95	75	100	100	105	0
	REN	Solar engineer	High	125	120	115	120	120	125	0
	REN	Geothermal engineer	Low	80	80	90	100	90	95	0

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
	REN	Geothermal engineer	High	110	110	135	130	120	125	0
Technical specialist	REN	Technician	Low	65	65	65	80	70	75	0
Technical specialist	REN	Technician	High	80	95	95	100	90	110	0
Technical specialist	O&M	Control room operator	Low	75	80	75	80	80	85	0
Technical specialist	O&M	Control room operator	High	100	95	100	110	110	95	0
Technical specialist	O&M	Control room manager	Low	85	95	95	100	95	95	0
Technical specialist	O&M	Control room manager	High	120	120	125	120	125	125	0
	O&M	Maintenance superintendent	Low	85	85	110	120	95	105	0
	O&M	Maintenance superintendent	High	100	100	140	160	125	140	0
	O&M	Maintenance planning / scheduler	Low	80	80	100	90	95	100	0
	O&M	Maintenance planning / scheduler	High	105	105	120	125	130	130	0
	O&M	Operations manager	Low	140	120	150	160	120	160	0
	O&M	Operations manager	High	170	160	200	200	150	220	0
Engineer	O&M	Asset engineer (3-7 years)	Low	85	85	80	80	95	90	0
Engineer	O&M	Asset engineer (3-7 years)	High	110	130	115	120	120	130	0
Field worker	O&M	Leading hand	Low	65	70	85	95	75	90	0
Field worker	O&M	Leading hand	High	80	90	120	125	100	125	0
Field worker	O&M	Electrician	Low	65	60	70	90	80	85	0

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
Field worker	O&M	Electrician	High	75	80	100	110	100	110	0
Field worker	O&M	Mechanical fitter	Low	65	60	70	90	70	85	0
Field worker	O&M	Mechanical fitter	High	75	80	100	110	90	110	0
Technical specialist	O&M	E&I technician	Low	65	70	80	110	75	90	0
Technical specialist	O&M	E&I technician	High	85	95	140	130	100	120	0
Field worker	O&M	Line worker	Low	70	60	75	75	70	80	0
Field worker	O&M	Line worker	High	100	75	100	95	100	120	0
Field worker	O&M	G&B linesworker	Low	-	85	90	85	85	85	0
Field worker	O&M	G&B linesworker	High	-	130	130	120	110	120	0
	O&M	Switching operator	Low	65	80	85	95	85	95	0
	O&M	Switching operator	High	85	110	120	140	120	140	0
Technical specialist	O&M	Protection technician	Low	70	95	120	90	110	90	0
Technical specialist	O&M	Protection technician	High	85	120	160	135	150	135	0
Technical specialist	O&M	Generator technician	Low	70	80	90	80	85	80	0
Technical specialist	O&M	Generator technician	High	85	100	140	120	130	120	0
	O&M	Directional driller	Low	-	70	110	60	80	70	0
	O&M	Directional driller	High	-	100	140	90	110	95	0
Field worker	O&M	Cable jointer	Low	75	80	85	80	85	80	0

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
Field worker	O&M	Cable joiner	High	100	100	110	120	110	120	0
Field worker	O&M	Cable layer	Low	65	70	85	60	85	60	0
Field worker	O&M	Cable layer	High	90	90	110	85	110	85	0
Technical specialist	O&M	Operator / maintainer	Low	75	80	120	120	120	120	0
Technical specialist	O&M	Operator / maintainer	High	95	95	150	150	150	150	0
	PRO DEL	Project manager	Low	140	110	120	150	120	120	0
	PRO DEL	Project manager	High	175	150	170	180	140	160	0
Engineer	PRO DEL	Project engineer (EPCM)	Low	80	80	90	90	85	110	0
Engineer	PRO DEL	Project engineer (EPCM)	High	120	120	125	130	125	140	0
	PRO DEL	Construction manager	Low	140	130	140	140	130	120	0
	PRO DEL	Construction manager	High	175	150	170	170	160	160	0
	PRO DEL	Site superintendent	Low	110	100	95	120	110	95	0
	PRO DEL	Site superintendent	High	140	120	130	160	135	140	0
Technical specialist	PRO DEL	Site engineer	Low	65	80	75	100	75	80	0
Technical specialist	PRO DEL	Site engineer	High	95	120	110	140	100	120	0
Senior engineer	PRO DEL	Commissioning engineer	Low	110	120	115	120	120	100	0
Senior engineer	PRO DEL	Commissioning engineer	High	135	140	160	150	150	150	0
	PRO DEL	Commissioning manager	Low	140	150	130	140	150	140	0

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
	PRO DEL	Commissioning manager	High	180	180	170	180	180	170	0
	PRO SERV	Estimator	Low	90	100	85	90	100	85	0
	PRO SERV	Estimator	High	130	120	130	130	120	120	0
	PRO SERV	Senior estimator	Low	140	140	135	110	120	115	0
	PRO SERV	Senior estimator	High	180	170	180	135	140	150	0
Technical specialist	PRO SERV	Planner / scheduler	Low	80	80	70	90	120	100	0
Technical specialist	PRO SERV	Planner / scheduler	High	120	110	120	120	140	135	0
	PRO SERV	Planning manager	Low	120	100	120	120	130	95	0
	PRO SERV	Planning manager	High	160	150	155	150	160	150	0
	PRO SERV	Contracts administrator	Low	80	80	80	80	80	85	0
	PRO SERV	Contracts administrator	High	110	100	115	100	110	115	0
	PRO SERV	Contracts manager	Low	110	110	110	120	110	120	0
	PRO SERV	Contracts manager	High	140	140	150	140	145	150	0
Technical specialist	PRO SERV	OHS supervisor	Low	90	80	90	90	90	100	0
Technical specialist	PRO SERV	OHS supervisor	High	115	110	120	115	110	130	0
	PRO SERV	OHS manager	Low	140	110	115	115	100	100	0
	PRO SERV	OHS manager	High	180	140	135	135	120	150	0

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
OFFICE SUPPORT										
	ADMIN	Administration assistant (6-12 years)	Low	38	40	40	37	38	45	40
	ADMIN	Administration assistant (6-12 years)	High	45	45	43	38	42	55	45
Admin	ADMIN	Administration assistant (12+ years)	Low	45	44	45	39	40	50	50
Admin	ADMIN	Administration assistant (12+ years)	High	60	50	55	50	46	60	65
Admin	ADMIN	Project admin assistant (3+ years)	Low	55	50	55	50	50	60	60
Admin	ADMIN	Project admin assistant (3+ years)	High	75	65	65	65	60	65	75
	ADMIN	Office manager	Low	65	60	60	60	55	65	65
	ADMIN	Office manager	High	90	75	75	75	70	85	80
Admin	ADMIN	Project coordinator	Low	55	50	55	55	50	60	55
Admin	ADMIN	Project coordinator	High	80	80	65	80	70	75	75
Admin	ADMIN SP	Data entry operator	Low	39	39	40	40	40	45	40
Admin	ADMIN SP	Data entry operator	High	45	45	50	45	45	50	50
	ADMIN SP	Sales coordinator	Low	45	45	45	40	50	45	45
	ADMIN SP	Sales coordinator	High	65	60	55	55	55	55	55
Admin	ADMIN SP	Records officer	Low	55	35	40	45	40	50	40
Admin	ADMIN SP	Records officer	High	70	50	50	65	50	55	55
	ADMIN SP	Medical secretary	Low	50	45	45	50	42	48	50
	ADMIN SP	Medical secretary	High	65	55	55	65	50	55	60
	P&C Support	Document controller	Low	60	55	50	60	50	60	65

Benchmark inclusion	Category	Title	Low/High	Sydney	Melbourne	Brisbane	Perth	Adelaide	Darwin	Canberra
	P&C Support	Document controller	High	85	70	80	100	65	80	85
Admin	P&C Support	Project secretary / administrator	Low	55	55	55	58	50	55	65
Admin	P&C Support	Project secretary / administrator	High	80	70	65	70	65	65	85
	P&C Support	Site secretary / administrator	Low	55	50	50	60	50	60	60
	P&C Support	Site secretary / administrator	High	75	60	60	100	60	85	70
	P&C Support	Facilities administrator	Low	40	45	35	38	43	55	65
	P&C Support	Facilities administrator	High	55	55	45	50	50	60	75
	P&C Support	Contracts administrator (residential)	Low	55	45	38	50	45	70	75
	P&C Support	Contracts administrator (residential)	High	75	65	55	70	60	80	85
Admin	P&C Support	Client liaison (residential)	Low	60	45	47	45	42	55	50
Admin	P&C Support	Client liaison (residential)	High	75	65	56	65	55	60	60

Example translation of Hays annual salary rates to maximum hourly rates

Marsden Jacob labour category: Ausgrid Field Worker

Location: Sydney

Highest equivalent Hays labour category: Line Worker

Highest annual salary rate for Line Worker, Sydney, 2017: \$100,000 per annum

Ausgrid on-cost rate: 52.23%

General overhead rate: 61%

Vehicle allowance for Fleet Worker: \$20/hour

Table 1 rates

Base ('raw') hourly rate 2017 = $\$100,000 / 52 \text{ weeks} / 40 \text{ hours per week}$
= \$48.08/hour

Table 2 rate

Base rate inflated to 2018/19 = $\$48.08 \times (1 + 2.5\% + 0.25\%) \times (1 + 2.5\% + 0.5\%) \times (1 + 2.5\%)$
= \$52.15/hour

Table 5 rate

Total ('all-in') rate 2017 = Base rate x (1+ Ausgrid on-cost rate) x (1 + General overhead rate) + vehicle
= $\$52.15 \times (1 + 52.23\%) \times (1 + 61\%) + \20.00
= \$147.82/hour

Appendix 4 Services included in comparison

Broad service	Ausgrid	Endeavour Energy	Essential Energy	Evoenergy	TasNetworks	PWC
Special meter read	Special Meter Reads	Special Meter Reads	Special Meter Reads	Special Meter Reads	Site visit – no appointment	Special meter read – no appointment
Meter testing	Type 5 & 6 meter test ¹	Meter test fee – Per request	yes	Meter test – whole current	Weighted average of Meter test – single phase; Meter test – multi phase; Meter test – current transformer	Special meter test
Supply of conveyancing information	<i>No longer collected</i>	Supply of conveyancing information – Per desk inquiry	Supply of conveyancing information – Per desk inquiry		Administration	
Off-peak conversion	Off peak conversion	Off peak conversions	Off peak conversion			Network tariff change request
Disconnection site visit	Disconnection visit (Site visit only) ¹	Disconnections/Reconnections (Site visit)	Disconnect vacant premise	Premise Re-energisation – Existing network connection	Site visit – no appointment	Disconnection
Disconnection at pole top/pillar box	Pillar/pole top Disconnection Completed	Disconnections (Pole tope/Pillar box) includes Reconnection	Disconnect (Pole top / Pillar box)	Premise Re-energisation – Existing network connection	Site visit – no appointment	Disconnection
Reconnections		Disconnections/Reconnections (Site visit)	Reconnect vacant premise	Premise Re-energisation – Existing network connection	Site visit – no appointment	Reconnection
Access permits	Single permit	Access permits (common fee across five services)	Access permits			
De-activation - credit issue			Disconnection – technical disconnection	De-energise premises for debt non-payment	Site visit – credit actions or site issues	
Change meter	Distributor arranged outage for purpose of replacing metering - simple	CT Meter removal and disposal; WC Meter Disposal			Remove meter	Exchange or replace meter – standard + Exchange or replace meter – 3 phase
Underground service charge (greenfields)				New network service connection	Underground service in turret/cabinet – single phase + Underground service with pole mounted fuse – single phase	

Broad service	Ausgrid	Endeavour Energy	Essential Energy	Evoenergy	TasNetworks	PWC
Overhead service charge (greenfields)				New overhead service – Brownfield	Overhead connection – single span single phase	
Penalty charges	Reconnection outside business hours		Reconnect outside normal business hours	Rescheduled site visit		Wasted visit

1 Note, this is a quoted service. Uses Ausgrid’s expected time.