Category Analysis RIN Basis of Preparation

Template 2.1 Expenditure Summary

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	17/2/2018	Template set up based on final submission to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.1 Expenditure Summary of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.1 Expenditure Summary (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.1 Expenditure Summary , Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

Furthermore, the below additional requirement/s were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation. Responses to these requirements are made as attachment/s to this Basis of Preparation.

Table 1: Attachment/s to Basis of Preparation for Template 2.1 Expenditure Summary

Notice Reference	Requirement	Attachments
Appendix E, paragraph 2.4-2.5	▪ Ergon Energy must provide an Excel spread sheet that contains the calculation of balancing items reported in Regulatory Template 2.1 ▪ Ergon Energy must provide a reconciliation between the total capital and operating expenditure provided in the Regulatory Template 2.1 to the capital and operating expenditure recorded in Ergon Energy's Regulatory Accounting Statements. ▪ Ergon Energy must provide a reconciliation between the total capital and operating expenditure provided in Ergon Energy's Regulatory Accounting Statements to the capital and operating expenditure recorded in Ergon Energy's Audited Statutory Accounts.	EE1718CA T2.1 EXPS A1 EE1718CA T2.1 EXPS A2 EE1718CA T2.1 EXPS A3

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.1 Expenditure Summary (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued Category Analysis RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 2.1 Expenditure Summary

Tables 2.1.1 - 2.1.4: SCS (Capex)/(Opex), ACS (Capex)/(Opex)

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	▪ Capital Expenditure reported against activities in Table 2.1.1 have been extracted from individual Templates or derived from information provider supporting files for completion of the templates (where templates didn't require Ergon Energy to distinguish, for example, between capital expenditure (capex) / operational expenditure (opex) and nor Standard Control Services (SCS) or Alternative Control Services (ACS) . In this regard: o ACS for 2017-18 is in line with AER classifications. o Public lighting light installation and light replacement have been considered as capex, while light maintenance has been considered as opex. ▪ In accordance with paragraph 2.4 of the Principles and Requirements an additional Excel spread sheet has been prepared which contains the balancing items reported in Regulatory Template 2.1. ▪ Ergon Energy has identified balancing items which relate to duplications in reporting expenditure throughout the templates. ▪ There are no balancing items relating to instances where Ergon Energy has reported capex not on an 'as-incurred' basis. That is to say, where Ergon Energy is required to report in $2017-18 real dollars (Table 2.3.1) in respect of Augex this table is not relevant to the Expenditure Summary. ▪ In order to create an Expenditure Summary total capex that is mutually exclusive and collectively exhaustive as per RIN requirements, along with populating the balancing line item, Ergon Energy inserted Metering and Public Lighting categories.
Population of Actual Information in templates	Where the underlying Expenditure reported in templates is noted as being actual information, the data in the Expenditure Summary Table also reflects actuals.
Source of Actual Information	Refer to individual Basis of Preparation documents as relevant to the underlying Expenditure reported in templates, as drawn through to populate the Expenditure Summary.
Methodology and assumption's applied in relation to Actual Information	Refer to individual Basis of Preparation documents as relevant to the underlying Expenditure reported in templates, as drawn through to populate the Expenditure Summary. **Duplications**- A matrix of Category Analysis RIN requirements was prepared which identified reporting of capex, opex, SCS, and ACS, direct, overheads, gifted asset exclusions, for each table. Further

Minimum Requirements	Ergon Energy Response
	checks were identified where instructions or definitions in the Notice identified specific inclusions / exclusions for activities reported. Discussions were held with appropriate staff to understand how costs are treated within Ergon Energy's financial systems to identify duplications in various activities reported throughout the CA RIN. Duplicated amounts reported throughout tables were linked through into the reconciliation file identifying the associated activity and amount of the duplication. **Reconciliation between CA RIN and Regulatory Reporting Statements (Annual Reporting RIN)** – Adopting the same process mentioned for duplications above, differences between the CA RIN and the **Annual Reporting RIN** were identified for Total Capex and Total Opex. **Reconciliation between Regulatory Reporting Statements (Annual Reporting RIN) & Audited Statutory Accounts** – Based on the AER's Issue Register, where reconciliations had already been reported between Audited Statutory Accounts and the Distribution Network Service Provider (SCS, ACS) in the Regulatory Reporting Statements (RRS) these are also to be considered in meeting compliance with the CA RIN requirements. Additional information was required to be extracted from the Ergon Energy Financial Information (within the Audited Statutory Accounts for Energy Queensland Limited) in respect of Capex as no such reconciliation is otherwise reported. Extracts of the Work in Progress additions from the Financial Statement Notes for Property, Plant and Equipment were used to compare to the Distribution Network Service Provider (DNSP) Capex figures reported in RRS. As the DNSP operates within the entity Ergon Energy Corporation Limited (Ergon Energy), which provides both regulated and non-regulated services, non-regulated capital expenditure is the largest driver of reconciling differences for all years. A further difference relates to the adjustments required under economic regulation, to capex for shared assets.
Population of Estimated Information in Templates	Where the underlying Expenditure reported in templates is noted as being estimated information, the data in the Expenditure Summary Table also reflects estimates. Note for 2017-18, Maintenance and Metering templates are made up of both actual and estimated information and are input into the templates as such. For Maintenance, Routine Maintenance is actual information while Non-Routine Maintenance is estimated information. For Metering, New Meter Installation and Other Metering are estimated information while the rest of the Metering template is actual information.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Refer to individual Basis of Preparation documents as relevant to the underlying Expenditure reported in templates, as drawn through to populate the Expenditure Summary.

Minimum Requirements	Ergon Energy Response
How Estimated Information has been produced.	Refer to individual Basis of Preparation documents as relevant to the underlying Expenditure reported in templates, as drawn through to populate the Expenditure Summary.

Tables 2.1.5 – 2.1.6: Dual Function Assets (Capex)/(Opex)

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has no dual function assets.

Category Analysis RIN Basis of Preparation

Template 2.2 Replacement Expenditure

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.2 Replacement Expenditure of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CARIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.2 Replacement Expenditure (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.2 Replacement Expenditure, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirement(s) were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.2 Replacement Expenditure (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CARIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only.

Regard has been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein). Additionally, in accordance with the AER's clarification (16 October 2018) we rely on the new Reset RIN definition of actual information for the 2017-18 reporting year. The amendment to the existing definition for 'actual information' incorporates an additional paragraph. Refer below:

- *Information presented in response to this notice whose presentation is based on allocation methods using judgments or assumptions can be still reported as actual. However, the allocation method must be clearly documented by the DNSP and approved by senior management as either a regulatory statement accounting policy or regulated statement policy, with any judgments or assumptions used in the allocation remaining consistent between regulatory years. The judgments or assumptions used are to be determined in accordance with this Notice.*

Ergon Energy has applied the new definition to the 2017-18 CA RIN, Repex Template as accepted by the AER for the current period, per email received 16 October 2018.

Prior to the AER amending the annual RINs we would like you to rely on the new Reset RIN definition of actual information (as set out above for 2017-18 reporting year, and as incorporated in the 2021-25 Reset RIN thereafter) to classify the information you are providing in your annual RIN responses. You may reference this clarification in the Basis of Preparation to be submitted with the annual RIN responses.

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle -General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 2.2 Replacement Expenditure

Table 2.2.1 - Cost Metrics by Asset Category

In regards to requirements for Template 2.2, Table 2.2.1, Ergon Energy notes that:

- Where asset sub-categories corresponding to the prescribed asset categories were provided, the expenditure and asset replacement / asset failure volumes of these sub-categories reconcile to the higher level asset category.
- Additional rows were inserted to provide a clear indication of the asset category applicable to each sub-category.
- The expenditure on refurbishment activities performed by Ergon Energy apart from pole staking are not material to the template and therefore not separately disclosed per the notice requirements.
- Additional rows have been inserted to account for assets not accounted for under the prescribed asset group categories or sub-categorisations.
- The sum of the individual asset categories, including any additional sub-category, additional other asset category or Asset Refurbishments / Life Extensions asset category expenditure reconciles to the total expenditure of the asset group.
- Ergon Energy has reported replacement volumes by asset group in Template 2.2, Table 2.2.1 that equal the applicable replacement volume data provided in table 2.2.2. It should be noted that the total poles in table 2.2.2 does not include pole staking, because a pole stake is a reinforcement applied to support a pole and not a pole asset in and of itself.
- The sum of the asset group replacement expenditures is equal to the total replacement expenditure contained in template 2.1 (Expenditure Summary)
- Activity Codes C2000 and C2020 from Ergon Energy's project Ledger have been used to identify expenditure on replacement expenditure projects. The project classification code J2 is used to differentiate between lines and substation program..

General issues

In distribution businesses it is very common for projects to span a number of years depending on the complexity of the project. However, the CA RIN requires expenditure to be reported on an as incurred basis. This definition leads to a disconnection between replacement expenditure and replacement volumes. For example, if a project spans five years the bulk of the expenditure may occur in the third year based on the purchase of major items, however the project may not be commissioned until the fifth year

Only projects with a primary replacement driver have been included in this analysis. As a result, assets replaced due to condition, as part of an augmentation driven project, were not included in this analysis

Unallocated Expenditure:

Ergon Energy identified expenditure in 2017/18 that could not be allocated to existing AER replacement categories. This expenditure is listed in the other (DNSP defined) at the bottom of the template as "Other non AER Asset Categories. The annual expenditure allocated to "Other Non AER Asset Categories" in the Repex model for the 2017/18 regulatory year was $5,155,600.

The unallocated expenditure consists of following categories:

- Defect remediation and return to service projects without AER asset class
- Weather response cyclone Debbie rectification project without AER asset class
- Asbestos related projects
- underground pillar covers,
- meters
- miscellaneous substation assets such as electrical equipment cabinets and lighting fixtures.

Reconcilliation:

The difference between data from the project ledger and the general ledger is 0.2% ($422,869), mainly due to different methods in filtering out the Non SCS / Non System components. The Finance 'AER Categories' are associated to BPUs within Projects. There can be several BPUs within a Project which point to different AER Categories. However, the SAP Hana Project Ledger doesn't go down to a level below Project level – so Project 'J Code' proxies are identified to try to approximate the BPU deductions – but they aren't the same. The difference is applied to categories within the replacement costs proportionately to align to the general ledger.

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Table 1: Replacement Expenditure and Volume

Minimum Requirements	Ergon Energy Response [Staking of a Wooden Pole]
Consistency with Notice requirements	Ergon Energy has prepared the information provided in Template 2.2, Table 2.2.1: Replacement Expenditure Volumes and Asset Failures, by Asset Category, in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Ergon Energy has provided actual Information, in accordance with the AER's definition, in relation to the following variables: ▪ Expenditure by Asset Category (2017-18) ▪ Asset Replacements (2017-18)
Source of Actual Information	The key data sources used to produce figures for replacement expenditure and asset replacement volumes through SAP HANA solution using source project and General Ledger (GL) Transaction and Planning Approval Reports.
Methodology and assumption's applied in relation to Actual Information	***Assumptions:*** • At present, Ergon Energy does not report replacement expenditure according to the asset categories listed in RIN table 2.2.1. In order to satisfy the data requirements in RIN table 2.2.1, Ergon Energy had to develop a methodology of allocating replacement expenditure to the Repex asset categories. • For each project that was analysed as part of RIN table 2.2.1, Ergon Energy has calculated a value of the respective financial year materials expenditure against each of the Repex asset categories. The materials expenditure for Repex asset categories has been converted into weighted averages, based on the materials expenditure in each Repex asset category relative to the total materials expenditure for the project. The weighted average values calculated for each Repex asset category was used as a basis for allocating total non-Repex material expenditure (labour, contract and others) to respective Repex asset categories in the Repex template. • The public lighting asset information included in this template belongs to public lightning works happened under SCS Repex budget. • Asset replacement volumes for Service Lines include apportionment of Services replaced under (C2000 and C2020). These quantities have been calculated using a 33m length for each service line quantity based on average span length. • Overhead conductor and underground cable replacement volumes were provided as "km". • To achieve the actual replacement unit and expenditure apportionment , the methodology is to use 'stock codes' procured under each work request for distribution lines program. • The comprehensive review of stock codes is carried out and all stock codes are manually mapped to an AER RIN asset cateogory, thus allowing the current year methodology explained in following

Minimum Requirements	Ergon Energy Response [Staking of a Wooden Pole]

sections to take place.

- In the stock code mapping process, as one stock code can have only one AER asset code assigned to it, therefore following assumptions are made:
    - Certain pole dimensions can be installed across following voltage levels LV, 11kV and 22kV, therefore actual pole installed usage rate across various voltage levels is used as to derive from Ellipse system the final replacement unit for wood poles. The calculated apportion rate used is 20%, 40% and 40% for LV, 11kV and 22kV respectively.

Approach:

The following approaches were applied to derive these values for replacement expenditure and replacement volumes against the Repex asset categories based on the current stage of the project:

Replacement Expenditure Process

Step 1 – Replacement project data extraction

- A report is run from the SAP Hana tool which includes all replacement projects that incurred expenditure in the 2017/18 regulatory year under the replacement financial activity codes detailed in Table below:

Description	Typical Project Scope	Project Life Cycle
Line Distribution program (C2000 & C2020)	Lines Distribution replacement projects – Poles, cross arms, transformers, switches, overhead lines and underground cables (<=11kV).	maximum 12 months
Substation program (C2020)	Sub-Transmission replacement projects –overhead lines and Underground Cables (=11kV).	12 months to max of 4-5 years

- SAP Hana tool – Modelled data repository captured data from data warehouse.

NOTE:

Currenty the stock code mapping process applies only for line distribution program as the substation programs does not have stock codes at the moment. Therefore substation replacement volume and expenditure are manually calculated based on strategic scope of the project, planning approval reports, scope statement, project estimates and Ellipse asset specifics.

Step 2 - Stock code with Repex Asset Category code extraction

- Respective material transaction records are used to allocate

Minimum Requirements	Ergon Energy Response [Staking of a Wooden Pole]

expenditure to the Repex asset categories for all lines program projects that had expenditure in 2017/18.

- Stock code from Work orders - Every transaction happens under a work order which contains stock codes with Repex asset category and expenditure.

Step 3 (a) – Apportionment Methodology – Lines Program

- The apportionment process is explained with the following example *(for illustration purpose only, not real data).
- From the SAP Hana Transaction table, the following transactions were extracted for a Repex top project WR123456 Feeder ABC Replace Pole Mount Plant with assumed 2017/18 financial year expenditure.

Transaction No:	Expense Element	Transaction Amount	Repex Asset Category
67241280000	Labour	$50,000	Unknown
71872900000	Material	$79,000	Pole Mounted ; < = 22kV ; > 60 kVA and < = 600 kVA ; Single Phase
71872900001	Material	$25,000	< = 11 kV ; Switch
71872900002	Material	$10,000	Non AER material (e.g.; porcelain insulator)
27874220000	Contract	$10,000	Unknown
67241280000	Other	$31,981	Unknown
	Total	***$205,981***	

- As shown in Table above, material expenditure with Repex asset category will pass through directly to respective AER asset class. In the example, $79,000 will be allocated to AER asset class 'TR Pole Mounted ; < = 22kV ; > 60 kVA and < = 600 kVA ; Single Phase' and $25,000 to "< = 11 kV ; Switch " in Repex Table 2.2 expenditure template.
- To allocate remaining unknown expenditure ($79,000 + $25,000 – $205,981 = $101,981), the materials expenditure for Repex asset category will be converted into weighted averages, based on the materials expenditure in each Repex asset category relative to the total Repex materials expenditure for the project.

Stock Code	Repex Asset Category	Transaction Amount	% Apportionment = (Material Transaction amount) / (Total Material Transaction)
SC698	Pole Mounted ; < = 22kV ; > 60 kVA and	$79,000	75.96%

Minimum Requirements	Ergon Energy Response [Staking of a Wooden Pole]

56	< = 600 kVA ; Single Phase		
SC98647	< = 11 kV ; Switch	$25,000	24.04%
Total cost of materials	Total	$104,000	100%

- Remaining unknown expenditure ($79,000 + $25,000 – $205,981 = $101,981) will be allocated to the respective Repex asset category based on weightings shown in table below.

Asset Category	Apportionment	Repex Expenditure
Pole Mounted ; < = 22kV ; > 60 kVA and < = 600 kVA ; Single Phase	= 75.96% x $ 101,981	$74,466
< = 11 kV ; Switch	= 24.04% x $ 101,981	$24,515
Total	***100%***	***$101,981***

- Total Lines distribution expenditure apportioned using the above process is $167M and this is 83% of total Repex expenditure $201M.

Step 3 (b) – Apportionment Methodology – Substation Program

- Total substation expenditure is $34M and this 17% of total Repex expenditure $201M.
- As substation projects don't have stock codes information allocated to project , manual apportionment methodology is required for all substation program including SCADA communication programs as the project materials are allocated in the projects as an expenditure without stock code information.
- Manual apportionment is undertaken in accordance with the same methodology outlined in Step 3 (a) for each work request based on the scope of work. In order to determine the expenditure values and asset volumes of Repex assets replaced as part replacement projects, a detailed review of replacement projects was undertaken. Specifically, this involved reviewing individual project files and engineering specifications to identify the assets, and associated costs of the assets, which would be replaced as part of the project.
- Using the replacement volume derived, to calculate the apportionment percentage, standard estimates are used. These standard estimates are maintained annually by Estimation department and cost of asset

Minimum Requirements	Ergon Energy Response [Staking of a Wooden Pole]
	itema are reviewed and updated by Standards team annually. • The manually achived replacement is believed to be the materially correct number as the subject matter experts review every project in detail with corporate project documents and Ellipse asset management tool. • Manually apportioned information and volume is fed back into the SAP Hana tool to ensure that the reporting is governed and repeatable. NOTE: As part of merger (Ergon Energy & Energex) initiative, EQL is working towards RIN process alignment and this is the main driver for change in methodology compare to previous years. EQL also working towards reviewing substation program to contain stock code information so that the automated lines program methodology can be used. ***Replacement Volume Process*** Step 1 and Step 2 are as same as illustrated in Replacement Expenditure process Step 3 (a) – Replacement Volume – Lines Program • The lifecycle of lines program projects are typically a maximum of one year • Therefore if an asset is booked/transacted in the respective financial year, it is considered to be electrically commissioned on the same financial year. Step 3 (b) – Replacement Volume – Substation Program • The lifecycle of substation program projects are typically a minimum of one year to maximum of 4 to 5 years. • The replacement volume is derived from corporate asset management system – Ellipse. • In Ellipse, the asset attributes with commission and decommission always keep updated by Data team whenever a project completes construction phase and asset electrically commissioned or scrapped from network. • First step is to manually looking of change of status in Ellipse for every asset compare to the previous financial year. • From the asset list, manually validated the asset attirbutes to diffentiate between Repex and Augex work using work request number. • The validated Repex asset installed volume will be entered into respective RIN asset class. The validated quantities are entered into REPEX template Table 2.2.1 accordingly.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided actual information.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons	Not applicable. Ergon Energy has provided actual information.

Minimum Requirements	Ergon Energy Response [Staking of a Wooden Pole]
why Estimates are Ergon Energy's best estimates.	
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided actual information.

Table 2: Asset Failure

Minimum Requirements	Ergon Energy Response [Asset Failures for 17/18]
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.2, Table 2.2.1: Replacement Expenditure Volumes and Asset Failures, by Asset Category, in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, in relation to Asset Failures (2017-18). For the following Asset Groups and Asset Categories: ○ Pole, Pole Top, Overhead Conductors, Underground Cables, Service Lines ○ Switchgear: ○ < = 11 kV ; Circuit Breaker ○ 11 kV & < = 22 kV ; Circuit Breaker ○ 22 kV & < = 33 kV ; Circuit Breaker ○ 33 kV & < = 66 kV ; Circuit Breaker ○ 66 kV & < = 132 kV ; Circuit Breaker ○ 132 kV ; Circuit Breaker ○ Transformer: ○ Ground Outdoor / Indoor Chamber Mounted; > = 22 kV & < = 33 kV ; < = 15 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > = 22 kV & < = 33 kV ; > 15 MVA and < = 40 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > = 22 kV & < = 33 kV ; > 40 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 33 kV & < = 66 kV ; < = 15 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 33 kV & < = 66 kV ; > 15 MVA and < = 40 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 33 kV & < = 66 kV ; > 40 MVA

	○ Ground Outdoor / Indoor Chamber Mounted; > 66 kV & < = 132 kV ; < = 100 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 66 kV & < = 132 kV ; > 100 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 132 kV ; < = 100 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 132 kV ; > 100 MVA
Source of Actual Information	The source of Action Information was retrieved using the database application SAP HANA. The application was used to collate data from different source systems, which were: ○ Outage Management System Application: FeederSTAT) ○ Enterprise Resource Planning (ERP) Application: Ellipse
Methodology and assumption's applied in relation to Actual Information	**For the following Asset Groups, the following ***Methodology A*** was applied:** ○ Pole, Pole Top, Overhead Conductors, Underground Cables, Service Lines. ***Methodology A*:** The information was compiled utilising the network Unplanned and Forced Outages in conjunction with Maintenance Strategy Support System (MSSS Code) codes configured within ERP Ellipse work order fields. **Explanation of Difference in Asset Failure numbers between Past Year and Current Year:** Ergon Energy recognises that the asset failure numbers submitted for the Current Year (CY) is a considerable decrease compared to Past Years (PY). The reason for this is because Ergon Energy have attempted to comply with asset failure definition as per the AER requirement, where an asset failure should only be Unassisted Failure. In PY's submissions, Ergon Energy have included both Assisted and Unassisted Failures, and defect replacement into the submission. Therefore the asset failure counts were considerably much higher. **Explanation of Unplanned and Forced Outages:** The outages are limited to Unplanned and Forced Outages. Unplanned Outages means an unexpected interruption to the power supply caused by a fault on the network. Whereas a Forced Outage is a planned outage where Emergency Switching to carry out unplanned repairs or emergency maintenance of the Network is required. **Explanation of Ellipse Work Order and MSSS configuration.** Within ERP Ellipse, a work order has dedicated fields to allow Asset Management to identify root cause of failure or root cause for performing the corrective work or root cause that an unplanned outage have occurred. These dedicated fields are described as Maintenance Strategy Support

System (MSSS Codes), which consist of:

- Component Code / Component Modifier Code / Object / Damage / Cause / Consequence

Association between Outages Information and Ellipse Work Order:

For Ergon Energy, an Unplanned Outage or a Forced Outage are always associated with a work order creation in Ellipse. The work orders are created systematically when the outage occurs. And upon closure of work orders MSSS configuration are compiled by Distribution Services.

In compiling the asset failure numbers the following assumptions were made:

Ellipse work order's MSSS Codes attributes are deemed and assumed to be the root cause of failure.

Information entered into other respective fields such as with Ellipse's Work Order Description, Work Order Long Description and Work Order Completion Text or Outage Trigger and Outage Reason Description are utilised as support information which assists us with filtering out Assisted Failures.

Assisted Failures are assumed to be external impacts such as:

- Extreme or astypical weather events
- Third party interference, such as traffic accidents and vandalism
- Wildlife interference, but only where the wildlife interference directly, clearly and unambiguously influenced asset performance
- Vegetation interference, but only where the vegetation interference directly, clearly and unambiguously influenced asset performance

Where the work order has appropriate MSSS Codes that suggest that the asset has failed. It is assumed to be a single failure event.

Where the work order has appropriate MSSS Codes that suggest that the asset have failed, but without support information (eg. Outage Trigger). Because the MSSS Codes suggests that the failure had occurred, such event is assumed to be a single failure event.

Where the work order has appropriate MSSS Codes that suggest that the asset has failed, but supporting information (eg. Outage Trigger) suggests that the outage event was caused by external impact(s) that are deemed as Assisted Failures, such event(s) are excluded where possible.

For the following Asset Groups and its Asset Categories *Methodology B* was applied:

Switchgear:

- < = 11 kV ; Circuit Breaker
- 11 kV & < = 22 kV ; Circuit Breaker
- 22 kV & < = 33 kV ; Circuit Breaker
- 33 kV & < = 66 kV ; Circuit Breaker
- 66 kV & < = 132 kV ; Circuit Breaker

	○ 132 kV ; Circuit Breaker Transformer: ○ Ground Outdoor / Indoor Chamber Mounted; > = 22 kV & < = 33 kV ; < = 15 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > = 22 kV & < = 33 kV ; > 15 MVA and < = 40 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > = 22 kV & < = 33 kV ; > 40 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 33 kV & < = 66 kV ; < = 15 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 33 kV & < = 66 kV ; > 15 MVA and < = 40 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 33 kV & < = 66 kV ; > 40 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 66 kV & < = 132 kV ; < = 100 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 66 kV & < = 132 kV ; > 100 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 132 kV ; < = 100 MVA ○ Ground Outdoor / Indoor Chamber Mounted; > 132 kV ; > 100 MVA Field Devices ***Methodology B:*** Asset Groups/Categories associated with *Methodology B* have been assumed to be Substation Assets. A review of Ergon Energy's Return To Service (RTS) project was conducted with the respective regional Subject Matter Experts to identify project(s) associated with Asset Failures, where the asset could no longer be returned to service. Where a review RTS projects were not possible due to staff resourcing and internal business restructure reasons. Interviews were conducted with the respective regional Workgroup Leaders, Crew leaders and Work Scheduler to identify the Asset Failures work conducted through the 17/18 period. **Explanation of RTS Project:** RTS Project are projects associated with asset replacement that are due to failures of an asset or deterioration of an asset where an asset replacement is required and was not planned as part of Capital Program
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information, in accordance with the AER's definition, in relation to Asset Failures (2017-18). For the following Asset Groups and Asset Categories: Public Lighting, Communication Network Equipment, Communication Site Infrastructure, Communication Linear Assets. ○ Transformer:

	○ Pole Mounted ; < = 22kV ; < = 60 kVA ; Single Phase ○ Pole Mounted ; < = 22kV ; > 60 kVA and < = 600 kVA ; Single Phase ○ Pole Mounted ; < = 22kV ; > 600 kVA ; Single Phase ○ Pole Mounted ; < = 22kV ; < = 60 kVA ; Multiple Phase ○ Pole Mounted ; < = 22kV ; > 60 kVA and < = 600 kVA ; Multiple Phase ○ Pole Mounted ; < = 22kV ; > 600 kVA ; Multiple Phase ○ Kiosk Mounted ; < = 22kV ; < = 60 kVA ; Single Phase ○ Kiosk Mounted ; < = 22kV ; > 60 kVA and < = 600 kVA ; Single Phase ○ Kiosk Mounted ; < = 22kV ; > 600 kVA ; Single Phase ○ Kiosk Mounted ; < = 22kV ; < = 60 kVA ; Multiple Phase ○ Kiosk Mounted ; < = 22kV ; > 60 kVA and < = 600 kVA ; Multiple Phase ○ Kiosk Mounted ; < = 22kV ; > 600 kVA ; Multiple Phase ○ Ground Outdoor / Indoor Chamber Mounted; < 22 kV ; < = 60 kVA ; Single Phase ○ Ground Outdoor / Indoor Chamber Mounted; < 22 kV ; > 60 kVA and < = 600 kVA ; Single Phase ○ Ground Outdoor / Indoor Chamber Mounted; < 22 kV ; > 600 kVA ; Single Phase ○ Ground Outdoor / Indoor Chamber Mounted; < 22 kV ; < = 60 kVA ; Multiple Phase ○ Ground Outdoor / Indoor Chamber Mounted; < 22 kV ; > 60 kVA and < = 600 kVA ; Multiple Phase ○ Ground Outdoor / Indoor Chamber Mounted; < 22 kV ; > 600 kVA ; Multiple Phase ○ Switchgear: ○ < = 11 kV ; FUSE ○ < = 11 kV ; Switch ○ 11 kV & < = 22 kV ; Switch ○ 22 kV & < = 33 kV ; Switch ○ 33 kV & < = 66 kV ; Switch ○ 66 kV & < = 132 kV ; Switch ○ 132 kV ; Switch
Why is it not possible to provide Actual Information and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimate.	It was not possible to use Actual Information, and Estimate is required because the corporate application and the associated processes were not envisioned or configured with the level of detail requested by the AER. Due to the large quantity of RTS Project associated with the respective Asset Group and Asset Categories and corporate application do not allow Ergon Energy to clearly identify Unassisted Failures, Assisted Failure or Defect replacement projects, the best estimate approach was taken.
How Estimated Information has been produced.	**Data Source of Estimated Information for *Methodology C*** Source of Esaimted Information was retrieved using database application SAP HANA. The data was collate from different source systems: • Enterprise Resource Planning (ERP) Application: Ellipse

***Methodology C*:**

Asset Group/Categories associated with *Methodology C* have been assumed to be Distribution Network Assets and Communication Equipment. This differs to Asset Group/Categories associated with *Methodology B* where it was assumed to be Substation Assets.

For Asset Group/Categories associated with this methodology, the estimated stock unit usage associated with RTS projects were assumed to be asset failure counts.

The estimated stock unit usage were estimated by:

1. Extracting RTS project for 17/18. Then review the RTS project material costing with respective Asset RIN Categories
2. Extract the Stock issued quantity and the respective Asset RIN Categories.
3. Calculated the average unit cost for the respective Asset RIN categories.
4. Divide the #1 against #2 to derive the Stock Usage Unit per RTS Project.
5. Add the total quantity for the respective Asset RIN Categories.

With the exception for Communication Network Equipment, Communication Site Infrastructure and Communication Linear Assets. The estimated asset failure counts were Estimated by counting the RTS failure work orders associated with equipment replacement and then grouped into the relevant Asset Categories

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Table 2.2.2 - Descriptor Metrics

Table 3: Poles, Overhead Conductors and Underground Cables

Minimum Requirements	Ergon Energy Response [Poles, Overhead Conductors and Underground Cables]
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. Ergon Energy does not have “CBD” Poles, Conductor or Cable assets.
	Ergon Energy has prepared the information provided in Template 2.2, Table 2.2.2 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Ergon Energy has provided Actual Information. ▪ Currently in commission
Source of Actual Information	▪ Smallworld, GIS ▪ Ellipse, ERP ▪ Outage Management System (OMS)
Methodology and assumption’s applied in relation to Actual Information	Asset volume in commission by feeder type for poles, conductor and cable is sourced from Ergon Energy’s Smallworld (GIS), Ellipse (ERP) and Outage Management System (OMS). GIS is used to determine the conductor lengths broken down by feeder and the material used for over head Conductors. A combination of ERP and GIS is used to get a count of poles broken down by feeder. The feeder type for each feeder is determined from the classifications in OMS. This allows asset volumes to be determined by feeder type. Ergon Energy’s OMS has a feeder classification of Transmission. Assets associated with the Transmission classification were included in the asset volumes for “Rural Long” Assets for which no classification could be determined were allocated to the feeder type in the same proportion as other assets associated with the feeder type.
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables: ▪ Replacements
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	It is not possible to use Actual Information and an estimate is required in relation to Asset Replacements because the assets do not have these categories attached.

Minimum Requirements	Ergon Energy Response [Poles, Overhead Conductors and Underground Cables]
How Estimated Information has been produced.	In relation to Replacements, Ergon Energy has developed an estimate based on an approach whereby the ratio of Urban, Rural And Rural Long asset volumes and material type is used to assign a portion of the replacements to each category.

Table 4: Transformers

Minimum Requirements	Ergon Energy Response [Transformers]
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.2, Table 2.2.2 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Ergon Energy has provided Actual Information. Total MVA currently in commission Ergon Energy has provided Estimated Information to the rest of the table.
Source of Actual Information	▪ Smallworld, GIS ▪ Ellipse, ERP
Methodology and assumption's applied in relation to Actual Information	Transformer capacity in commission is sourced from Ergon Energy's Smallworld (GIS) and Ellipse (ERP). A combination of ERP and GIS is used to get a total sum of rating of transformers. ▪ For Zone transformers, MVA ratings have been sourced from Ergon Energy's corporate ERP – Ellipse (Asset Management Module) nameplate data. ▪ For Distribution Transformers, nameplate rating has been obtained from Ergon Energy's corporate ERP – Smallworld GIS data. Ergon Energy provides the information of the TOTAL MVA in commission in each year in cell I171 to L171 where the column heading is "ASSET VOLUMES CURRENTLY IN COMMISSION" and the row heading is "Total MVA replaced". ▪ As the units are different, the value of the total physical unit of transformer replaced will not agree with the total value of tranformer MVA replaced.
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables: ▪ TOTAL MVA DISPOSED OF ▪ TOTAL MVA REPLACED ▪ TOTAL MVA [replaced in current year]

Minimum Requirements	Ergon Energy Response [Transformers]
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	It was not possible to use Actual Information. An estimate is required in relation to TOTAL MVA DISPOSED OF, because there is a large time lapse when transformers are sent to be tested for possible repair and then are disposed. It was not possible to use Actual Information. And an estimate is required in relation to TOTAL MVA REPLACED, because there is no direct record in our system of when an asset is replaced, or log of when it is replaced.
How Estimated Information has been produced.	***TOTAL MVA DISPOSED OF*** ***TOTAL MVA REPLACED*** ***TOTAL MVA*** [replaced in current year] In relation to TOTAL MVA, Ergon Energy has developed an estimate based on the following approach ▪ For Substation transformers, MVA ratings have been sourced from Ergon Energy's corporate ERP- Ellipse. The nameplate data is summated. ▪ For Distribution Transformers, nameplate rating has been obtained stores issues data. The nameplate rating is contained within the text description of distribution transformers in the inventory register. A temporary data table was produced by reading each distribution transformer description and giving it a rating. ▪ Total MVA capacity replaced each year is then obtained by adding Power transformer data to Distribution transformer data In developing this estimate, Ergon Energy assumed those transformers that are installed are booked to the correct code. Ergon Energy considers this the best estimate has been provided for these TOTAL MVA as the inventory system is well maintained and has rigorous processes and the manual searching was vigorous.

Category Analysis RIN Basis of Preparation

Template 2.3 Augex Project Data

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.3 Augex Project Data (including Template 2.3(a) and 2.3(b) per revised templates reissued) of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.3 Augex Project Data (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.3 Augex Project Data, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information;
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.
- how Ergon Energy is investigating the opportunity to invest in system and/or processes to record and produce "actual" data; and
- progress made to date and planned implementation date.

Furthermore, the below additional requirement/s were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation. Responses to these requirements are made as attachment/s to this Basis of Preparation.

Table 1: Attachment/s to Basis of Preparation for Template 2.3 Augex Project Data

Notice Reference	Requirement	Attachments
7.2(c)(i), and 7.3(c)(i)	▪ Where expenditure has been reported in real $2017-18, provide any calculations used to convert real to nominal dollars or nominal to real dollars for this purpose.	EE1718CA T2.3 AGX A1

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.3 Augex Project Data (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24

October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of ‘actuals’ and ‘estimates’ (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 2.3 Augex Project Data

Template 2.3(a) Augex Project Data

Table 2.3.1 Augex Asset Data – Subtransmission Substations, Switching Stations and Zone Substation

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.3(a), Table 2.3.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has only included projects and expenditure related to augmentation of the network (only projects under augmentation financial activity codes C2010, C2030, C2040 and C2050 have been reported), excluding costs relating to non-network assets identified as part of the annual reporting RIN preparation. To exclude non-network costs, the proportion of total non-network assets to network assets based on actual ellipse data was used to estimate the non-network costs for each project type. Ergon Energy has not included information for gifted assets, and no augmentation expenditure in relation to connections has been included in template 2.3(a). Projects were included for augmentation and the addition of equipment within sub-transmission substations i.e. monitoring and communication equipment under table 2.3.1, although there were no additional capacity (MVA) added to substations. These projects were therefore included as non-material projects. Unless otherwise indicated, 'Rating' or 'MVA added' refers to equipment's normal cyclic rating (for substations) or thermal rating (for lines and cables). The calculations of capacity are based on normal conditions and in response to paragraph 7.1(b), Ergon Energy defines "normal conditions": ▪ "When assessing compliance with the network security criteria it is important to select the correct plant ratings for each scenario. It should be noted that, the Normal Cyclic Capacity (NCC) of equipment applies during system normal conditions i.e. where all network elements are in service." NCC Values given for Transformers have been taken from February 2015 Transformer Cyclic Ratings Spreadsheet With regards to Related Party expenditure:

Minimum Requirements	Ergon Energy Response
	▪ As a consequence of the Queensland Energy Consolidation on 30 June 2017, Energex and Ergon Energy have become related parties and will be required to make associated related party disclosures for RIN reporting purposes. ▪ Within the Ergon Energy group, the parent entity Ergon Energy Corporation Limited (EECL) maintains controlling interest over three reporting entities. These include Ergon Energy Queensland Pty Limited (EEQ) and Ergon Energy Telecommunications Pty Limited (EET) which are both 100% owned, and a jointly controlled entity SPARQ Solutions Pty Ltd (SPARQ) where Ergon Energy maintains a 50% ownership interest. EEQ is a non-competing electricity retailer; EET is a wholesale telecommunication service provider; and SPARQ is an information, communications and technology service provider. ▪ Ergon Energy did not identify any Related Parties contract expenditure in relation to Augmentation (capital) expenditure (Augex) projects and Related Party Margins is recorded as "zero". ▪ All Non Related Party Contracts are calculated as the Total Contractors expenditure. Expenditure in 'All related party contracts' and 'All non-related party contracts' columns do not contribute to the total direct expenditure on an augex project ('Total direct expenditure') as required. ▪ Finally, all contract expenditure for augex projects under the 'All related party contracts' and 'All non-related party contracts' columns were allocated to the appropriate 'Plant and equipment" expenditure and "Other Expenditure". Ergon Energy has considered and complied with clarifications provided by the AER on issues related to template 2.3(a) and relevant to Ergon Energy. With regards to instructions specific to Table 2.3.1 (on regulatory template 2.3(a)), Ergon Energy notes: ▪ Ergon Energy has reported all expenditure data for augex in Table 2.3.1 in real $2017-18. Nominal dollars has been converted to real dollars using actual CPI rates (Dec-Dec for the weighted average of eight capital cities as published by the Australian Bureau of Statistics (ABS). Calculations have been provided as **Attachment 1: Nominal to real values Template 2.3**. ▪ Ergon Energy only included data in table 2.3.1 for augmentation works where project close occurred within the year specified and did not include data for works where the project closed after the year specified but incurred expenditure prior to this date. ▪ Augex projects on a subtransmission substation, switching station and zone substation owned and operated by Ergon Energy with greater than or equal to $5 million (nominal) cumulative expenditure over the life of the project where project close occurred at any time

Minimum Requirements	Ergon Energy Response
	in the year specified, have been reported separately in table 2.3.1. ▪ In this regard, both direct and indirect (overheads) costs were included in determining the cumulative expenditure over the life of a project as per the AER clarification however, only the direct cost was reportable in table 2.3.1. ▪ Projects with less than $5 million nominal expenditure over the life of the project where project close occurred at any time in the year specified have been consolidated into the expenditure figures in the penultimate row of table 2.3.1. ▪ All augmentation work on substations in Ergon Energy's network was included in table 2.3.1. There were no substations operating at notional transmission voltages. ▪ Each row in table 2.3.1 represents an individual substation and project. Ergon Energy does not conduct work on more than one substation per one project. Ergon Energy uses a parent project with child projects underneath the parent project to structure projects. The highest level (parent project) is the substation with all the components relevant to that one substation raised as child projects under the parent project. ▪ No substation augex projects in table 2.3.1 are related to other projects, including other tables in template 2.3(a). ▪ The substation ID's provided in table 2.3.1 represents Ergon Ellipse Asset substation identification number and the project ID is Ergon Energy's project number allocated within the Ellipse operating system. ▪ The primary trigger was selected within the drop down list provided. None of the projects listed in table 2.3.1 have any secondary triggers to be disclosed. Ergon Energy has provided additional information in relation to projects where "Other – specify" were selected in **Appendix A: Template 2.3 Table 2.3.1 Other – specify.** ▪ Voltages on substations listed in table 2.3.1 were entered in the format xx/xx or xx/xx/xx, reflecting the primary, secondary and tertiary voltages. ▪ Ergon Energy has complied with the required in put 'Pre' and 'Post' substation ratings as per paragraph 7.2 (k) ▪ Ergon Energy only included procurement cost under 'Total expenditure' for transformers, switchgear, capacitors and other plant items. Installation costs have been reported separately in each table. With regards to Land and Easement expenditure: ▪ Total direct expenditure does not include any expenditure for land or easements. ▪ Furthermore, Ergon Energy input all expenditure directly attributable to the land purchase or easement compensation payments in the 'Land purchases' and 'Easements' columns, respectively, including

Minimum Requirements	Ergon Energy Response
	legal, stamp duties and cost of purchase or easement compensation payments. Where contractor payments were not coded to the Land & Easement expense element the costs were included under "Installation Labour" or "Other Plant". ▪ Ergon Energy calculated 'Other Plant' expenditure as the total cost of all equipment and materials booked to the relevant project less actual cost for Transformers, Switchgear and Capacitors.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, for the following variables in Template 2.3(a), Table 2.3.1 which requires expenditure data on a project close basis, for all initial regulatory years (2017-18). ▪ Installation Volume ▪ Installation (Labour) Expenditure ▪ Civil Works Expenditure ▪ Other Direct Expenditure ▪ Years Incurred ▪ All Non Related Party Contracts ▪ Land Purchase ▪ Easements ▪ Non Material Projects – Total Direct Expenditure ▪ Non Material Projects – Years Incurred ▪ Non Material Projects – Land Purchase ▪ Non Material Projects – Easements ▪ Voltage (KV) ▪ Substation Rating Normal Cyclic (MVA) ▪ Substation Rating N-1 Emergency (MVA) ▪ Transformers – Units added ▪ Transformers – MVA Added ▪ Transformers – Expenditure ▪ Switchgear – units added ▪ Switchgear – Expenditure ▪ Capacitors – MVAR added ▪ Capacitors – Expenditure The majority of Augmentation projects incurred cost over more than one financial year and in some cases over a number of financial years. Projects with project close dates within the reporting period (2017-18) would have had cost incurred before the reporting period (pre 2017-18),

Minimum Requirements	Ergon Energy Response
	which was included in expenditure disclosed in table 2.3.1. Projects were included in table 2.3.1 only where the project close date occurred at any time in the year specified. Project close date (i.e. project finalisation date) is when all project costs have been recognised and reconciled, and not the date at which the project was put in service and capitalised. The project close date could differ from the project capitalisation date.
Source of Actual Information	Actual Information for the financial variables was sourced from Ergon Energy's Ellipse operating system. ▪ The following actual information for non-financial variables was sourced from "as built" schematics and relevant planning reports: ▪ Transformers – Units added ▪ Transformers – MVA Added ▪ Switchgear – Units added ▪ Capacitors – MVAR added ▪ Substation Rating Normal Cyclic (MVA) ▪ Substation Rating N-1 Emergency (MVA)
Methodology and assumption's applied in relation to Actual Information	Report was run from the Ellipse operating system which listed all projects closed within regulatory year 2018 under the augex financial activity codes C2010, C2030, C2040 and C2050 – the 2017_MASTER_C2010_C2030_C2040_C2050 report, excluding costs relating to non-network assets identified as part of the annual performance RIN preparation. To exclude non-network costs, the proportion of total non-network assets to network assets based on actual ellipse data was used to estimate the non-network costs for each project type. The Report included all Ergon Energy augex projects, not only those related to Subtransmission Substations, Switching Stations and Zone Substations. The project list was filtered to include only those projects relating to Subtransmission Substations, Switching Stations and Zone Substations by analysing the project j-codes (asset classification codes) and extracting Subtransmission Substations, Switching Stations and Zone Substations projects. The extracted substation project list reported each project and their total cumulative expenditure over the life of the project, broken down by direct costs and overheads as well as their total annual expenditure as incurred (excluding overheads). Each project with a total (whole of life) expenditure of equal or greater than $5 million (nominal, inclusive of direct and overhead costs) was reported as a separate project in the RIN template. Those projects less than $5 million were labelled as a non-material project to be consolidated into a single substation line item in table 2.3.1. The report also provided cost per project for the following expenditure

Minimum Requirements	Ergon Energy Response
	categories: Materials, Contractor cost, Labour cost, Purchases, Stores, Other direct cost. Further detailed expenditure reports were run from Ellipse on each material project providing details of each expense booked to the project. In order to report the information in the required expense categories per table 2.3.1, Ergon Energy applied the following methodology and assumptions to the data presented in the 2018_MASTER_C2010_C2030_C2040_C2050 report: **Installation (Labour) Volume** was calculated as the sum of Total Labour Hours reported within Ellipse Fin 900h reports for each project. **Installation (Labour) Expenditure** was calculated as the Sum of Contractors and Labour as per the 2018_MASTER_C2010_C2030_C2040_C2050 report, less civil works labour identified through detailed analysis of labour expenditure for each project. **Civil Works Expenditure** was calculated on the Asset apportionment percentage for Substation Buildings on the Incurred To Date Costs (excluding overheads). There is no report available to provide this information as civil costs fall to the contractor expense elements. After reviewing detailed contractor and purchase transactions for Projects in Ellipse reports we could not identify with accuracy civil works costs. We therefore used the BPU apportionment for Substation buildings (percentage of project cost allocated to Substation buildings) and applied this percentage to the Total cumulative costs (excluding overheads) of the individual projects and input as civil works cost into table 2.3.1. ▪ **Transformer Expenditure** was identified and calculated by reviewing individual project transaction reports (Ellipse Fin 900h reports) and identifying and totaling individual transactions under expense categories for “purchases and material’ that related to transformers ▪ **Switchgear Expenditure** was identified and calculated by reviewing individual project transaction reports (Ellipse Fin 900h reports) and identifying and totaling individual transactions under expense categories for “purchases and material’ that related to switchgear ▪ **Capacitor Expenditure** was identified and calculated by reviewing individual project transaction reports (Ellipse Fin 900h reports) and identifying and totaling individual transactions under expense categories for “purchases’ that related to capacitors. No capacitor expenditure was identified **Other Plant Expenditure** was calculated as the Total Materials and Purchases as per the 2018_MASTER_C2010_C2030_C2040_C2050 report, less actual cost for Transformers, Switchgear and Capacitors. **Other Direct Expenditure** was calculated as the Total Other Costs as per the 2018_MASTER_C2010_C2030_C2040_C2050 report, less the

Minimum Requirements	Ergon Energy Response
	sum of Land and Easements. Total Other Cost as per 2018_MASTER_C2010_C2030_C2040_C2050 report includes Land and Easement cost. Other Costs includes:- ▪ Capital Interest ▪ Computer ▪ Marketing ▪ Other ▪ Transport Internal ▪ Transport External ▪ Travel & Accommodation **Years Incurred** was sourced from the 2018_MASTER_C2010_C2030_C2040_C2050 report. Projects reported in regulatory year 2018 are based on closure dates within this regulatory period, some projects will have incurred final costs in previous financial years. **Related Party Margins** is recorded as “zero”; Ergon Energy did not identify any Related Parties contract expenditure in relation to Augmentation projects. **All Non Related Party Contracts** is disclosed as the Total Contractors expenditure as per the 2018_MASTER_C2010_C2030_C2040_C2050 report **Land Purchase and Easements** cost is included as Other Costs in the 2018_MASTER_C2010_C2030_C2040_C2050 report. Land and Easement cost was therefore calculated by running an Ellipse report for activities C2010, C2030, C2040 & C2050 by expense element 6160 (Easement/Land), the 2018_MASTER_Augex Account Codes_WO Txns with EE 6160 Report. This report provided the total land and easement cost per project. To split the cost between Land Purchase and Easements, we used the BPU apportionment for Land (L5) (percentage of project cost allocated to Land) and Easements (L9) (percentage of project cost allocated to Easement) from 2018_MASTER BPU Data report and applied this percentage to the total Land and Easement expenditure as per 2018_MASTER_Augex Account Codes_WO Txns with EE 6160 for each project and input as Land purchase or Easements in table 2.3.1. **Non Material Projects – Total Direct Expenditure** was sourced from the 2018_MASTER_C2010_C2030_C2040_C2050 report. The total cumulative expenditure (excluding overheads) over the life of the projects identified as non- material projects as per the 2018_MASTER_C2010_C2030_C2040_C2050 report was listed as Total Direct Expenditure for Non Material projects in table 2.3.1. **Non Material Projects – Years Incurred** was sourced from the RIN 2018_MASTER_C2010_C2030_C2040_C2050 report

Minimum Requirements	Ergon Energy Response
	Non Material Projects - **Land Purchase and Easements** was calculated by applying the same methodology as for Land Purchase and Easements for material projects described above. ▪ **Non-financial Variables** The following actual information for non-financial variables was sourced from "as built" schematics and relevant planning reports: ▪ Transformers – Units added ▪ Transformers – MVA Added ▪ Switchgear – units added ▪ Capacitors – MVAR added ▪ Substation Rating Normal Cyclic (MVA) ▪ Substation Rating N-1 Emergency (MVA) **Converting nominal to real values** Ergon Energy has reported all expenditure data for augex in Table 2.3.1 in real $2017-18. Nominal dollars has been converted to real dollars using actual CPI rates (Dec-Dec) for the weighted average of eight capital cities as published by the Australian Bureau of Statistics (ABS). The 2018_MASTER_C2010_C2030_C2040_C2050 report provided a split of total cumulative cost (excluding overheads) in nominal values for each year in which cost was incurred. Ergon Energy applied the relevant CPI rate for each specified year in which cost was incurred to convert the nominal values to real values. The following assumptions were applied in converting nominal values to real values: ▪ **Land & Easements –** The financial year in which land and easements costs were incurred was not specified within reporting data. The assumption that land and easement costs have been incurred first was applied to convert land and easement cost to real values. ▪ **Expenditure categories -** Cost incurred by financial year cannot be split by expense category. Total project cost nominal values per year incurred have therefore been converted to real values and total real values apportioned into expenditure categories based on the nominal values allocated to each expense category.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information.

Minimum Requirements	Ergon Energy Response
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information.

Table 2.3.2 Augex Asset Data – Subtransmission Lines

Table 2: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.3(a), Table 2.3.2 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy have considered and complied with clarifications provided by the AER on issues related to template 2.3(a) and relevant to Ergon Energy. Ergon Energy has only included projects and expenditure related to augmentation of the network (only projects under augmentation financial activity codes C2010, C2030, C2040 and C2050 have been reported). Ergon Energy has not included information for gifted assets, and no augex in relation to connections has been included in template 2.3(a). Unless otherwise indicated, 'Rating' or 'MVA added' refers to equipment's normal cyclic rating (for substations) or thermal rating (for lines and cables). The calculations of capacity are based on normal conditions and in response to paragraph 7.1(b), Ergon Energy defines "normal conditions": ▪ "When assessing compliance with the network security criteria it is important to select the correct plant ratings for each scenario. It should be noted that, the Normal Cyclic Capacity (NCC) of equipment applies during system normal conditions i.e. where all network elements are in service." ▪ With regards to Related Party expenditure: ▪ As a consequence of the Queensland Energy Consolidation on 30 June 2017, Energex and Ergon Energy have become related parties and will be required to make associated related party disclosures for RIN reporting purposes. ▪ Within the Ergon Energy group, the parent entity EECL maintains controlling interest over three reporting entities. These include EEQ and EET which are both 100% owned, and a jointly controlled entity SPARQ where Ergon Energy maintains a 50% ownership interest. EEQ is a non-competing electricity retailer; EET is a wholesale telecommunication service provider; and SPARQ is an

Minimum Requirements	Ergon Energy Response
	information, communications and technology service provider. ▪ Ergon Energy did not identify any Related Parties contract expenditure in relation to Augmentation projects and Related Party Margins is recorded as “zero”. ▪ All Non Related Party Contracts are calculated as the Total Contractors expenditure. Expenditure in ‘All related party contracts’ and ‘All non-related party contracts’ columns do not contribute to the total direct expenditure on an augex project (‘Total direct expenditure’) as required. ▪ Finally, all contract expenditure for augex projects under the ‘All related party contracts’ and ‘All non-related party contracts’ columns were allocated to the appropriate ‘Plant and equipment” expenditure With regards to instructions specific to Table 2.3.2 (on regulatory template 2.3(a)), Ergon Energy notes: ▪ Ergon Energy has reported all expenditure data for augex in Table 2.3.2 in real $2017-18. Nominal dollars has been converted to real dollars using actual CPI rates (Dec-Dec) for the weighted average of eight capital cities as published by the Australian Bureau of Statistics (ABS). Calculations have been provided as Attachment 1 to this Basis of Preparation. ▪ Ergon Energy only included data in table 2.3.2 for augmentation works where project close occurred within the year specified and did not include data for works where the project closed after the year specified but incurred expenditure prior to this date. ▪ Augex projects on a subtransmission line owned and operated by Ergon Energy with greater than or equal to $5 million (nominal) cumulative expenditure over the life of the project where project close occurred at any time in the year specified to report separately in table 2.3.2. ▪ In this regard both direct and indirect (overheads) cost was included in determining the cumulative expenditure over the life of a project as per AER clarification. Only direct cost was included in table 2.3.2. ▪ Projects with less than $5 million nominal expenditure over the life of the project where project close occurred at any time in the year specified have been consolidated into the expenditure figures in the penultimate row of table 2.3.2. ▪ All augmentation work on subtransmission lines in Ergon Energy’s network was included in table 2.3.2. There were no augex projects on lines or cables operating at notional transmission voltages that closed during the year specified. ▪ Each row in table 2.3.2 represents data for all circuits of a given voltage subject to *augmentation* works under the Project ID. Where an augmentation project applied to two or more circuits of the same voltage, Ergon Energy entered data for all the circuits in one row. There were no projects identified where an augmentation project

Minimum Requirements	Ergon Energy Response
	applied to more than one circuits of different voltages. ▪ No subtransmission lines augmentation projects in table 2.3.2 are related to other projects, including other tables in template 2.3(a). ▪ The line ID's provided in table 2.3.2 are Ergon Energy's unique line identification numbers allocated within the Ellipse operating system. ▪ The primary trigger was selected within the drop down list provided. None of the projects listed in table 2.3.2 have any secondary triggers to be disclosed. Where 'Other – specify" were selected, the triggers are described in **Appendix A: Template 2.3 Table 2.3.2 Other – specify** ▪ "Km added" disclosed in table 2.3.2 is the gross addition of the relevant line or cable added as a result of the augmentation work and any line or cable removed was not netted off against the km's added. ▪ Ergon Energy only included procurement cost under 'Total expenditure' for poles/towers, including civil works. Installation costs have been reported separately in each table. ▪ Ergon Energy only included procurement cost under 'Total expenditure' for lines, cables and 'other plant item'. Installation costs have been reported separately in each table. ▪ Civil works expenditure related to poles/towers was not included under 'Total expenditure' for civil work, but included under Poles/Towers Expenditure. With regards to Land and Easements: ▪ Total direct expenditure does not include any expenditure for land purchases or easements. ▪ Ergon Energy did not record any land and easement projects and/or expenditure as separate line items in table 2.3.2. ▪ Ergon Energy input all expenditure directly attributable to the land purchase or easement compensation payments in the 'Land purchases' and 'Easements' columns, respectively, including legal, stamp duties and cost of purchase or easement compensation payments. Where contractor payments were not coded to the Land & Easement expense element, the costs were included under "Installation Labour" or "Other Plant".
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, for the following variables in Template 2.3(a), Table 2.3.2 which requires expenditure data on a project close basis , for all initial regulatory year (2017-18) .: ▪ Voltage (KV) ▪ Route line length added – KM added ▪ Poles/Towers added

Minimum Requirements	Ergon Energy Response
	▪ Poles/Towers upgraded ▪ Poles/Towers Expenditure ▪ Overhead lines – Circuit Km added ▪ Overhead lines – Circuit Km upgraded ▪ Overhead Lines Expenditure ▪ Underground cables – Circuit Km added ▪ Underground cables – Circuit Km upgraded ▪ Underground cables Expenditure ▪ Other Plant Expenditure ▪ Installation Volume ▪ Installation (Labour) Expenditure ▪ Civil Works Expenditure ▪ Other Direct Expenditure ▪ Years Incurred ▪ All Non Related Party Contracts ▪ Land Purchase ▪ Easements ▪ Non Material Projects – Total Direct Expenditure ▪ Non Material Projects – Years Incurred ▪ Non Material Projects – Land Purchase ▪ Non Material Projects – Easements The majority of augex projects incurred cost over more than one financial year and in some cases over a number of financial years. Projects with project closed dates within the reporting period (2017-18) would have had cost incurred before the reporting period (pre 2017-18), which was included in expenditure disclosed in table 2.3.2. Projects were included in table 2.3.2 only where the project close date occurred at any time in the year specified. Project close date (i.e. project finalisation date) is when all project costs have been recognised and reconciled, and not the date at which the project was put in service and capitalised. The project close date could differ from the project capitalisation date.
Source of Actual Information	Actual Information for the financial variables was sourced from Ergon Energy's Ellipse operating system.
Methodology and assumption's applied in relation to Actual	Report was run from the Ellipse operating system which listed all projects closed within regulatory year 2017 - 2018 under the Augex financial activity codes C2010, C2030, C2040 and C2050 – the

Minimum Requirements	Ergon Energy Response
Information	2018_MASTER_C2010_C2030_C2040_C2050 report, excluding costs relating to non-network assets identified as part of the annual performance RIN preparation. To exclude non-network costs, the proportion of total non-network assets to network assets based on actual ellipse data was used to estimate the non-network costs for each project type. The report included all Ergon Energy augex projects, not only those related to Subtransmission lines. The project list was filtered to include only those projects relating to Subtransmission lines by analysing the project j-codes (asset classification codes) and extracting Subtransmission line projects. The extracted line project list reported each project and their total cumulative expenditure over the life of the project, broken down by direct costs and overheads as well as their total annual expenditure as incurred (excluding overheads). Each project with a total (whole of life) expenditure of equal or greater than $5 million (nominal, inclusive of direct and overhead costs) was identified to be reported as a separate project in the RIN template. Those projects less than $5 million were labelled as a non-material project to be consolidated into a single subtransmission line item in table 2.3.2. The report also provided cost per project for the following expenditure categories: Materials, Contractor cost, Labour cost, Purchases, Stores, Other direct cost. Further detailed expenditure reports were run from Ellipse on each material project providing details of each expense booked to the project. In order to report the information in the required expense categories per table 2.3.2, Ergon Energy applied the following methodology and assumptions to the data presented in the 2018_MASTER_C2010_C2030_C2040_C2050 report: **Installation (Labour) Volume** was calculated as the sum of Total Labour Hours reported within Ellipse Fin 900h reports for each project. **Installation (Labour) Expenditure** was calculated as the Sum of Contractors and Labour as per the 2018_MASTER_C2010_C2030_C2040_C2050 report, less civil works labour and Contractor coded civil structure material costs) identified through detailed analysis of labour expenditure for each project. ▪ **Civil Works Expenditure** was identified and calculated reviewing individual project transaction reports (Ellipse Fin 900h reports) and identifying civil works transactions. No civil works expenditure was identified. **Poles/Towers Expenditure** was identified and calculated by reviewing individual project transaction reports (Ellipse Fin 900h reports) and identifying and totalling individual transactions under expense categories for “purchases’ and “contractors” that related to poles/towers and civil

Minimum Requirements	Ergon Energy Response
	works transactions. No Material projects identified had poles/towers expenditure identified. **Overhead Lines Expenditure** was identified and calculated by reviewing individual project transaction reports (Ellipse Fin 900h reports) and identifying and totalling individual transactions under expense categories for “purchases’ and “contractors” that related to overhead lines expenditure. No Material projects identified had overhead lines expenditure identified. **Underground cables Expenditure** was identified and calculated by reviewing individual project transaction reports (Ellipse Fin 900h reports) and identifying and totalling individual transactions under expense categories for “purchases’ and “contractors” that related to underground lines expenditure. **Other Plant Expenditure** was calculated as the Total Materials and Purchases as per the MASTER C2010_C2030_C2040_C2050 report, less Poles/Towers Expenditure, Overhead Lines Expenditure, Underground cables Expenditure. **Other Direct Expenditure** was calculated as the Total Other Costs as per the MASTER C2010_C2030_C2040_C2050 report, less the sum of Land and Easements. Total Other Cost as per MASTER C2010_C2030_C2040_C2050 report includes Land and Easement cost. Other Costs includes:- ▪ Capital Interest ▪ Computer ▪ Marketing ▪ Other ▪ Transport Internal ▪ Transport External ▪ Travel & Accommodation **Years Incurred** was sourced from the MASTER C2010_C2030_C2040_C2050 report. Projects reported in regulatory year 2018 are based on closure dates within this regulatory period, some projects will have incurred final costs in previous financial years. **Related Party Margins** is recorded as “zero”; Ergon Energy did not identify any Related Parties contract expenditure in relation to Augmentation projects. **All Non Related Party Contracts** is disclosed as the Total Contractors expenditure as per the MASTER C2010_C2030_C2040_C2050 report **Land Purchase and Easements** cost is included as Other Costs in the MASTER C2010_C2030_C2040_C2050 report. Land and Easement

Minimum Requirements	Ergon Energy Response
	cost was therefore calculated by running an Ellipse report for activities C2010, C2030, C2040 & C2050 by expense element 6160 (Easement/Land), the MASTER_Augex Account Codes_WO Txns with EE 6160 Report. This report provided the total land and easement cost per project. To split the cost between Land Purchase and Easements, we used the BPU apportionment for Land (L5) (percentage of project cost allocated to Land) and Easements (L9) (percentage of project cost allocated to Easement) from MASTER BPU Data report and applied this percentage to the total Land and Easement expenditure as per MASTER_Augex Account Codes_WO Txns with EE 6160 for each project and input as Land purchase or Easements in table 2.3.2. **Non Material Projects – Total Direct Expenditure** was sourced from the 2018_MASTER_C2010_C2030_C2040_C2050 report. The total cumulative expenditure (excluding overheads) over the life of the projects identified as non- material projects as per the 2018_MASTER_C2010_C2030_C2040_C2050 report was listed as Total Direct Expenditure for Non Material projects in table 2.3.2. **Non Material Projects – Years Incurred** was sourced from the 2018_MASTER_C2010_C2030_C2040_C2050 report. Projects reported in regulatory year 2017 are based on closure dates within this regulatory period, some projects will have incurred final costs in previous financial years. **Non Material Projects** - **Land Purchase and Easements** cost is included as Other Costs in the 2018_MASTER_C2010_C2030_C2040_C2050 report. Land and Easement cost was therefore calculated by running an Ellipse report for activities C2010,C2030,C2040 & C2050 by expense element 6160 (Easement/Land), the MASTER_Augex Account Codes_WO Txns with EE 6160 Report. This report provided the total land and easement cost per project. To split the cost between Land Purchase and Easements, we used the BPU apportionment for Land (L5) (percentage of project cost allocated to Land) and Easements (L9) (percentage of project cost allocated to Easement) from MASTER BPU Data report and applied this percentage to the total Land and Easement expenditure as per MASTER_Augex Account Codes_WO Txns with EE 6160 for each project and input as Land purchase or Easements in table 2.3.2. **Non-financial Variables** - The following actual Information for non-financial variables was sourced from “as built” schematics and relevant planning reports: ▪ Route line length added – KM added ▪ Poles/Towers added ▪ Poles/Towers upgraded ▪ Overhead lines – Circuit Km added ▪ Overhead lines – Circuit Km upgraded

Minimum Requirements	Ergon Energy Response
	▪ Underground cables – Circuit Km added ▪ Underground cables – Circuit Km upgraded ▪ Voltage (KV) **<u>Converting nominal to real values</u>** Ergon Energy has reported all expenditure data for augex in Table 2.3.2 in real $ 2017-18. Nominal dollars has been converted to real dollars using actual CPI rates (Dec-Dec for the weighted average of eight capital cities as published by the Australian Bureau of Statistics (ABS). The 2018_MASTER_C2010_C2030_C2040_C2050 report provided a split of total cumulative cost (excluding overheads) in nominal values for each year in which cost was incurred. Ergon Energy applied the relevant CPI rate for each specified year in which cost was incurred to convert the nominal values to real values. The following assumptions were applied in converting nominal values to real values: **Land & Easements –** The financial year in which land and easements costs were incurred was not specified within reporting data. The assumption that land and easement costs have been incurred first was applied to convert land and easement cost to real values. **Expenditure categories -** Cost incurred by financial year cannot be split by expense category. Total project cost nominal values per year incurred have therefore been converted to real values and total real values apportioned into expenditure categories based on the nominal values allocated to each expense category
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information.
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information.

Template 2.3(b) Augex

Table 2.3.3 Augex Asset Data – HV/LV Feeders and Distribution Substations

Table 2.3.3 Descriptor Metrics

Table 3: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.3(b) - Augex project data, Table 2.3.3 - Descriptor Metrics (units upgraded; added in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has only included projects and expenditure related to augmentation of the network (only projects under augmentation financial activity codes C2010, C2030, C2040 and C2050 have been reported), excluding costs relating to non-network assets identified as part of the annual reporting RIN preparation. To exclude non-network costs, the value of the non-network assets at the project level was deducted from the 2017/18 expenditure, after the total value had been initially recorded for reconciliation purposes. Ergon Energy has not included information for gifted assets, and no augmentation in relation to connections has been included in template 2.3(b). However, the value includes the cost of installing HV & LV reticulation assets associated with Street Lighting applications (Capital Activity C2120) Ergon Energy have considered and complied with clarifications provided by the AER on issues related to template 2.3(b) and relevant to Ergon Energy. With regards to instructions specific to Table 2.3.3 (on regulatory template 2.3(b)), Ergon Energy notes: ▪ Metrics relating to augmentation works on the specified types (overhead lines, underground cables) of ***HV feeders*** owned and operated by Ergon Energy undertaken at any time during the year specified have been reported, regardless of total spend. ▪ Metrics relating to augmentation works on the specified types (overhead lines, underground cables) of ***LV feeders*** owned and operated by Ergon Energy undertaken at any time during the year specified have been reported, regardless of total spend. ▪ Metrics relating to augmentation works on the specified types (pole mounted, ground mounted, indoor) of ***Distribution Substations***

Minimum Requirements	Ergon Energy Response
	owned and operated by Ergon Energy undertaken at any time during the year have been reported. ▪ For projects spanning across regulatory years, *'circuit km added'*, *'circuit km upgraded'* and 'Units" (Descriptor Metric) data was input according to the total expenditure incurred across all financial periods, only for projects that were completed in the 2017-18 financial year. ▪ It must be noted that the Descriptor Metric determination for 2018 was modified from previous methodology following Audit comment and review of the AER Regulatory Information Notice, in particular clause 7.6(c) *"For projects that span across regulatory year, input figures for 'Circuit km added' and 'Circuit km upgraded' columns according to the final year in which expenditure was incurred for the project"* In prior returns, Ergon Energy had submitted data based on **all** projects which incurred cost in the regulatory control period, regardless of status. The Circuit km added and Circuit km upgraded calculation was based on material issued in the relevant regulatory control period (2015 – 2020). The change in methodology has led to a significant decline in the Descriptor Metric data in both HV & LV Circuit km added and Circuit km upgraded due to the fact that approximately 70% of the projects identified as Augex Distribution remained open at the close of the regulatory period.
Population of Actual Information in templates	Ergon Energy has used Actual Information, in accordance with the AER's definition, for the following variables in Table 2.3.3 Descriptor Metrics: ▪ Units Added & Units Upgraded - Distribution Substation Augmentations – Pole Mounted; ▪ Units Added & Units Upgraded - Distribution Substation Augmentations – Ground Mounted; ▪ Units Added & Units Upgraded - Distribution Substation Augmentations – Indoor.
Source of Actual Information	Ergon Energy notes the source of Actual Information for the following variables: ▪ Distribution Substation Augmentations, both Units Added & Units Upgraded, was sourced from 2018 CA_Augex_RIN_Requisition _Data with introduced Distribution and Project Status Categories ; ▪ Raw conductor and cable acquisition (by metre) was sourced from 2018 CA_Augex_RIN_Requisition _Data.
Methodology and	In order to obtain the information, it was necessary for Ergon Energy to

Minimum Requirements	Ergon Energy Response
assumption's applied in relation to Actual Information	apply additional data qualifiers to the 2018_MASTER_C2010_C2030_C2040_C2050 report to allow identification of each parcel of works by Distribution categories in accordance with the requirements of Table 2.3.3 In doing so, it was assumed that: ▪ All Projects with Project Category (J2) Codes of either Subs-Sub-Transmission, Subs-Transmission, Lines-Sub-Transmission & Lines Transmission were outside the requirements of Table 2.3.3 and were eliminated from the reporting set. ▪ All projects where the primary Equipment Reference No had a 'GS' suffix, indicating a Generation Site, were eliminated from the reporting set, after verifying the scopes of a random selection of projects. ▪ Distribution Categories were identified from the reporting suite through the use of Project Category (J2) Codes Lines Distribution, Lines SWER, Subs Distribution and Subs SWER. ▪ Distribution Categories were validated through the use of Project Category (J3) Codes Overhead New, Upgrade or Replace; Underground New, Upgrade or Replace; Transformers New, Upgrade or Replace; Regulators New, Upgrade or Replace; SWER Isolators New, Upgrade or Replace; Steel Conductor New, Upgrade or Replace; Copper Conductor New, Upgrade or Replace; Services New, Upgrade or Replace ▪ Distribution Categories were validated through the use of Equipment Reference characteristics, such as: Equip ID Prefix SP = Substation Pole Mounted Equip ID Prefix GT = Ground Mounted Network Slot Equip ID Prefix AB = HV Isolating Device Network Slot ▪ Distribution Categories were validated through the use of Works Request Description Identifiers, such as: Reference to HV or HV Voltages (11, 22 & 33kV) Reference to SWER or SWER Voltages (12.7 & 19.1kV) Reference to LV or LV Voltages (0.240 & 0.415kV) Reference to ABC Installation (Arial Bunched Cable) Reference to UG or UG Assets (Padmount, RMU etc.) ▪ Following the application of Distribution categories through the above process, any uncategorised projects were categorised through a review of the individual scope of works within the Works Request data. ▪ Actual information for Land Purchase and Easements was sourced from MASTER_Augex Account Codes_WO Txns with EE 6160 Report. 2017/18 Data from the above report was imported into the 2018_2.3.3_Master_Final Worksheet summary and the Land Acquisition transactions associated solely with Work Requests classified as 2.3.3 identified. As expected, Distribution assets,

Minimum Requirements	Ergon Energy Response
	which are in the majority installed on Crown land, strung beneath sub-transmission assets on existing infrastructure in existing corridors or installed with the authority of the landholder by execution of a Wayleave, returned nominal values for land & easements either acquired or capitalised. ▪ Disparity of unit cost rate arises due to the following factors: ▪ Units added/upgraded are based on the actual date of material acquisition extracted from the 2018 MASTER RIN Reporting Requisitioning Data Report, whereas installation costs are on an as incurred basis and costs have in some cases material acquisition has occurred in a financial period prior to the current reporting period. ▪ Ergon Energy supply area covers 97% of the state of Queensland and as such, experiences geographical cost factors associated with the supply, transport & storage of materials at significant distance from logistic bases as well as an equally significant travel component for both internal & contract labour resources ▪ The process of determining feeder circuit length for Distribution works based on the actual length of conductor can be impacted by Ergon Energy's material ordering process, whereby all conductor is issued from Material Services by full drum only. Subsequent unused portions of conductor are returned for credit on completion of the project. For projects where the initial conductor requisition occurs in one financial year and the return of surplus in the following financial year the circuit length calculation is overstated in the year of issue and equally understated in the year of return. ▪ During 2017-18 Ergon Energy also undertook a number of Distribution projects which added no circuit length to the Distribution network and the associated expenditure is reported in the "Other Assets" data of Table 2.3.4
Population of Estimated Information in Templates	Ergon Energy has used Estimated Information in relation to: ▪ HV Feeder Augmentations – Overhead lines (circuit line length KM) added and upgraded. ▪ HV Feeder Augmentations – Underground cables (circuit line length KM) added and upgraded. ▪ LV Feeder Augmentations – Overhead lines (circuit line length KM) added and upgraded ▪ LV Feeder Augmentations – Underground cables (circuit line length KM) added and upgraded
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon	▪ It was not possible to use Actual Information, and an estimate is required in relation to HV & LV Feeder Augmentations, both Overhead Lines & Underground Cable Circuit Line Length km because no record of circuit length is maintained in alignment with individual projects and the associated expenditure.

Minimum Requirements	Ergon Energy Response
Energy's best estimates.	▪ Ergon Energy has determined and proposed the following process changes to be made to be able to record and report actual data: ▪ Project Sponsors would need to determine the actual circuit length added or upgraded as part of the scope of works for each project raised through the use of a spatial system such as Smallworld or Google Earth; and ▪ The data would be captured in Ellipse on the Work Request in order to be reported in direct correlation to the project financial data. Trial of GIS Data extracts have been initiated, however initial results have not been able to be timestamped relative to the construction date and data is returned for all financial periods for a given project, in lieu of the current reporting period only ▪ Ergon Energy has approved the funding for a project to develop and implement the required process changes to ensure actual data is reported by 2020-21 reporting period.
How Estimated Information has been produced.	HV & LV Feeder Augmentations, both Overhead Lines & Underground Cable Circuit Line Length km. In relation to Circuit Line Length km, Ergon Energy has developed an estimate based on the following approach: ▪ Ergon Energy assumed that an average circuit line length was determined based on type of cable or conductor and the required metre of conductor span or underground cable required per circuit km as set out in Stock Section 10 Code tables Ergon Energy considers that the best estimate has been provided for HV & LV Feeder Augmentations, both Overhead Lines & Underground Cable Circuit Line Length km on the basis that there was no real data captured.

Table 2.3.3 Cost Metrics (Expenditure)

Table 4: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.3(b) - Augex project data, Table 2.3.3 - Cost Metrics (expenditure) in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has only included projects and expenditure related to augmentation of the network (only projects under augmentation financial activity codes C2010, C2030, C2040 and C2050 have been reported), excluding costs relating to non-network assets identified as

Minimum Requirements	Ergon Energy Response
	part of the annual reporting RIN preparation. To exclude non-network costs, the value of the non-network assets at the project level was deducted from the 2017/18 expenditure, after the total value had been initially recorded for reconciliation purposes. Ergon Energy has not included information for gifted assets, and no augmentation in relation to connections has been included in template 2.3(b). However, the value includes the cost of installing HV & LV reticulation assets associated with Street Lighting applications. Ergon Energy have considered and complied with clarifications provided by the AER on issues related to template 2.3(b) and relevant to Ergon Energy. With regards to instructions specific to Table 2.3.3 (on regulatory template 2.3(b)), Ergon Energy notes: ▪ Expenditure on augmentation works on the specified types (overhead lines, underground cables) of ***HV feeders*** owned and operated by Ergon Energy undertaken at any time during the year specified for projects with a cumulative or estimated expenditure over the life of the project greater than or equal to $0.5 million (nominal), have been reported. Works on HV Feeders for projects with less than $0.5 million nominal expenditure over the life of the project have been consolidated into the Non-material projects row of the table. ▪ Expenditure on augmentation works on the specified types (overhead lines, underground cables) of ***LV feeders*** owned and operated by Ergon Energy undertaken at any time during the year specified for projects with a cumulative or estimated expenditure over the life of the project greater than or equal to $50,000 (nominal), have been reported. Works on LV Feeders for projects with less than $50,000 nominal expenditure over the life of the project have been consolidated into the Non-Material Projects row of the table. ▪ Expenditure on augmentation works on the specified types (pole mounted, ground mounted, indoor) of ***Distribution Substations*** owned and operated by Ergon Energy undertaken at any time during the years have been reported. ▪ Projects were included for augmentation and the addition of equipment on HV Feeders, LV Feeders and Distribution substations i.e. monitoring and communication equipment under table 2.3.3 Cost Metrics, even though there were no additional HV Feeders, LV Feeders and distributions substations units added (circuit length kms). Expenditure has been recorded on an 'as incurred' basis in nominal dollars' ▪ Expenditure related to land purchases and easements is not included in the 'Total Direct Expenditure' column. Land purchases and easements expenditure related to augmentation works on all ***HV feeders, LV Feeders*** or ***Distribution Substations*** owned and

Minimum Requirements	Ergon Energy Response
	operated by Ergon Energy are input in table 2.3.3.
Population of Actual Information in templates	Ergon Energy has used Actual Information, in accordance with the AER's definition, for all variables in Table 2.3.3 Cost Metrics for the period 2017-18.
Source of Actual Information	Actual Information for Total Direct Expenditure was sourced from 2018_MASTER_C2010_C2030_C2040_C2050 report, an extract from the Ellipse financial database of all Capital Works expenditure by cost category and financial year which was funded through Activity C2010, C2030, C2040 and C2050 (Augmentation).
Methodology and assumption's applied in relation to Actual Information	In order to obtain the information, it was necessary for Ergon Energy to apply additional data qualifiers to the 2018_MASTER_C2010_C2030_C2040_C2050 report to allow identification of each parcel of works by Distribution categories in accordance with the requirements of Table 2.3.3 In doing so, it was assumed that: ▪ All Projects with Project Category (J2) Codes of either Subs-Sub-Transmission, Subs-Transmission, Lines-Sub-Transmission & Lines Transmission were outside the requirements of Table 2.3.3 and were eliminated from the reporting set. ▪ All projects where the primary Equipment Reference No had a 'GS' suffix, indicating a Generation Site, were eliminated from the reporting set, after verifying the scopes of a random selection of projects. ▪ Distribution Categories were identified from the reporting suite through the use of Project Category (J2) Codes Lines Distribution, Lines SWER, Subs Distribution and Subs SWER. ▪ Distribution Categories were further identified through the use of Project Category (J3) Codes Overhead New, Upgrade or Replace; Underground New, Upgrade or Replace; Transformers New, Upgrade or Replace; Regulators New, Upgrade or Replace; SWER Isolators New, Upgrade or Replace; Steel Conductor New, Upgrade or Replace; Copper Conductor New, Upgrade or Replace; Services New, Upgrade or Replace ▪ Distribution Categories were further identified through the use of Equipment Reference characteristics, such as: Equip ID Prefix SP = Substation Pole Mounted Equip ID Prefix GT = Ground Mounted Network Slot Equip ID Prefix AB = HV Isolating Device Network Slot ▪ Distribution Categories were further identified through the use of Works Request Description Identifiers, such as: Reference to HV or HV Voltages (11, 22 & 33kV) Reference to SWER or SWER Voltages (12.7 & 19.1kV) Reference to LV or LV Voltages (0.240 & 0.415kV) Reference to ABC Installation (Arial Bunched Cable)

Minimum Requirements	Ergon Energy Response
	Reference to UG or UG Assets (Padmount, RMU etc.) ▪ Following the application of Distribution categories via the above process, any uncategorised projects were determined through a review of the individual scope of works within the Works Request data. ▪ Actual information for Land Purchase and Easements was sourced from MASTER_Augex Account Codes_WO Txns with EE 6160 Report. 2017/18 Data from the above report was imported into the 2018_2.3.3_Master_Final Worksheet summary and the Land Acquisition transactions associated solely with Work Requests classified as 2.3.3 identified. As expected, Distribution assets, which are in the majority installed on Crown land, strung beneath sub-transmission assets on existing infrastructure in existing corridors or installed with the authority of the landholder by execution of a Wayleave, returned nominal values for land & easements either acquired or capitalised. ▪ Disparity of unit cost rate arises due to the following factors: ▪ Units added/upgraded are based on the actual date of material acquisition extracted from the MASTER RIN Reporting Requisitioning Data Report, whereas installation costs are on an as incurred basis and costs have in some cases rolled over to the following financial period. ▪ Ergon Energy supply area covers 97% of the state of Queensland and as such, experiences geographical cost factors associated with the supply, transport & storage of materials at significant distance from logistic bases as well as an equally significant travel component for both internal & contract labour resources ▪ The process of determining feeder circuit length for Distribution works based on the actual length of conductor can be impacted by Ergon Energy's material ordering process, whereby all conductor is issued from Material Services by full drum only. Subsequent unused portions of conductor are returned for credit on completion of the project. For projects where the initial conductor requisition occurs in one financial year and the return of surplus in the following financial year the circuit length calculation is overstated in the year of issue and equally understated in the year of return. ▪ During 2017-18 Ergon Energy also undertook a number of Distribution projects which added no circuit length to the Distribution network and the associated expenditure is reported in the "Other Assets" data of Table 2.3.4
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons	Not applicable. Ergon Energy has provided Actual Information.

Minimum Requirements	Ergon Energy Response
why Estimates are Ergon Energy's best estimates.	
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information.

Table 2.3.4 Augex Asset Data – Total Expenditure

Table 5: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.3(b), Table 2.3.4 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has only included projects and expenditure related to augmentation of the network (only projects under augmentation financial activity codes C2010, C2030, C2040 and C2050 have been reported). Ergon Energy has not included information for gifted assets, and no augmentation expenditure in relation to connections has been included in template 2.3(b). However, the value includes the cost of installing HV & LV reticulation assets associated with Street Lighting applications Total augmentation expenditure has been input for each asset group split by the groupings specified by the table. Expenditure has been recorded on an 'as incurred' basis in nominal dollars'. Expenditure inputted under the 'land and easements' rows are mutually exclusive from expenditure that appears in the rows for the corresponding asset group. In regards to requirements in paragraph 7.7(b) Ergon Energy provides the following explanation in relation to reconciling the expenditure in Table 2.3.4 to the sum of the asset group augmentation expenditures in Table 2.3.1 (Subtransmission substations, switching stations, zone substations) and Table 2.3.2 (Subtransmission Lines) and Table 2.3.3 (HV/LV Feeders and Distribution Substations): ▪ The data sources for information disclosed in tables 2.3.1, 2.3.2, 2.3.3 Cost Metrics and 2.3.4 are identical, being the 2018_MASTER_C2010_C2030_C2040_C2050 report from the Ellipse operating system. The base data used for all tables will therefore reconcile, However, due to the inconsistencies in the basis of preparation and disclosure requirements, the following will apply to tables 2.3.1 and 2.3.2:

Minimum Requirements	Ergon Energy Response
	▪ Projects listed in Table 2.3.1 and Table 2.3.2 are disclosed on a project closed basis and projects included in Table 2.3.4 are disclosed on a cost incurred basis. ▪ Ergon Energy has reported all expenditure data for augex in Table 2.3.1 and Table 2.3.2 in real $2017-18 as required by the Principles and Requirements in the Category Analysis RIN and expenditure data for Table 2.3.4 in nominal dollars. ▪ The majority of augex projects listed in Table 2.3.1 and Table 2.3.2 incurred cost over more than one financial year and in some cases over a number of financial years. ▪ Projects with close dates within the reporting period (2017-18) and disclosed in Table 2.3.1 and Table 2.3.2 would have had cost incurred before the reporting period (pre-2017-18). This cost incurred before 2017-18 is not reported in Table 2.3.4 expenditures, as the cost did not incur within the reporting period (2017-18). ▪ Opposite to this, projects and the associated cost may have been reported in Table 2.3.4 in the year it incurred, but not reported in Tables 2.3.1 and 2.3.2 given the projects were not finalised and closed within the reporting years. ▪ Expenditure reported in Table 2.3.3 Cost Metrics reconciles to expenditure disclosed in Table 2.3.4 for HV Feeders, LV Feeders, Distribution Substations, HV Feeders – Land purchases and Easements, LV Feeders – Land purchases and Easements and Distribution Substations – Land purchases and Easements, as the basis of preparation and data sources are identical.
Population of Actual Information in templates	Ergon Energy has used Actual Information, in accordance with the AER's definition for all variables in Table 2.3.4 for the period 2017-18.
Source of Actual Information	Actual Information for Total Expenditure was sourced from 2018_MASTER_C2010_C2030_C2040_C2050 report, an extract from the Ellipse financial database of all Capital Works expenditure by cost category & financial year which was funded through Activities C2010, C2030, C2040 and C2050 (Augmentation).
Methodology and assumption's applied in relation to Actual Information	Data disclosed in Table 2.3.4 was sourced from the 2018_MASTER_C2010_C2030_C2040_C2050 report and reported as appearing on the reports without making any assumptions or adjustments to the data. HV Feeders – Land purchases and Easements, LV Feeders – Land purchases and Easements and Distribution Substations – Land purchases and Easements are reported at nominal values. Distribution assets are, in the main, placed within the road reserve and as such do not require land or easement acquisitions. Where distribution assets cross private property Ergon Energy takes Wayleave Agreements from the property owners, which are binding on subsequent owners, giving Ergon Energy the right to access and maintain the distribution assets without the need to acquire land.

Minimum Requirements	Ergon Energy Response
	Projects under activity codes C2010, C2030, C2040 and C2050 that relates to augmentation, excluding costs relating to non-network assets identified as part of the annual performance RIN preparation, but could not be classified under the specified asset categories of subtransmission substations, switching stations, zone substations, subtransmission Lines, HV/LV feeders and distribution substations was disclosed as “other assets” in table 2.3.4. To exclude non-network costs, the proportion of total non-network assets to network assets based on actual ellipse data was used to estimate the non-network costs for each project type.
Population of Estimated Information in Templates	Ergon Energy has not provided estimated information in relation to Table 2.3.4.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has not provided estimated information in relation to Table 2.3.4.
How Estimated Information has been produced.	Not applicable. Ergon Energy has not provided estimated information in relation to Table 2.3.4.

Appendix A: Template 2.3 Table 2.3.1 (*Other – specify)*

Substation ID	Project Number	*Project Type*	Project Trigger	Reason for choosing "Other"	Additional comments

Category Analysis RIN Basis of Preparation

Template 2.5 Connections

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.5 Connections of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.5 Connections (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.5 Connections (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.5 Connections, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- The basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirement(s) were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au

Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 2.5 Connections

Table 2.5.1 - Descriptor Metrics

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.5, Table 2.5.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. As advised by the AER, Ergon Energy has not had regard to paragraph 9.1 of the AER's Principles and Requirements in Appendix E, which is noted as not being relevant to preparation of a response to a non-Reset RIN. In completing the template, Ergon Energy has not distinguished expenditure between Standard and Alternative Control Services (ACS). Similarly, Ergon Energy has not distinguished between capex or opex. Furthermore, costs have been measured as the direct cost, excluding overheads. This is in accordance with clauses 9.2 and 9.3 of the RIN Appendix E Principles and Requirements for Template 2.5. Ergon Energy has reported expenditure data as a gross amount, that is to say, customer contributions have not been subtracted from expenditure. Data has not been reported in relation to gifted assets, or connection services which have been classified as contestable by the AER. Rather, information relates only to non-contestable, regulated connection services, including works performed by third parties on behalf of Ergon Energy. This does not include: ▪ Contestable customers which included work undertaken by third parties engaged by customers; ▪ Net costs on jobs that had received a gift (the costs for these jobs excludes the value of the gift); and ▪ Negotiated connection services For augmentation metrics, the 'km added' reported refers to the net addition of circuit line length resulting from augmentation work of complex connections. The definition for complex connections has been referred to in this regard, and for other metrics as relevant. Only augmentation for connections relating to customer connection requests (as per the defined term for connection expenditure) has been

Minimum Requirements	Ergon Energy Response
	reported in Template 2.5. That is, no double counting in reporting of augmentation expenditure has occurred between Template 2.5 (Connections) and Template 2.3 (Augex). *MVA added* for distribution substations installed for connection services is a view of Smallworld (GIS System) data. It is the MVA associated with the transformers added to the Network for that design. Data which has been reported for Residential Customer connections relates to connecting customers who purchase energy principally for personal, household or domestic use at their premises. For completeness Ergon Energy has included rural customers within the scope of this definition. Unless explicitly stated as not being provided fields with no value entered should be considered as having no expenditure or units in the relevant year
Population of Actual Information in templates	Ergon Energy has provided Actual Information, by extracting information directly from Ergon Energy's information systems (listed in the next section), in accordance with the AER's definition, to develop the following required variables in Table 2.5.1 for 2017-18, for both financial and non-financial information: ▪ Underground and Overhead Connections ▪ Distribution Substation installed – MVA added ▪ Distribution substations installed – quantity ▪ Augmentation HV – net circuit km added ▪ Augmentation HV – total spend $0's ▪ Augmentation LV – net circuit km added ▪ Augmentation LV – total spend $0's ▪ Distribution substation installed – total spend 0's ▪ Mean Days to Connect Customers (Residential) ▪ Overhead lots ▪ Underground lots ▪ Cost per lot ($) ▪ GSL Breaches (Residential) ▪ Customer Complaints (Residential) ▪ GSL Payments (Residential)
Source of Actual Information	The PEACE Customer Information System (CIS) was used to provide: ▪ Underground and Overhead Connections ▪ Mean Days to Connect Customers (Residential) The Smallworld Geographical Information System (GIS) was used to

Minimum Requirements	Ergon Energy Response
	provide: ▪ Distribution Substation installed – MVA added ▪ Distribution substations installed – quantity ▪ Augmentation HV – net circuit km added ▪ Augmentation LV – net circuit km added The Ellipse Enterprise Resource Planning (ERP) system was used to provide: ▪ Augmentation HV – total spend $0's ▪ Augmentation LV – total spend $0's ▪ Distribution substation installed – total spend 0's ▪ Overhead lots ▪ Underground lots ▪ Cost per lot ($) Cherwell was used to provide: ▪ GSL Breaches (Residential) ▪ GSL Payments (Residential) ▪ Customer Complaints (Residential)
Methodology applied in relation to Actual Information	In order to obtain the information, Ergon Energy applied the following methodology: Customer requests for customer projects including subdivision development, connection or modification to existing connections are recorded within the Ellipse and PEACE systems. PEACE holds details related to physical premise connection and/or modification, whilst Ellipse stores both subdivision and customer project details related to provision of a "point of supply". This initial data set (from both Ellipse and PEACE) assists with identification of a complete set of individual connection events active within the designated period. This provides the basis for extracting the associated attributes from other source systems to categorise each connection event as required. DMK213- NC & AA Service Orders vs Internal SLA Report was used. <u>System Attributes & Categorisation</u> PEACE records data in categories with associated classes/subclasses that define the nature of the connection. Costs are either capitalised or expensed depending on the class/subclass type. The classes/subclasses listed below form the basis of the data extracted/reported as follows ▪ New Connections (NC & SSWNC) - Capitalised

Minimum Requirements	Ergon Energy Response

- Permanent Large NMI (PL)
- Permanent Small NMI (PM)
- Temporary Permanent Large NMI (IL)
- Temporary Permanent Small NMI (IP)

- New Connections (NC) - Expensed
  - Temporary Large NMI (TL)
  - Temporary Small NMI (TM)

- Adds and Alterations (AA) - Expensed
  - Install Controlled Load (CL)
  - Install Hot Water (HW)
  - Service Upgrade (SU)
  - Solar PV (PV)
  - AA Dispatch (IM)
  - Basic AA Connect (AA)

Unmetered Supplies (UM) are additionally extracted but are excluded from template 2.5 in line with the requirements described in the Regulatory Information Notice.

Each connection event is associated with a National Metering Identifier (NMI) which records categorisation details as follows:

- Business or Residential
- Underground or Overhead
- Phases
- Low or High Voltage connection

Where phase data is missing from the NMI we have sourced this data from the “Form2’ data submitted by the customer/contractor where this is available.

Solar PV connections are logged as “Adds and Alterations” (AA) with a subclass of “’Solar PV” (PV) as defined above. This subset of events (AA PV) is used to both identify and provide data for the Embedded Generation category.

Generically Ergon Energy connects customers to the distribution network based on a request from a Retailer. This request is stored in a Service Order within PEACE that is associated with the contractor’s/customer’s request for connection or alteration. The Service Order records the logged date of the Retailer’s request and the logged completion date. The Service Order additionally identifies the Work Order (in the Ellipse ERP system) that was used to record the costs with completing the connection.

Connection counts (which exclude unmetered supplies as per the definition of a commercial/industrial customer connection) are determined for those events that were completed within the designated period.

The completion duration of the connection is calculated as the

Minimum Requirements	Ergon Energy Response
	difference between the Obligation Start Date to Completion date The population of the template item – "mean days to connect residential customer with LV single phase connection" – is achieved by identifying the connection events that satisfy the constraints required; specifically as residential, single phase and LV connection; and calculating the average duration. Customer projects related to the modification to, or establishment of a point of supply, are recorded within Ellipse with each project assigned a unique Work Request number. Ergon Energy utilises two business models for customer projects which involve making offers to customers and agreeing commercial terms prior to undertaking the works required. ▪ Smaller low risk projects are managed by the Southern and Northern Connections Teams within Connection Solutions. ▪ Large complex projects are managed by the Major Customers Team within Connections Solutions. Projects are selected for inclusion in the template on the basis that they satisfy one or more of the following: ▪ Have incurred cost during the designated period ▪ Are associated with a physical premise connection request (PEACE EVENT) ▪ Are associated with Smallworld data that has been added to the network during the designated period ▪ The supply available date for Subdivision projects falls within the designated period For Southern and Northern Connections projects referential information is associated with each work request which allows determination of: ▪ The project category as either residential, commercial/industrial, subdivision or embedded generation ▪ The number of lots (overhead or underground) for subdivision projects ▪ The date the customer accepted the offer ▪ The date the supply was made available. Counts of subdivision lots were determined by identifying the subdivision projects and counting lots when supply was made available during the designated period. The average cost per lot was determined by dividing Ergon Energy's total costs incurred in the delivery of gifted and non-gifted subdivisions (upstream, reticulation development and test and commissioning) by the lots identified as having supply made available during the designated period. As clarified by the AER (email dated 05/09/2017) we have excluded gifted asset costs but included gifted asset volumes as part of this

Minimum Requirements	Ergon Energy Response
	calculation. This meant that 3,199 lots developed under Ergon Energy's Developer Design and Construct model as a gifted asset were excluded from the calculation. This resulted in an escalated average cost of $1,763/lot. Noted that this was the way this was calculated for the 2016/17 and 2017/18 years, but not for years prior to this. Projects managed by the Major Customers Team do not store referential data within Ellipse. The following data has been manually loaded to the template after review of each project's data and other information held in the PC based system 'Salesforce' by the Major Customers Team: ▪ Project category – commercial/industrial, embedded generation etc ▪ Template 2.5.2 project categorisation ▪ Date offer accepted ▪ Supply available date Kilometres of cable, transformer counts and MVA added are sourced from the Smallworld GIS computer system using the project's work request to associate data. Smallworld data is included when the energisation date or completed date falls within the designated period. Financial data related to HV, LV and Transformers is directly sourced from the General Ledger module of the Ellipse computer system by extracting transactions whose posting date falls within the designated period. Costs are associated by using either the work request or work order associated with the particular connection event under consideration. Transactional costs are converted to the RIN requirements by using the methodology used within Ergon Energy to capitalise projects. Each project is assigned a number of Property Unit codes and percentages. These codes have been mapped to the RIN categories of HV, LV or Transformer allowing calculation of the respective values. **Non-Financial Metrics – Residential GSL Breaches, Customer Complaints** Volume of GSL breaches is a count of approved "Connection of Supply" GSL claims recorded in the GSL Report application. Number of residential complaints has been sourced directly from Cherwell application which is an enterprise system. The number provided is a count of residential complaints with a feedback class of either "SUPPLY - NEW SERVICE/EXTENSION" or "MAJOR CUSTOMER CONNECTION" Note: In previous years, complaints were reported as combined residential and commercial. For 2017-18 the data has aligned to the template to be residential only.

Minimum Requirements	Ergon Energy Response
	GSL Payments GSL payments are a summation of payment amounts for approved "Connection of Supply" GSL claims recorded in the Cherwell application.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
Source of Estimated Information	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 2.5.2 - Cost Metrics by Connection Classification (Volumes and Expenditure)

Table 2: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.5, Table 2.5.2 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. In completing the template, Ergon Energy has not distinguished expenditure between Standard Control Services or ACS. Similarly, Ergon Energy has not distinguished between capex or opex. Furthermore, costs have been measured as the direct cost, excluding overheads. Ergon Energy has reported expenditure data as a gross amount, that is to say, customer contributions have not been subtracted from

Minimum Requirements	Ergon Energy Response
	expenditure. Data has not been reported in relation to gifted assets, or connection services which have been classified as contestable by the AER. Data relates only to non-contestable, regulated connection services, including works performed by third parties on behalf of Ergon Energy. Ergon Energy does not have negotiated services; therefore no metrics are included in this regard. The definition for complex connections has been referred to in relation to cost and descriptor metrics as relevant. Only augmentation for connections relating to customer connection requests (as per the defined term for connection expenditure) has been reported in Template 2.5. That is, no double counting in reporting of augmentation expenditure has occurred between Template 2.5 (Connections) and Template 2.3 (Augex). Data which has been reported for Residential Customer connections relates to connecting customers who purchase energy principally for personal, household or domestic use at their premises. For completeness Ergon Energy has included rural customers within the scope of this definition.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, by extracting information directly from Ergon Energy's computer systems, in accordance with the AER's definition, for all variables in Table 2.5.2 for both financial and non-financial: ▪ Residential Simple connection LV ($0 & 0's) ▪ Residential Complex connection LV ($0 & 0's) ▪ Residential Complex connection HV ($0 & 0's) ▪ Commercial/Industrial Simple connection LV ($0 & 0's) ▪ Commercial/Industrial Complex connection HV (customer connected at LV, minor HV works) ($0 & 0's) ▪ Commercial/Industrial complex connection HV (customer connected at LV, upstream asset works) ($0 & 0's) ▪ Commercial/Industrial Complex connection HV (customer Connected at HV) ($0 & 0's) ▪ Commercial/Industrial Complex connection sub-transmission ($0 & 0's) ▪ Subdivision Complex connection LV ($0 & 0's) ▪ Subdivision Complex connection HV (no upstream asset works) ($0 & 0's) ▪ Subdivision Complex connection HV (with upstream asset works) ($0 & 0's) ▪ Embedded generation Simple connection LV ($0 & 0's)

Minimum Requirements	Ergon Energy Response
	▪ Embedded generation Complex connection HV (Small Capacity) ($0 & 0's) ▪ Embedded generation Complex connection HV (Large Capacity) ($0 & 0's)
Source of Actual Information	The financial and non financial data extablished for provision of Table 2.5.1
Methodology applied in relation to Actual Information	Each connection event identified to provide the financial and non financial data for Table 2.5.1 has been assigned a categorisation attribute consistent with the sub categories specified for Table 2.5.2. The assignment of this category is based on the application of the following rules: **For Peace and Connections Team records** **Residential** ▪ If the event has any capital HV costs and/or Transformer costs or Smallworld HV cable additions and/or Smallworld Transfomer additions related to a point of supply it is assigned to "Complex Connection HV" ▪ If the event only has capital LV costs or Smallworld LV cable for related to a point of supply it is assigned to "Complex Connection LV" ▪ If the event only relates to a final premise connection it is assigned to "Simple Connection LV" **Embedded Generation** ▪ If the event has a Connections Team capital cost (LV, HV or Transformer) or Smallworld (LV, HV or Transformer) additions related to a point of supply it is assigned to - "Complex Connection HV (Small Capacity)" ▪ If the event only relates to a final premise connection it is assigned to - "Simple Connection LV" Note: we have determined that anything more complicated won't exist as a Connections Team project but will be identified as Major Customers. **Commercial/Industrial** ▪ If the event has Smallworld Transmission additions it is assigned to - "Complex Connection Sub-transmission" ▪ If the NMI associated with the event is identified as a HV connection the event is assigned to - "Complex Connection HV (customer connected at HV)" ▪ If the event has HV and transformer (capital costs and/or Smallworld additions) and number of transformers added is > 1

Minimum Requirements	Ergon Energy Response
	related to the point of supply it is assigned to - "Complex connection HV (customer connected at LV, upstream asset works)" ▪ If the event has s a capital HV cost or Smallworld HV cable addition related to the the point of supply it is assigned to - "Complex connection HV (customer connected at LV, minor HV works)" ▪ If the event does not have a capital HV cost or Smallworld HV cable addition related to the the point of supply or only relates to a final premise connection it is assigned to - "Simple Connection LV" **Plus for Connections Team projects only** **Subdivision** ▪ If the project is being delivered under Ergon's Developer Design and Construct (DDAC) model and there are capital HV or transformer costs and/or Smallworld HV cable additons or Transformer additons they must relate to the provisioning the point of supply and relate to upsteam works. It is assigned to - "Complex connection HV (with upstream asset works)" ▪ If the project is not being delivered under Ergon's Developer Design and Construct (DDAC) model and there are capital HV or transformer costs and/or Smallworld HV cable additions or Transformer additions consequently we can not determine if these relate to upstream works or the subdivision itself. In this case the event is identied for manual "Review" ▪ If the event has no capital HV or transformer costs and/or Smallworld HV cable additions or Transformer additions it is assigned to – "Complex Connection LV" Where the outcome of the assignment is "Review" the identified records have been manually reviewed by stakeholders and the 2.5.2 category manually assigned and loaded to the template. **Major Customer projects** Projects managed by the Major Customer Team do not store referential data within Ellipse. The template 2.5.2 project categorisation has been assigned and manually loaded to the template after review of each project's data and other information by the MCG. **Volume Data** Volume data is determined by counting the connection events within each category as defined by the above methodology. It should be noted that the volumes reported will not reconcile to the connection counts reported in template 2.5.1 owing to • The 2.5.1 connection counts reflecting premise connection events that have completed within the designated period being reported whereas • The volumes reported include all events regardless of the

Minimum Requirements	Ergon Energy Response
	completion status of connections and additionally includes the counts of projects related to point of supply provisions, modifications and other connection events that contribute financially to the both the 2.5.1 and 2.5.2 templates.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Category Analysis RIN Basis of Preparation

Template 2.6 Non Network

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.6 Non Network of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.6 Non Network (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.6 Non Network , Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.6 Non Network (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should now be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 2.6 Non Network

Table 2.6.1 Non-Network Expenditure

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.6, Table 2.6.1 Non Network Expenditure in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. In completing Table 2.6.1 – Non-Network Expenditure, Ergon Energy notes that: ▪ Ergon Energy has reported Non Network expenditure in relation to standard control services (SCS) only. ▪ Ergon Energy has inserted additional *"asset categories"* under the *"service subcategory"* to represent office furniture and equipment, plant and equipment, crane borer plant HCV, Refurbishment/Rebuilt EWP(HCV) and other fleet assets. These *"asset categories"* were added as they have incurred $1 million or more (nominal) in capital expenditure (capex) in the regulatory year; ▪ Ergon Energy has included the replacement, installation, operation and maintenance of non-network buildings, fittings and fixtures in non-network buildings and property expenditure. This includes expenditure related to real chattels; ▪ Ergon Energy has included expenditure related personal chattels (e.g. furniture) under Non-network Office Furniture & Equipment. ▪ Ergon Energy has included in non-network IT and communication expenditure, costs associated with: o SCADA and Network Control that exist at the Corporate office side of gateway devices; o IT & Communications related to management, dispatching and coordination, etc. of network work crews; o Common costs shared between the SCADA and Network Control Expenditure and IT & Communications Expenditure categories with no dominant driver related to either of these expenditure categories; and o Network metering recording and storage at non network sites. ▪ Ergon Energy has reported all expenditure directly attributable to Motor Vehicles including: purchase, replacement, operation and maintenance of motor vehicles assets registered for use on public roads, excluding plant and equipment. Depreciation has been

Minimum Requirements	Ergon Energy Response
	excluded as it does not meet the definition of Operating Expenditure (opex). ▪ Ergon Energy has included all expenditure directly attributable to the replacement, installation, maintenance and operation of Non-network assets in non-network other expenditure. This includes: o non road registered motor vehicles; non road motor vehicles; o mobile plant and equipment; tools; trailers (road registered or not); o elevating work platforms not permanently mounted on motor vehicles; and o Small Trailer Mounted Mobile Generators (Excludes Trailer Mounted Network Generators and Mobile Substations)
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, for Table 2.6.1 for: ▪ Buildings and Property; ▪ IT and Communications; ▪ Motor vehicles; ▪ Office furniture and equipment; ▪ Plant and Equipment; ▪ Crane Borer Plant HCV; ▪ Other fleet assets; and ▪ Other expenditure. ▪ Refurbishment/Rebuild EWP(HCV)
Source of Actual Information	Actual Information for the variables was sourced from Ergon Energy's ERP – Ellipse.
Methodology and assumption's applied in relation to Actual Information	Data was sourced from Ergon Energy's ERP – Ellipse via an Expenditure Report which requests several inputs: Responsibility Centre/s (RC), Activity Code/s, and Period of inquiry. The RC and Activity is based on Ergon Energy's Chart of Accounts from which actual expenditure is reported against. The output is itemised lines of expenditure data listed against an account code and where administered as such, the work order number and respective details are given (equipment ID, work category, workgroup etc.). The Capex and Opex figures have been determined as follows. ***BUILDING AND PROPERTY*** ***CAPEX***: Buildings and Property Capex is extracted from Ergon Energy's ERP – Ellipse Project Accounting module and analysed to identify the type of

Minimum Requirements	Ergon Energy Response
	asset purchased / constructed. The data is filtered to exclude Expense Elements 5000 – *Capitalisation*, and EE 8100 – *Business Overheads*. The first of these is excluded as it relates to credits which hit the GL account once a capital expenditure is 'capitalised' and begins its depreciation process. The later expense element is excluded as this represents the application of corporate overheads against capex rather than a cost directly attributable to Buildings and Property. Line items were reviewed and where expenditure related personal chattels (e.g. furniture) they were reported under Non-network Other expenditure – Furniture & Fittings. The Buildings and Property Capex numbers in table 2.6.1 of the RIN are the cumulative sum of the twelve months for the regulatory (financial) year. ***OPEX:*** It was assumed that all Buildings and Property Opex is recorded against the Property Services current responsibility centres and Activities 63900, 63910, 63920, 63930 and 62500 as detailed in the Chart of Accounts through running the OMD Expenditure Report. ▪ RC1250 is named Planning, Strategy and Performance and is a support function for the RC's 1260 (Property Services – Facilities) and RC1300 (Property Asset Management). Activities 63900-63930 are described as Property Services (Maintenance & Non-maintenance), while 62500 is Business Support Services and relates to the support related functions for the delivery of direct services. ▪ Data is filtered to exclude Expense Elements 5000 – Capitalisation, and Expense Element 8100 – Business Overheads. ▪ The data was also filtered based on the equipment reference. Historically, some expenditure under these RC and Activities has been fully attributable to non-regulated assets and non-standard control services. Where equipment references (or their child assets) are identified as: CAHA (Non-regulated Cairns site), TIPO (Thursday Island Office) & TIRI/ TIDE (Thursday Island Depot), these costs were excluded. There are some (minimal) expenditure line items which are listed with the above RC and activities and are reported against a network or fleet related asset. These items were identified by the Equip Reference field. These assets are not non-network property assets, but Opex has been spent against them in the context of Property based expenditure (or on-charged). These items remain in the data and are reported as part of this expenditure. In the context of the overall expenditure, they account for less than 0.5%. There remains expenditure reported that is considered not directly attributable to an asset (i.e. building). This includes costs which support

Minimum Requirements	Ergon Energy Response
	the people who deliver the services to the assets and general administration costs. These costs are predominately listed under activity 62500. Finally, an SCS percentage was applied to the costs to meet requirements of the RIN. The relevant percentage is that calculated for the reporting of overheads, leaving the cost applicable to Standard Control. The Buildings and Property Opex data reported in table 2.6.1 represents a cumulative sum of the twelve months for the regulatory (financial) year. ***IT AND COMMUNICATIONS*** Data was sourced from Ergon Energy's ERP – Ellipse. Client devices capex was extracted from the direct purchase Work in Progress codes which were analysed to identify client device expenditure. No operating costs were recorded against client devices. Client Devices Expenditure is expenditure related to a hardware device that accesses services made available by a server. Client Devices Expenditure includes hardware involved in providing desktop computers, laptops, tablets and thin client interfaces and handheld end user computing devices including smart phones, tablets and laptops. Recurrent opex is extracted from a specific code (Responsibility Centre 0385) established within the Ellipse general ledger. This represents a total cost to Ergon Energy, including Ergon Energy Queensland (Retail) and Ergon Energy Telecommunications (EET) and is subsequently reduced by the relevant percentage to represent the ICT cost applicable to Ergon Energy Standard Control Services. Recurrent capex is unable to be extracted directly from a report. Rather it is a balancing item which is calculated by subtracting the total non-recurrent and client device expenditure from the total reported IT & Communications costs. Non-recurrent capex was calculated by reviewing projects during 2017-18, and identifying CAPEX for the following non-recurrent projects: 1. Field Force automation 2. Long Range digital Radio 3. Operations Network security 4. Mobile Radio Enhancement (P25). ***MOTOR VEHICLES*** The Opex cost of motor vehicles was based on an extraction of transport transactions from the relevant transport costing elements. The non-related opex transport costs were then removed. The remaining relevant transactions contain an equipment number. Each equipment number has been aligned to its relevant RIN classification. The RIN classification is now stored and maintained in Ellipse as part of the

Minimum Requirements	Ergon Energy Response
	equipment nameplate. In instances where an equipment number was not assigned to a transaction, the unassigned costs were apportioned across the RIN categories based on the already assigned proportions. Hire vehicles (Hire Car, Hire Light Commercial Vehicle, Hire Heavy Commercial Vehicle and Other) have been identified separately due to their different total cost structure compared to Ergon Energy owned motor vehicles. Ergon Energy regards hire vehicle OPEX as a valid expenditure to benchmark its business performance, but not to directly benchmark against owned motor vehicle OPEX. Hire vehicles were identified in the abovementioned process by a unique set of equipment group identification numbers. The actual registration and Insurance costs are not directly costed to the fleet item in the Ellipse system. Registration and Insurance costs are costed to each fleet item as part of a Fleet Management Fee. The Fleet management fee also includes depreciation. To remove depreciation from the opex exercise, the fleet management fee was removed in total and the registration costs were added back. The Capex cost of motor vehicles was based on an extraction of transactions from the relevant fleet Work In Progress Activity accounts (C-Accounts) in the general ledger, with reference to the transport costing elements related to fleet equipment numbers in the general ledger. All transactions from all fleet related Work In Progress Activity accounts were extracted. All the transactions linked to fleet equipment numbers were identified from this extract from the general ledger and isolated as the total CAPEX cost related to Fleet vehicles for the specific financial years in question. The equipment number is assigned a RIN classification which is stored and maintained in Ellipse. The transport transactions were then filtered to those relating to the specific identifier numbers associated to the above mentioned fleet assets. The CAPEX costs relating to the equipment number and its relevant RIN classification were summed by regulatory year to provide the numbers for each group of equipment. The SCS portion of motor vehicle costs was calculated by extracting from the Ellipse General Ledger a listing of all activity codes that have incurred an internal transport charge. This was then summarised into standard control, alternate control, isolated and non-regulated using the activity segment of the Ellipse coding structure. The allocated proportion of total vehicle costs that relates to SCS was then calculated. ***OTHER EXPENDITURE*** There is no capex or opex for other expenditure as Ergon Energy's total non-network capex is reported against specific categories. ***OTHER NSP NOMINATED CATEGORIES***

Minimum Requirements	Ergon Energy Response
	Office Furniture & Equipment The capex on these items was sourced directly from 2017-18 Annual Reporting RINs. As the capex is all by way of direct purchases and in accordance with the approved CAM these do not incur overheads. As these items are individually of low value Ergon Energy does not incur expenditure on their repair and maintenance, hence opex is shown as zero. ***Plant & Equipment*** This category includes all non-vehicle items of plant and equipment including ladders, portable generators and a wide variety of other items. The categorisation between the Annual Reporting RIN and the Category Analysis RIN is different where we have vehicle mounted equipment. However, analysis is performed to consolidate vehicle and vehicle mounted equipment (e.g. cranes) into the Vehicle category in accordance with the definition in the CA RIN. The remaining Vehicle and Plant and Equipment costs from the AR RIN are reported in the Plant & Equipment category in the CA RIN. ***Crane Borer Plant HCV*** The Opex cost of Crane Borer Plant HCV was based on an extraction of transport transactions from the relevant transport costing elements. The non-related opex transport costs were then removed. The remaining relevant transactions contain an equipment number. Crane Borer Plant HCV is one unit which is made up of two assets (Truck + Plant). Crane Borer Plant HCV is represented by an equipment group identification numbers [G-FVPLCB and G-FVHRT and G-FVMRT]. The Opex costs relating to these equipment numbers and RIN classification of Crane Borer (HCV) were summed by regulatory year to provide the numbers for the template. The Capex cost of Crane Borer Plant HCV was based on an extraction of transactions by equipment number and RIN classification of Crane Borer (HCV). SCS % has been applied for crane borer and other fleet assets as required. The CAPEX costs relating to this equipment number and RIN classification of Crane Borer (HCV) were summed by regulatory year to provide the numbers for the specific equipment group. ***Other Fleet Assets*** Opex costs relating to EGI numbers for Trailers, Forklifts, Trenchers, Winches, Cranes, Small generators (not Network Generators), Self-propelled EWP (not mounted to trucks), compressors, All Terrain Vehicles and Quad Bikes have been included in “other fleet assets”. These fleet assets have been aligned to a RIN classification type of Other which is stored and maintained in Ellipse. An extraction of transport transactions from the relevant transport costing elements was sourced. The non-related opex transport costs were then removed. The remaining relevant transactions contain an equipment number. The

Minimum Requirements	Ergon Energy Response
	equipment number is assigned a RIN classification which is stored and maintained in Ellipse. The transport transactions were then filtered to those relating to the specific EGI numbers associated to the above mentioned fleet assets. The Opex costs were then summed by regulatory year to provide the numbers for the template. SCS % has been applied for crane borer and other fleet assets as required. Capex costs relating to EGI numbers for Trailers, Forklifts, Trenchers, Winches, Cranes, Small generators (not Network Generators), Self-propelled EWP (not mounted to trucks), compressors, All Terrain Vehicles and Quad Bikes have been included in “other fleet assets”. The assets have specific equipment numbers which are assets have been aligned to a RIN classification type of Other which is stored and maintained in Ellipse ***REFURBISHMENT/REBUILT EWP(HCV)*** Refurbished/Rebuild EWP CAPEX costs relates Elevated work platforms that have been refurbished instead of replaced under Ergons new strategy where EWP’s are replaced via a mix of replacement or refurbishment. Including this data separately provides increased transparency on how our fleet is financed. The Capex cost of Refurbished/ Rebuilt EWP (HCV) was based on an extraction of transactions by equipment number and RIN classification from the transactions from the relevant fleet Work In Progress Activity accounts (C-Accounts) in the general ledger. SCS % has been applied for as required. The rebuilt EWP’s are identified by Equipment Number from the MEWP 10 year Major Inspection program report. The CAPEX costs relating to the idenfied Equipment Number is re-classified as a Refurbished/ Rebuilt EWP (HCV) and is summed by regulatory year to provide the numbers for the specific equipment group and disclosed separately.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 2.6.2 Annual Descriptor Metrics – IT & Communications Expenditure

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.6, Table 2.6.2 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. In completing Table 2.6.2 – Non-Network Expenditure, Ergon Energy notes that it has: ▪ applied a simple average to determine the result where there were different values over the year; ▪ calculated user numbers based on active user accounts; ▪ calculated total client devices including hand held devices; ▪ scaled employee numbers, user numbers and number of devices in order to represent SCS metrics only.
Population of Actual Information in templates	Actual Information, in accordance with the AER's definition for Table 2.6.2, has been provided for the following variables. ▪ Employee numbers; ▪ User number; and ▪ Number of devices.
Source of Actual Information	Actual Information was sourced from: ▪ Annual stakeholder reports of Ergon Energy for Employee numbers. ▪ Software compliance reports For User numbers; ▪ Microsoft Active Directory report for User numbers; and ▪ System Centre Configuration Manager (SCCM) (Auto discover) and Active Directory for Number of devices. An SCS percentage was applied to underling data extracted. This was sourced from SCS% sourced from Template 2.11 Labour workings (refer Basis of Preparation for Template 2.11).
Methodology and assumption's applied in relation to Actual Information	In order to obtain the information, it was necessary for Ergon Energy to request information from SPARQ Solutions who is the ICT provider for Ergon Energy. **Employee numbers** were sourced from annual stakeholder reports of Ergon Energy. **User numbers** were sourced from the Microsoft Active Directory report.

Minimum Requirements	Ergon Energy Response
	Number of Devices The information was sourced using Microsoft applications - SCCM (Auto discover) and Active Directory. Microsoft Active Directory report - Active Directory is a Directory Service product produced by Microsoft and used by SPARQ, Ergon Energy, and Energex to manage network user accounts and computer objects .All employees are given a user account within active directory. Underpinning the directory service is a database which contains unique identifiers for each object as well as various attributes associate with those objects. Reports are run against this database to determine the number of employees, active computers etc. SCCM (System Centre Configuration Manager) is a Microsoft product used for systems management. SCCM has the ability to auto discover devices on the network and determine what software etc. is running on them. Software compliance reports are produced using a variety of sources. SCCM is a primary source for the majority of software however other discovery tools (e.g. Quest Discovery for databases) are used along with manual audits of applications based on vendor licensing models. An SCS percentage was applied to all source data to meet requirements of the RIN. This was sourced from SCS% sourced from Template 2.11 Labour workings (refer Basis of Preparation for Template 2.11).
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 2.6.3 Annual Descriptor Metrics – Motor Vehicles

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.6, Table 2.6.3 in accordance with the Notice requirements, including the

Minimum Requirements	Ergon Energy Response
	Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. In completing Table 2.6.3 – Non-Network Expenditure, Ergon Energy notes that: ▪ Data has been scaled to ensure reporting relative to SCS only; KMs is an average across the fleet so the application of the SCS does not impact the outcomes in this respect. ▪ Ergon Energy has applied a simple average to determine the result where there were different values over the year.
Population of Actual Information in templates	Ergon Energy has used Actual Information, in accordance with the AER's definition, for: ▪ Average Kilometres Travelled; ▪ Number purchased (Commissioned into service); ▪ Number Leased; and ▪ Number in Fleet.
Source of Actual Information	Actual Information for the variables was sourced: ▪ KM travelled is sourced from a third party provider, which takes the odometer readings when fuel is purchased and provides the Annual KM's at Fleet Held at YENumber of assets (by category) commissioned into service and, number in fleet (by category) is recorded in the Ellipse Equipment Register and reported in the Fleet Asset Management Annual Review Document. Number in fleet includes assets with status of In Service, Out of Service, spares, Under repair and Temporary.
Methodology and assumption's applied in relation to Actual Information	Data for the Annual Review is sourced from "Ellipse Full Listing Report" Number in Fleet for each RIN category is actual information. Ergon Energy has applied a simple average to determine the result where there were different values over the year. Average kilometres travelled is sourced from annual third part data regarding quarterly annualised use reports by fleet category and as per RIN grouping detailed below. The report is then filtered to be for contracts still running. The CA RIN defined term for ▪ CAR equates to Ergon Energy Passenger Vehicle definition. ▪ LIGHT COMMERCIAL VEHICLE incorporates Ergon Energy's Light Service Truck (LST) and 4WD and 2WD Light Commercial Vehicles definitions. ▪ ELEVATED WORK PLATFORM (HCV) equates to Ergon Energy MEWP Insulated definition + the HRT and MRT. ▪ HEAVY COMMERCIAL VEHICLE incorporates Ergon Energy HR/ MR and LR Trucks which do not have Crane Borer or Elevated

Minimum Requirements	Ergon Energy Response
	work platforms attached.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Category Analysis RIN Basis of Preparation

Template 2.7 Vegetation Management

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.7 Vegetation Management of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.7 Vegetation Management (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.7 Vegetation Management, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

Furthermore, the below additional requirement/s were identified by Ergon Energy as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation. Responses to these requirements are made as attachment/s to this Basis of Preparation.

Table 1: Attachment/s to Basis of Preparation for Template 2.7 Vegetation Management

Notice Reference	Requirement	Attachments
Appendix E, paragraph 12.4 (a) – (b)	Provide individual maps showing each vegetation management zone (Ergon Energy has three zones), and A map showing the total network area with the borders of each vegetation management zone.	EE1718CA T2.7 VGMT A1 [Central] EE1718CA T2.7 VGMT A2 [Northern] EE1718CA T2.7 VGMT A3 [Southern] EE1718CA T2.7 VGMT A4 [Network]

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.7 Vegetation Management (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process.

Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 2.7 Vegetation Management

Identifying Vegetation Management Zones

For the purposes of completing Template 2.7, Ergon Energy has identified **three** vegetation management zones across the geographical area of Ergon Energy's network. Importantly, each contiguous area nominated below is a vegetation management zone, and each part of the network is covered by only one vegetation management zone (i.e. non-overlapping).

In nominating Zones, Ergon Energy considered areas where costs are imposed by legislation, regulation or ministerial order, and areas of the network where other recognized drivers affect the costs of performing vegetation management work.

The decision to use the three management regions (Northern, Central, Southern) as the Category Analysis RIN "vegetation management zones" was made because Ergon Energy's vegetation management program is externally delivered in three separate contracts, one in each region. Ergon Energy has little variation in costs, compliance or restrictions imposed by legislations, regulations or ministerial orders within its network area, so it is the cost and composition of each of these contracts which are the greatest drivers affecting costs of performing vegetation management work.

The use of the three management regions as vegetation management zones allows for highly accurate reporting direct from Ergon Energy's corporate systems with costing and reporting structures aligned to those regions. This will also facilitate efficient and consistent reporting against required RIN variables into the future with respect to geographical zones. As such, all reporting is now noted as "Actual Information" for 2017-18 on the basis that:

- Data is derived directly from Ergon Energy corporate systems and,
- No derivation has occurred that is materially significant – ie >5% of values.

In accordance with Appendix E, Principles and Requirements paragraph 12.4 of the AER's Notice, Ergon Energy has provided as the attachments to this Basis of Preparation (refer above), individual maps showing each vegetation management zone and also a map showing the total network area with the borders of each vegetation management zone.

Regulations and Self-Imposed Standards Impacting Zones

As required by Appendix E, Principles and Requirements paragraph 12.7(a)-(b) of the AER's Notice, Ergon Energy notes the following summary of regulations (table 1) and self-imposed standards (table 2) impacting on all three Zones/Regions in Ergon Energy's network area.

Table 1: Regulations Impacting Zones

Regulations imposing a material cost on performing vegetation management works	
Electrical Safety Act 2002	Commonwealth Environmental Protection Biodiversity Conservation Act 1999
Electrical Safety Regulation 2013	Aboriginal Cultural Heritage Act 2003
Electricity Act 1994	Fire and Rescue Act 1990
Environmental Protection Act 1994	Information Privacy Act 2009
Nature Conservation Act 1992	Agricultural Chemicals Distribution Control Regulation 1998
Nature Conservation (Protected Plants) Conservation Plan 2000	

Regulations imposing a material cost on performing vegetation management works	
Vegetation Management Act 1999	QESI Powerline Code of Practice 2008

Table 2: Self Imposed Standards Impacting Zones

Self-imposed standards applicable to Ergon Energy's vegetation management works
EP02 Ergon Energy Health, Safety, Environment and Cultural Heritage Policy
ES000904R120 Ergon Energy Management of Weeds Guidelines
ES000200R101 (Ver. 3) Ergon Energy Health Safety & Environment Strategic Plan 2015-2020
NA000403R425 Guidelines for Monitoring Bushfire Weather Conditions, Fuel Conditions and Bushfire Danger Ratings
SGNW0003 Bushfire Mitigation Strategy
SGNW0041 Vegetation and Access Track Management 2015-20
STNW0602 Standard for Vegetation Clearing Profile
STNM001 Standard for Vegetation Management
STNM004 Standard for Vegetation Management in Riparian Areas
STMM001 Standard for Vegetation Management Data Collection
STNW0715 Standard for Preventative Maintenance Programs for 2015/16
NA000403R382 Vegetation Management Inspection and Assessment Maintenance Reference Standard
NA000403R384 Vegetation Management Auditing Guidelines Maintenance Reference Standard
NA000403R383 Vegetation Management Audit Maintenance Reference Standard
STNW0614 Standard for Negotiation for Removal or Herbicide Treatment of Unsuitable Trees
NA000403R331 Vegetation Management Complaints Reference Standard
AS 4373-2007 Pruning of Amenity Trees

Cost Impact of Regulations and Self-Imposed Standards on Zones

An explanation of the cost impact of the above regulatory and self-imposed standards is also required under Appendix E, Principles and Requirements paragraph 12.7(c) of the AER's Notice.

In this regard, Ergon Energy notes that the Regulatory impact on costs is the same across all Zones/Regions. Ergon Energy has limited external regulations that guide the maintenance of vegetation clearances from the network, compared to other Network Service Providers (NSPs).

Ergon Energy is required to maintain a safe and reliable network under section 216 of the Electrical Safety Regulation 2013 through maintaining safe clearances between vegetation and power lines:

> *"An electricity entity must ensure that trees and other vegetation are trimmed, and other measures taken, to prevent contact with an overhead electric line forming part of its works that is likely to cause injury from electric shock to any person or damage to property."*

Ergon Energy maintains this level of safety, as well as ensuring a level of power supply reliability, through a preventative maintenance style of vegetation management program which maintains adequate clearances between vegetation and the electrical network.

There is no bushfire risk mitigation legislation in Queensland specifically targeting NSPs such as Ergon Energy. The Queensland *Fire and Rescue Service Act 1990*, which is the key bushfire related legislation for Queensland, does not specifically mention electricity NSPs. However, as a land manager Ergon Energy has an obligation to manage bushfire risks associated with its network and vegetation management practices. The risk of fire ignition from Ergon Energy electrical assets is minimised by ensuring that they are safe and properly designed, constructed and maintained. Vegetation management practices employed by Ergon Energy inherently do not increase bushfire risk, as slashing or other mechanical methods (which can cause sparks or dense regrowth and increased fuel levels) are typically not used, and vegetation density is typically decreasing or stabilising over time.

Ergon Energy's obligations and rights under the *Electrical Safety Regulation 2013* and *Electricity Act 1994* allow the operation of a vegetation management program that meets requirements of a number of Queensland regulations, such as the Nature Conservation (Protected Plants) Conservation Plan 2000. In general, Queensland regulations relating to vegetation management recognise the highly disturbed nature of powerline corridors and do not impose overly complicated requirements in terms of surveys or herbicide application.

Where Ergon Energy's network enters State Forests or other Reserves, the Queensland Electrical Supply Industry (QESI) Code of Practice for Maintenance of electricity corridors in Queensland parks and forests (2008) determines that Ergon Energy must have an Environmental Work Plan (EWP) for maintenance activities to occur in these areas. Ergon Energy has also developed many Environmental Management Plans (EMPs) containing these EWPs, which are developed in collaboration with the tenure management authority. EMPs typically contain restrictions on treatment methods and clearance distances to reduce the impact of vegetation management on the location, including aesthetics. These areas, which are typically heavily vegetated, represent some of Ergon Energy's most expensive areas to manage vegetation clearances.

Ergon Energy's Vegetation Management Program

The frequency of inspection and treatment of vegetation is cyclical, triggering at a defined date based on determined treatment cycle length. Cycle lengths are variable across the network and are determined by the estimated vegetation growth rate of each Vegetation Zone, optimum timing to reduce long term costs, or how long the vegetation can remain untreated before it enters the Clearance Space surrounding conductors.

Vegetation Zones (VZs) are represented in Smallworld (Ergon Energy's Geographic Information System) as spatial polygons with defined boundaries based on feeder design and Bioregion classification.

The Clearance Space surrounding conductors is determined by conductor movement and arcing potential, and is variable based on network voltage. The required clearances are documented in Ergon Energy's Standard for Vegetation Clearance Profile (STNW0602).

Inspection and treatment of VZs are triggered and managed through the Ellipse ERP (Ergon Energy's Enterprise Management System) with asset-specific information stored against each VZ within Ellipse. This information includes how many poles and kilometres of line are within the VZ, line voltage, what bioregion the VZ is in, the cycle length that the VZ has been assigned, and the estimated treatment costs of managing vegetation within that VZ each cycle.

In recognition of the differences in treatment techniques required between urban and rural areas, VZs are distinctly split into rural and urban zones, with urban zones typically having shorter cycle times and less intrusive treatment techniques than rural zones.

Treatment methods used in urban areas are generally restricted to pruning and whole tree removal. Pruning is conducted wherever possible to AS 4373-2007 Pruning of Amenity Trees, which is designed to protect tree health. Where pruning is highly likely to negatively and permanently impact the health of a tree, or where the required clearance space cannot be maintained during the treatment cycle, removal of trees is preferred. Ergon Energy works with private owners and Local Government by providing adequate notice of intent, and to ensure such removals are agreed upon or reasons for removal are understood. Tree replacement costs are not captured separately to treatment costs.

Rural VZs are managed to a treatment "corridor" which maintains set distances around the network based on network voltage. Mature trees on the edges of the corridor are form pruned away from the network, while vegetation below the network is selectively managed to allow the retention of low and slow growing plant species. Preferred treatment methods for managing vegetation under the network are chemical-based and highly selective. These include spot foliar spraying, cut stump application, basal barking and stem injection. Some application of residual herbicide in pelletised or soil injection form is used in selected locations where permitted and where environmentally acceptable, to target undesirable woody vegetation.

Almost all inspection and treatment of vegetation is conducted by contractors engaged by Ergon Energy. A very small percentage of treatment work is done by appropriately trained depot staff during emergency situations or when vegetation is found to be posing unacceptable safety risk and is not planned to be treated in the vegetation management program within required remediation timeframes.

Visual assessment of vegetation presenting a potential hazard to the Ergon Energy overhead network is undertaken as part of the normal preventative maintenance for vegetation management. Similarly, overhang on distribution lines is not required to be removed on line voltages less than 33kV, unless shown to be obviously defective or hazardous.

It has been noted, Ergon Energy's vegetation management program is demonstrating a continual reduction in average maintenance costs ($ per span). In short, this has been possible through:

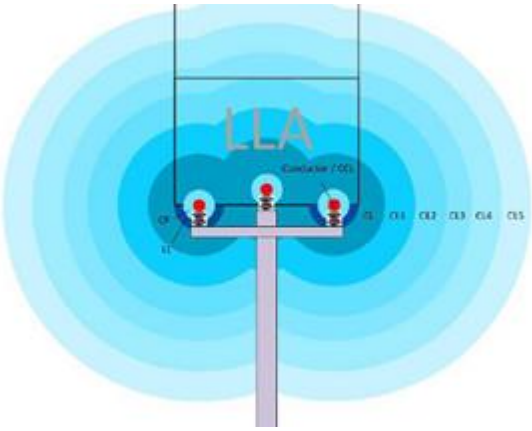
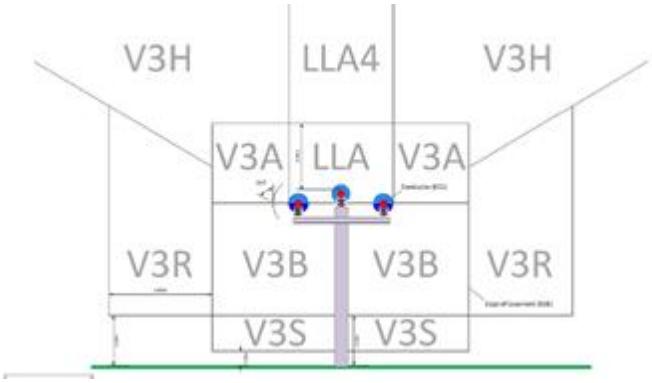
- optimising the timing of treatment of each VZ based on location-specific maintenance cycles tuned for average rainfall and other environmental variables;
- enforcing contract requirements that ensure continued reduction in vegetation exposure (such as mandatory use of follow up herbicide wherever mechanical clearance was undertaken);
- targeted removal of incompatible vegetation in urban areas, often with collaboration with Local Government; and
- completion of previously neglected "backlog" areas between 2008-09 and 2012-13 using additional funding and contractor resources, allowing the whole Ergon Energy vegetation management program to move to a cost effective preventative cyclical style program.

Table 2.7.1 Descriptor Metrics by Zone

Table 3: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.7, Table 2.7.1 Descriptor Metrics by Zone, in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.

Minimum Requirements	Ergon Energy Response
Population of Actual Information in templates	All information is reported as Actual Information for 2017-18 on the basis that: ▪ Data is derived directly from Ergon Energy corporate systems and, ▪ No derivation has occurred that is materially significant – ie >5% of values.
Source of Actual Information	All information is sourced from Ergon Energy corporate systems Ellipse and Smallworld and Queensland Government supported and managed zonal classifications
Methodology and assumption's applied in relation to Actual Information	Ergon Energy has established a methodology employed during previous reporting cycles of disaggregating the required CA RIN template categories from that derived directly from corporate systems. No additional derivation of significance (>5%) has been applied to this information and any variances from previous reporting are resultant from the continual updating of actual system data. **Route Line Length** Total route line length for 2017-18 in respect of Ergon Energy's network has been sourced from Smallworld. A methodology was employed whereby data was obtained for the current regulatory year (2017-18) by overlaying all conductors and cables in the system and then dissolving all the conductors and cables which overlapped, into one line segment. The route length of the conductors was then calculated using Feature Manipulation Engine (FME). The route Line Length does not equate to the circuit length as the circuit length includes multiple circuits. The circuit length is reported excluding the circuit length of service lines. Following AER clarifications provided in relation to variable DOEF0301 which noted the intent of this variable is to measure the aggregate distance between poles and/or towers, Ergon Energy confirms that where: ▪ two sets of lines that run on different sets of poles (or towers) share the same easement the lines are counted separately; ▪ there are multiple circuits on a span, the length of each span is considered only once; and ▪ a span shares multiple voltages, the length of the span is also considered only once; and ▪ captures the length of both underground cables and overhead lines **Number of Maintenance Spans** Remote Observation Automated Modelling Economic Simulation (ROAMES) inspection data from Cycle 3 & 4 network capture between July 2017 and June 2018 has been used to determine value. The calculation of Maintenance Spans from the total spans in the sample extract is on the basis of the number of spans in which ROAMES recorded intrusions into clearance spaces that would

Minimum Requirements	Ergon Energy Response
	normally be targeted for Urban and Rural treatment as detailed below: **Urban** Maintenance spans are spans with intrusions into the CL1 and CL2 clearance space where: ▪ CL1 is the nominated minimum clearance space (voltage dependant) plus 1 metre ▪ CL2 is the nominated minimum clearance space (voltage dependent) plus 2 metres  **Rural** Maintenance spans are spans with intrusions into the V3B and V3A clearance space where: ▪ V3B is the nominated area from 2 metres above ground to conductor height which accounts for the maintenance space for chemical and mechanical treatment in rural areas ▪ V3A is the nominated area from conductor height to clearance space for the maintenance space for mechanical treatment in rural areas.  **Total Length of Maintenance Spans** The methodology employed by Ergon Energy involves combining the outputs of both Route Line Length and Maintenance Span data to report the length of Maintenance Spans. Please refer to above methodologies in determining these.

Minimum Requirements	Ergon Energy Response
	Of note is the effect of climatic and major weather event occurances impacting the data collected during the 2015/16 year pertaining to the "Maintenance Spans" variable. Data collected during the 2017/18 year for this variable is substantially different in the Urban environment. The difference in Rural is cyclic and reflects the impacts of longer cycle zones. This balances out across the 5 year total program cycle. Other variances are reflective of seasonal change and our focus on a sustainable program with a generally reduction in vegetation density. **Length of Vegetation Corridors** Ergon Energy considers that the total length of Vegetation Corridors is equal to the total length of maintenance spans as derived from ROAMES LiDAR data described earlier in this document. Ergon Energy manages vegetation throughout the entire route length of its network thus all are considered vegetation corridors for the purpose of this variable. **Average Number of Trees per Maintenance Span** Ergon Energy has employed a methodology for reporting this variable by applying the guidance provided by the AER on 7th February 2015. The AER noted it considered a tree to be: *a perennial plant (of any species including shrubs) that is:* ▪ *equal to or greater in height than 3 metres (measured from the ground) in the relevant reporting period; and* ▪ *of a species which could grow to a height such that it may impinge on the vegetation clearance space of power lines.* For 2017-18 information Ergon Energy has sourced data from its ROAMES LiDAR program. ROAMES seeks to enable Ergon Energy with remote observation capability initially by flying over the network assets in an aerial vehicle equipped with sensor system, processing the resulting data and providing reporting and visualisation back to the business. For Urban vegetation areas, the number of trees was interpreted as number of "intrusions" found within 2.0 metres of the Clearance Zone. From field assessments, this proximity is found to contain almost all trees inspected and treated by vegetation contractors. A methodology was then employed for 2017-18, such that: ▪ Average number of trees per urban vegetation maintenance span= (Total number of intrusions recorded as occurring within 2.0m from the captured conductor location [as reported at time of analysis] / Total number of ROAMES - reported spans [as reported at time of analysis]) For Rural vegetation zones, the number of trees was interpreted as number of "intrusions" found within the treatment corridor as well as those found outside the corridor which could potentially impact on the network upon failure (i.e. potential "hazard" or "danger" trees).

Minimum Requirements	Ergon Energy Response
	▪ Average number of trees per rural vegetation maintenance span= (Total number of intrusions recorded as occurring within 2.0m from the captured conductor location [as reported at time of analysis] / Total number of ROAMES - reported spans [as reported at time of analysis]) Information provided for 2017-18 is considered Actual in accordance with AER requirements. **Average Frequency of Cutting Cycle** Ergon Energy's methodology in reporting this variable consists of the application of cycles for each Vegetation Zone taking into account the number of spans within each vegetation zone, the number of maintenance spans in 2017-18 (as above). This provides an average frequency of cutting cycle for the purposes of reporting Actual Information for the 2017-18 year.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 2.7.2 Expenditure Metrics by Zone

Table 4: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.7, Table 2.7.2 Expenditure Metrics by Zone, in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	All information is reported as Actual Information for 2017-18 on the basis that: ▪ Data is derived directly from Ergon Energy corporate systems and, ▪ No derivation has occurred that is materially significant – ie >5% of values.
Source of Actual	All information is sourced from Ergon Energy corporate systems namely

Minimum Requirements	Ergon Energy Response
Information	Ellipse. The foundation for all costing lies within Ellipse providing and easily reconcilable planning, management and reporting view of this.
Methodology and assumption's applied in relation to Actual Information	Ergon Energy has established a methodology employed during previous reporting cycles of disaggregating the required CA RIN template categories from that derived directly from corporate systems. No additional derivation of significance (>5%) has been applied to this information and any variances from previous reporting are resultant from the continual updating of actual system data. The methodology Ergon Energy has applied lies in the collation of the building blocks of the Ellipse costing system – work orders are costed to at detailed task level with costs aggregated up to general ledger activity codes – in the case of vegetation management these codes are 52160 and 53160. The detail below this – task or standard job level for work orders is able to be disaggregated reliably and by definition into the variables for this template.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 2.7.3 Descriptor Metrics Across All Zones - Unplanned Vegetation Events

Table 6: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	For all initial regulatory years in Table 2.7.3, Descriptor Metrics across all zones – Unplanned Vegetation Events, cells are shaded Orange, indicating an exception to the requirement to report where Ergon Energy does not currently collect or report this information (refer paragraph 1.3(j) of Appendix E Principles and Requirements). Furthermore, it is noted in requirements specific to the Unplanned Vegetation Events Table (refer paragraph 12.17), Ergon Energy is not required to provide information in table 2.7.3 for initial Regulatory Years where it does not currently have it, and may shade the cells black. For Regulatory Years 2015 and thereafter, Ergon Energy must provide this information.
Population of Actual Information in templates	All information is reported as Actual Information for 2017-18 on the basis that data is accessed directly from Ergon's eSafe safety incident record database without any interpolation or assumption.
Source of Actual Information	Information is sourced from the eSafe safety incident database.
Methodology and assumption's applied in relation to Actual Information	All recorded incidents which involve fire resulting from Ergon Energy assets are classed as Dangerous Electrical Events (DEEs). Incidents reported in this table are any DEEs categorised as ground/bush/grass fire with cause described as vegetation in contact with Ergon's network. Data analysis involved manually searching incident descriptions and classifications for incidents that met the CA RIN 2.7.3 requirements.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Category Analysis RIN Basis of Preparation

Template 2.8 Maintenance

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.8 Maintenance of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.8 Maintenance (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.8 Maintenance, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.8 Maintenance (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 2.8 Maintenance

Table 2.8.1 - Descriptor Metrics for Routine and Non-Routine Maintenance

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.8 - Maintenance, Table 2.8.1 - Descriptor metrics for routine and non-routine maintenance in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has limited reporting in Template 2.8 to Standard Control Services as clarified by the AER in its issue register for the Category Analysis RIN. In completing Table 2.8.1 - Descriptor metrics for routine and non-routine maintenance, Ergon Energy notes that: ▪ Where tasks were carried out for simultaneous inspection of assets and vegetation or for access track maintenance, this expenditure is reported under maintenance (not vegetation management) ▪ Ergon Energy has inserted additional Maintenance Asset Categories o Communications, Meters and Ancillary Costs under the *Various Assets*, to represent costs incurred for routine and non-routine maintenance of communications and metering equipment and for the costs associated with rates, leases , rents and electricity charges for asset sites - Zone Substations and Communications sites. No units of measure were provided as this category captures a multitude of information not included in existing CA RIN categories. This is required for completeness of reflection of all routine and non-routine maintenance costs o Access Tracks under Ground Clearance to represent tasks completed for routine and non-routine maintenance for access tracks along and adjacent to rural lines These maintenance expenditure subcategories were added as it is material and not yet included in any other maintenance expenditure subcategory. ▪ Ergon Energy does not have any Dual Function assets, therefore records no *Sub-transmission asset maintenance – for DNSPs with Dual Function Assets*. Accordingly, all metrics are reported as Zeroes. ▪ All metrics are reported as zeroes in relation to *Zone Substation Equipment Maintenance*, for asset sub category *Transformers - HV*

Minimum Requirements	Ergon Energy Response
	because all Zone Substation Transformers are reported within variable Transformers – Zone Substation ▪ Ergon Energy does not have any CBD feeders in its network, therefore all metrics in relation to *Network Underground Cable Maintenance: By Location* on asset subcategory *CBD feeders* is reported as zeroes. ▪ Furthermore Ergon Energy does not carry out any routine maintenance on underground cables as such and reporting of quantities is limited to the internal inspection of pillars related to low voltage cable reticulation. ▪ Ergon Energy ceased performing Line Patrols in 2015/16, hence the reduction in the Line Patrolled (Route KM). This program was an aerial or ground based fast patrol to identify major faults only on overhead network identified as high risk. The identification of major faults on all overhead network is now delivered as part of the ROAMES annual inspection of vegetation. ▪ Thermoscanning and insulator cleaning have been included in the Assets Inspected/Maintained quantities for Pole Top and Overhead Lines. ▪ To determine the inspection and maintenance cycles, it is noted that the RIN requirements are to "use the highest-value (i.e. highest replacement cost) asset type in the asset group as the basis". Ergon Energy has interpretated this as the replacement cost of the total asset base for an asset type, not the replacement cost of a single asset. The 2014 Category Analysis RIN Explanatory Statement demonstrated expectations in this regard, by way of an example (page 114): *in the case of poles, this is the pole and not the pole top structures such as the cross arms, insulators, and switches, as these structures/components could be younger*. Ergon Energy also notes this also best reflects the basis for reporting of inspection and maintenance cycles. ▪ For all other variables the reporting of zero indicates that there was not maintenance performed in relation to that variable for that particular year. This is due to asset strategy change within the reporting period to start a new maintenance program or suspend or cease an existing one. ▪ Ergon Energy has recorded planned Maintenance Cycles as allowable under the AER definitions. It should be noted that delivery to cycle was approaching 100 %(98.8% average across all asset groups) in 2017-18 thus reporting planned cycles is appropriate.
Population of Actual Information in templates	Asset Quantity for the Period (excluding pole tops, service lines, lines patrolled and earth mats and SCADA)
Source of Actual Information	Smallworld GIS Ellipse ERP

Minimum Requirements	Ergon Energy Response
Methodology and assumption's applied in relation to Actual Information	**Asset Quantity for the Period (excluding pole tops, service lines, lines patrolled and earth mats and SCADA)** Asset quantities come directly from our core systems (Smallworld GIS and Ellispe ERP) and are limited to regulated assets. Smallworld supplies location and network hierarchy information as well as complete information on conductors (underground and overhead). The ERP provides physical information on assets. Using the information in these systems we can align with best endeavours to CA RIN categories. We take a snapshot of all the relevant data on 1st July for RIN reporting each year and data is produced using SQL scripts. ▪ Poles This comes from our ERP and is a count of all regulated poles. ▪ Underground Cables This comes from our GIS. Voltages are based on the feeder that the wire is attached to and aggregated. This is the route length and does not include vertical components (to align with other RIN templates). ▪ Distribution Substations Transformer counts come from our ERP. It is a count of all (transformers) not in a zone substation (location comes from the GIS). Switchgear counts come from our ERP and are a count of RMUs and ABS / reclosers. Distributinon substation properties are a count of the distint properties that transformers are on (that are not inside a zone substation). This comes from a combination of GIS (property information) and ERP (transformer information). ▪ Zone Substation Equipment All zone substation calculations form from our ERP and GIS. This GIS is used to work out if a piece of equipment is within a zone substation and the ERP is used for grouping assets based on class. Property counts come from our ERP and report regulated zone sub sites that are ergon owned. Zone substation transformer counts are a count of non-distribution transformers (house / local supply transformers) within a zone substation. Distribution transformers is a count of all house transformers that are distribution transformers (house / local supply transformers) within a zone substation. Other zone substation equipment is reported as non-transformer (distribution or power) of the following types within a zone substation: current transformers, circuit breakers, voltage transformers, earth switches, earth mates, battery banks, switch units, reclosers, isolators,

Minimum Requirements	Ergon Energy Response
	cap banks and static var compensators. ▪ Protection Systems This comes from our ERP and is a count of all protection relays.
Population of Estimated Information in Templates	Estimated Information for variables was sourced from Ergon Energy's core systems on the basis of: ▪ Asset Quantity for the Period - Smallworld GIS - pole tops, service lines, lines patrolled and earth mats ▪ Asset Quantity Maintained – Ellipse ▪ SCADA – last years quantity estimate ± changes ▪ Asset Av Age – Smallworld GIS ▪ Inspection and Maintenance Cycle – Standard for Preventive Maintenance for 2017-18
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	For variable Asset Quantity Maintained, Financial asset management, physical asset management (and to an extent logistics) are separate processes and are not fully integrated under Ergon Energy's Enterprise Resource Planning (ERP) system. In particular, Maintenance tasks are initiated against an asset, however tasks are carried out under a bundled, high level costing work order. Thus the ability to directly access the individual maintenance costs for each task for each asset does not exist. So Ergon Energy has used suitable collation of actual figures from Ellipse to produce best endeavours estimates.
How Estimated Information has been produced.	Ergon Energy has established a methodology employed during previous reporting cycles of disaggregating the required CA RIN template categories from that derived directly from corporate systems. No additional derivation of significance (>5%) has been applied to this information and any variances from previous reporting are resultant from the continual updating of actual system data. The methodology Ergon Energy has applied lies in the collation of the building blocks of the Ellipse works management system – work orders are costed to at detailed task level – in the case of maintenance these codes are: Routine - 52100, 52120, 52135, 52140, 52150, 52160 and Non-Routine - 53100, 53120, 53135, 53140, 53150, 53160. The detail below this – task or standard job level for work orders is able to be disaggregated reliably and by definition into the variables for this template. ***Asset Quantity At Year End - pole tops, service lines, lines patrolled and earth mats*** In relation to Asset Quantity Ergon Energy has developed an estimate on the following basis: ▪ An assumption has been used to determine the 'number of poles' for 'pole tops and overhead lines'. Ergon Energy's assumption is

Minimum Requirements	Ergon Energy Response
	that for every 'pole top' there must be an associated pole, and thus the asset quantity at year end should be the same value for these two variables. ▪ An assumption has been used to determine the quantities for 'earth mats' against the asset category 'distribution substation - other equipment'. For every “installed transformer” for “distribution substation transformers”, there must be an “earth mat” therefore these quantities should be the same. ▪ Ergon Energy has recorded the “SCADA & network control maintenance” asset population of Master Station and RTU from the “FIELD DEVICES” source data for table 5.2.1 ***Asset Quantity Maintained*** In relation to Asset Quantity Maintained (Routine), Ergon Energy has developed an estimate on the following basis: ▪ 2017-18 – Direct output from Ellipse disaggregated to align with best endeavours to CA RIN categories On this basis Ergon Energy considers that the best estimate has been provided. ▪ Service Line and Aerial Inspection programs in 1718 was delivered as part of the Roames program recorded as part of Vegetation Inspection (Template 2.7), hence 0 in the 2.8.1 table Service Line program and 0 in the 2.8.1 table Line Patrol program. In relation to Asset Quantity Maintained (Non-Routine), Ergon Energy has developed an estimate on the following basis: ▪ 2017-18 – Direct output of costs at GL Activity from Ellipse disaggregated to align with best endeavours to CA RIN categories ▪ Ellipse captures information at a higher level (GL Activity) than for routine maintenance (Work Task Type). This means that Ergon Energy assessed proportionate numbers of work orders across the CA RIN categories from that higher level Ellipse collected data. ▪ The proportions disaggregated to CA RIN category are based on assessment of non-routine costs for 2017-18 and number of work orders applied across known costs for that year. The proportions used to disaggregate 2017-18 costs were based on those derived through manual scrutiny of individual work orders created against the GL Activities for the previous years. The percentage proportions were confirmed as being applicable for 2017-18. Ergon Energy considers that the best estimate has been provided. ***Asset Average Age*** In relation to Asset Average Age Ergon Energy has developed an estimate on the following basis: ▪ Due to source system upgrade project it was determined to use the 1617 asset age profiles and progress them by the average age

Minimum Requirements	Ergon Energy Response
	taking into account replacements and additions. ▪ 2016-17 – Direct output from Smallworld GIS disaggregated to align with best endeavours to CA RIN categories. This variable is included as estimated due to the attributes captured within Smallworld GIS not aligning directly with CA RIN categories therefore some disaggregation involved collation of similar assets into different CA RIN lines. Ergon Energy has used the highest value asset type in the asset group as a basis. On this basis Ergon Energy considers that the best estimate has been provided. ***Inspection and Maintenance Cycle*** In relation to Inspection and Maintenance Cycle, Ergon Energy has developed an estimate on the following basis: ▪ 2017-18 – Direct interpretation of the Standard for Preventive Maintenance disaggregated to align with best endeavours to CA RIN categories As per instruction, selection of the highest cost inspection/maintenance cycle where multiple cycles apply to the same CA RIN category On this basis Ergon Energy considers that the best estimate has been provided.

Table 2.8.2 - Cost Metrics for Routine and Non-Routine Maintenance

Table 2: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Blacked out cells	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
Consistency with Notice requirements	Ergon Energy has prepared the information provided in Template 2.8 - Maintenance, *Table 2.8.2 - Cost metrics for routine and non-routine maintenance* in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has limited reporting in Template 2.8 to Standard Control Services as clarified by the AER in its issue register for the Category Analysis RIN. Furthermore, the total amount for this table has been reconciled with the total maintenance expenditure for Standard Control Services as classified in the year reported. In completing *Table 2.8.2 - Cost metrics for routine and non-routine maintenance*, Ergon Energy notes that: ▪ Where expenditure was incurred for simultaneous inspection of

Minimum Requirements	Ergon Energy Response
	assets and vegetation or for access track maintenance, this expenditure is reported under maintenance (not vegetation management) ▪ Ergon Energy has inserted additional Maintenance Asset Categories o Communications, Meters and Ancillary Costs under the *Various Assets*‘:, to represent costs incurred for routine and non-routine maintenance of communications and metering equipment and for the costs associated with rates, leases , rents and electricity charges for asset sites - Zone Substations and Communications sites. o Access Tracks under Ground Clearance to represent costs incurred for routine and non-routine maintenance for access tracks along and adjacent to rural lines These maintenance expenditure subcategories were added as it is material and not yet included in any other maintenance expenditure subcategory. ▪ Ergon Energy does not have any Dual Function assets, therefore records no *Sub-transmission asset maintenance – for DNSPs with Dual Function Assets*. Accordingly, all metrics are reported as Zeroes. ▪ All metrics are reported as zeroes in relation to *Zone Substation Equipment Maintenance*, for asset sub category *Transformers - HV* because all Zone Substation Transformers are reported within variable Transformers – Zone Substation ▪ Ergon Energy does not have any CBD feeders in its network, therefore all metrics in relation to *Network Underground Cable Maintenance: By Location* on asset subcategory *CBD feeders* is reported as zeroes.
Population of Actual Information in templates	All information for Routine Maintenance is reported as Actual Information for 2017-18 on the basis that: ▪ Data is derived directly from Ergon Energy corporate systems; and ▪ No derivation has occurred that is materially significant – i.e. >5% of values.
Source of Actual Information	All information for Routine Maintenance is sourced from Ergon Energy corporate systems namely Ellipse.
Methodology and assumption’s applied in relation to Actual Information	In relation to Routine Maintenance Expenditure: Ergon Energy has established a methodology employed during previous reporting cycles of disaggregating the required CA RIN template categories from that derived directly from corporate systems. No additional derivation of significance (>5%) has been applied to this information and any variances from previous reporting are resultant from the continual updating of actual system data.

Minimum Requirements	Ergon Energy Response
	The methodology Ergon Energy has applied lies in the collation of the building blocks of the Ellipse costing system – work orders are costed to at detailed task level with costs aggregated up to general ledger activity codes – in the case of Routine maintenance these codes are: ▪ Routine - 52100, 52120, 52135, 52140, 52150, 52160 The detail below this – task or standard job level for work orders is able to be disaggregated reliably and by definition into the variables for this template.
Population of Estimated Information in Templates	Estimated information for Non-Routine Maintenance was sourced from Ergon Energy's core systems: Ellipse
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Financial asset management, physical asset management (and to an extent logistics) are separate processes and are not fully integrated under Ergon Energy's Enterprise Resource Planning (ERP) system. As a result, for variable Non-Routine Maintenance Ergon Energy does not maintain records at the required level of disaggregation and so used suitable collation of actual figures from Ellipse to produce best endeavours estimates. Ergon Energy will continue to reduce the need for assumptions, and in accordance with the AER's CA RIN Definitions and Instructions are in the process of identifying opportunities for data quality improvement in support of the transition of data from Estimates to Actuals for future reporting periods.
How Estimated Information has been produced.	In relation to Non-Routine Maintenance: Ergon Energy has established a methodology employed during previous reporting cycles of disaggregating the required CA RIN template categories from that derived directly from corporate systems. No additional derivation of significance (>5%) has been applied to this information and any variances from previous reporting are resultant from the continual updating of actual system data. The methodology Ergon Energy has applied lies in the collation of the building blocks of the Ellipse costing system – work orders are costed to at detailed task level with costs aggregated up to general ledger activity codes – in the case of Non-Routine maintenance these codes are: ▪ Non-Routine - 53100, 53120, 53135, 53140, 53150, 53160. The detail below this – task or standard job level for work orders is able to be disaggregated reliably and by definition into the variables for this template. Also in relation to Non-Routine Maintenance, Ergon Energy has developed estimates on the following basis: ▪ 2017-18 – Direct output of costs at GL Activity from Ellipse disaggregated to align with best endeavours to CA RIN categories ▪ Ellipse captures information at a higher level (GL Activity) than for routine maintenance (Work Task Type). This means that Ergon

Minimum Requirements	Ergon Energy Response
	Energy assessed proportionate levels of expenditure across the CA RIN categories from that higher level Ellipse collected data. The proportions disaggregated to CA RIN category are based on assessment of non-routine costs for 2017-18 applied across known costs for that year. The proportions used to disaggregate 2017-18 costs were based on those derived through manual scrutiny of individual work orders created against the GL Activities for the previous years. The percentage proportions were confirmed as being applicable for 2017-18. ▪ Ergon Energy considers that the best estimate has been provided.

Category Analysis RIN Basis of Preparation

Template 2.9 Emergency Response

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.9 Emergency Response of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.9 Emergency Response (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.9 Emergency Response, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.9 Emergency Response (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle - General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 2.9 Emergency Response

Table 2.9.1 Emergency Response Expenditure (OPEX)

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.9, Table 2.9.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Regard has also been given to the AER's confirmation that where the instructions for template 2.9 ask for: (A) Total emergency response opex (B) Opex for major event (defined) and for major storms (defined) (C) Opex for Major Event Days (MEDs) (defined). the AER noted that: ▪ (B) is intended to capture costs where they can be attributable to particular events whereas (C) is to reflect all emergency response opex on days that were MEDs. ▪ The RIN instructions ultimately result in a double reporting of costs in (B) and (C) where an event for example, triggers an MED however AER expect to have visibility of opex on a daily basis under item (C) where the MED event is identified. ▪ AER also wouldn't necessarily expect daily opex for events identified in (C) to sum up to amounts reported for the same event in (B) given other activity on those days.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, for all variables in Table 2.9.1 for the period 2017-18
Source of Actual Information	Actual Information for the variables was sourced from Ergon Energy's ERP – Ellipse.
Methodology and assumption's applied in relation to Actual Information	In respect of (B) MAJOR EVENTS O&M EXPENDITURE ($000'S), Ergon Energy notes: ▪ In order to obtain the information, it was necessary for Ergon Energy to select work orders from Enterprise Resource Planning (ERP) (Ellipse); ▪ Ergon Energy's Ellipse Code for Forced Maintenance (54100) has been used as it aligns to the AER's definition of Emergency Response. ▪ Data represents the total emergency response expenditure

Minimum Requirements	Ergon Energy Response
	attributed to major events (clarified by the AER to mean an event triggering a 'major event day' - a term that is defined in the Service Target Performance Incentive Scheme (STPIS), including costs extending prior and past associated declared MED days as well as costs associated with Major Storms of Category 1 or above (but not necessarily result in an MED). ▪ These costs are calculated by accessing ERP (Ellipse) data contained in work orders created specifically for capture of costs for the specifically listed events. These work orders capture and collate all transactions applicable to the listed events ▪ Note that costs for major events occurring in a previous year that have flowed into the current year have been included. In respect of (C) MAJOR EVENT DAYS O&M EXPENDITURE ($000'S), Ergon Energy notes: ▪ In order to obtain the information, it was necessary for Ergon Energy to select transactions from ERP (Ellipse) for each day identified as an MED. ▪ Emergency response expenditure incurred on the specific MED was reported by identifying daily opex incurred on each date. ▪ A sum of the emergency response expenditure incurred across the MED days related to a specific event was also calculated. ▪ Although consistent with the AER's guidance in this regard, Ergon Energy notes that under this approach, data reported: ○ captures total emergency response on these dates not only for abnormal events but also for normal daily events; ○ does not capture the total emergency response associated with the abnormal event which caused the MED but incurred in prior, or subsequent non-MED days.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Category Analysis RIN Basis of Preparation

Template 2.10 Overheads

1 July 2017 to 30 June 2018

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.10 Overheads of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.10 Overheads (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.10 Overheads, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.10 Overheads (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allowed for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should now be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Tel: 07 3851 6416

Template 2.10 Overheads

Table 2.10.1 - Network Overheads Expenditure

Table 1: Addressing Minimum BOP requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.10, Table 2.10.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Overhead expenditure has been reported before it is allocated to services (Alternative Control Services (ACS) or Standard Control Services (SCS)) or direct expenditure, and before any part of it is capitalised. Furthermore, regard has been given to the guidance provided from the AER in its Issues register, noting that Network Overheads has six compulsory categories and allowance for other (new) nominated categories (i.e. a new basis, break from previous Annual Performance RINs).
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition.
Source of Actual Information	1. Base data sourced from Ellipse using SAP Hana to return net support costs (or "overhead") for the 2017-18 financial year. Net support costs form the basis of the overhead pool. Report parameters are set as follows: ▪ District: EECL (Ergon Energy Corporation Limited) – the distribution entity; ▪ Responsibility Centre (RC): All (Business Unit groups responsible for expenses for a function/location); ▪ Activity: 62000 to 65040 (Type of work being undertaken, this range captures all "overhead" activities); ▪ Product: All (Product or service being provided); ▪ Element: 3300 to 8370 (excluding 8115, 8120CL, 8350, 8355) (Nature of the expense, this range captures all "overhead" elements). In accordance with the 2015-16 to 2019-20 CAM adjustments to net support costs have been made to exclude all Training, Employee in Transition costs and costs associated with the Merger with Energex. The resulting data represents the total "overhead pool" by RC by year. 2. The Regulated Contribution report is then used to include the direct costs of other items the AER classifies as Network Overhead

Minimum Requirements	Ergon Energy Response
	(but which Ergon Energy classifies as direct). Items *include* Meter Reading, Network operating costs, Demand Management, Customer Care activities and Training.
Methodology and assumption's applied in relation to Actual Information	Network Overheads have been calculated by applying the underlying methodology of the CAM and Ergon Energy's associated overhead processes to actual support costs to derive actual overheads across the Network Overheads categories. **Allocation to Overhead Category** Each RC has been allocated to an overhead category within either Network Overheads or Corporate Overheads (AER defined terms), based on professional judgement as to the most appropriate category for each RC. As required, data currently reported as 'Network Operating Costs' in Ergon Energy's Annual Reporting RIN has been collated / mapped to Network Overheads in the Category Analysis RIN, and disaggregated into the six mandatory subcategories: ▪ Network Management (support costs in those "Network RCs" which offer high level management support ie Executives and General Managers); ▪ Network Planning; ▪ Network Control and Operational Switching; ▪ Quality and Standard functions (including standards and manuals, compliance, quality of supply, reliability, network records (GIS), and asset strategy (other than Network Planning); ▪ Project Governance and related functions (including supervision, procurement, works management, logistics and stores); ▪ Other expenditure categories reflect annual reporting, with each category reported appropriately under Network Overhead. Specific categories that have been reported in the Overheads template which are normally treated as direct costs by Ergon Energy are: o Meter Reading, o Non-network Alternatives, o Other Costs (including Network operating costs, Customer Service activities, Distribution call centre, Market Transaction centre, NECF payments.Training and other support costs in Network related RCs but which don't relate to network management, planning, control, quality and governance etc as listed above). **Disaggregation by SCS, ACS, Unregulated Service Classifications** Network Overheads have been disaggregated across SCS, ACS and Unregulated Services classifications (Ergon Energy has no Negotiated distribution services) based on the CAM and CoS to determine the percentage allocation of each RC across the service types.

Minimum Requirements	Ergon Energy Response
	Under the CAM, the majority of Unregulated overheads, once derived, are charged as a fixed fee and should be disaggregated as such. Note the Isolated responsibility centres are allocated at 100% of actuals (not budget). In the previous regulatory period, all Unregulated overheads were recorded as Corporate overheads. From 2015-16 however, with the RC mapping methodology applied, it has resulted in a split between Network and Corporate. This change is not material to years prior to 2015-16. The ACS Operating expenditure (Opex) proportion is derived as the combination of: (1) ACS maintenance activities as a proportion of Regulated maintenance activities that attract overhead; and (2) ACS Customer care activities as a proportion of Regulated customer care activities. **Capitalised Overheads** Capitalised overheads have been calculated in accordance with Ergon Energy's current CAM, and previous CAMP, and are consistent with the capitalisation policy which has not changed from the previous regulatory period. Ergon Energy considers it prudent to allocate overheads to Capital expenditures (capex) due to the size and nature of the capex. Capex is a key driver for the incurring of overheads and to not allocate overheads would undervalue the true cost of the Capital program. **Reconciliation** Due to adjustments to overhead rates throughout the year the above allocation does not result in an exact apportionment across service types and therefore a pro-rata adjustment has been applied to reconcile to actual overhead applied by service type. This has been achieved by pro-rating disaggregated values by year.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information.
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information.

Table 2.10.2 - Corporate Overheads Expenditure

Table 2: Addressing Minimum BOP requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.10, Table 2.10.2 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Overhead expenditure has been reported before it is allocated to services (ACS or SCS) or direct expenditure, and before any part of it is capitalised.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition.
Source of Actual Information	1. Base data sourced from Ellipse using SAP Hana to return net support costs (or "overhead") for the 2017-18 financial year. Net support costs form the basis of the overhead pool. Report parameters are set as follows: ▪ District: EECL (Ergon Energy Corporation Limited) – the distribution entity; ▪ Responsibility Centre (RC): All (Business Unit groups responsible for expenses for a function/location); ▪ Activity: 62000 to 65040 (Type of work being undertaken, this range captures all "overhead" activities); ▪ Product: All (Product or service being provided); ▪ Element: 3300 to 8370 (excluding 8115, 8120CL, 8350, 8355) (Nature of the expense, this range captures all "overhead" elements). In accordance with the CAM, adjustments to net support costs have been made to include Fleet depreciation charges and exclude Training , Employee In Transition costs and costs associated with the Merger with Energex. The resulting data represents the total "overhead pool" by RC by year. 2. The Regulated Contribution report is then used to include the direct costs of other items the AER classifies as Overhead (but which Ergon Energy does not). Items *include* Self Insurance and Corporate Restructuing. Note in the 2015-16 to 2019-20 CAM, any under or over recovery of Overheads is not considered standard control.
Methodology and assumption's applied in	Corporate Overheads have been calculated by applying the underlying methodology of the CAM and Ergon Energy's associated overhead

Minimum Requirements	Ergon Energy Response
relation to Actual Information	processes to actual support costs to derive actual overheads across the Corporate Overheads categories. **<u>Allocation to Overhead Category</u>** Each RC has been allocated to an overhead category within either Network Overheads or Corporate Overheads (AER defined terms), based on professional judgement as to the most appropriate category for each RC. For Corporate Overheads there has been a change in categories following corporate restructuring at the end of the previous year. Whilst some categories remain unchanged, a number of categories have been either added or deleted therefore impacting prior year comparisons. **<u>Disaggregation by SCS, ACS, Unregulated Service Classifications</u>** Corporate Overheads have been disaggregated across SCS, ACS and Unregulated Services classifications (Ergon Energy has no Negotiated distribution services) based on the CAM and CoS to determine the percentage allocation of each RC across the service types. Under the CAM, the majority of Unregulated overheads, once derived, are charged as a fixed fee and should be disaggregated as such. Note the Isolated responsibility centres are allocated at 100% of actuals (not budget). The ACS Opex proportion is derived as the combination of; (1) ACS maintenance activities as a proportion of Regulated maintenance activities that attract overhead, and (2) ACS Customer care activities as a proportion of Regulated customer care activities. **<u>Capitalised Overheads</u>** Capitalised overheads have been calculated in accordance with Ergon Energy's current CAM, and previous CAMP, and are consistent with the capitalisation policy which has not changed from the previous regulatory period. Ergon Energy considers it prudent to allocate overheads to Capex due to the size and nature of the capex. Capex is a key driver for the incurring of overheads and to not allocate overheads would undervalue the true cost of the Capital program. **<u>Reconciliation</u>** Due to adjustments to overhead rates throughout the year the above allocation does not result in an exact apportionment across service types and therefore a pro-rata adjustment has been applied to reconcile to actual overhead applied by service type. This has been achieved by pro-rating disaggregated values by year.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to	Not applicable. Ergon Energy has provided Actual Information

Minimum Requirements	Ergon Energy Response
provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Category Analysis RIN Basis of Preparation

Template 2.11 Labour

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/17	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.11 Labour of Ergon Energy completed 2016-17 Category Analysis RIN templates, this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.11 Labour (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 2.11 Labour, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

As relevant, Ergon Energy has provided additional detail beyond the minimum requirements if it was considered it may assist a user to gain an understanding of the information presented in the regulatory templates.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.11 Labour (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
Group Manager Regulatory Affairs
Email: jenny.doyle@ergon.com.au
Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 2.11 Labour

Table 2.11.1 – Cost Metrics per Annum

Table 2.11.2 – Extra Descriptor Metrics for Current Year

Table 1: Addressing Minimum BOP requirements

Minimum Requirements	Ergon Energy Response
Consistency with the requirements of the Notice	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. Ergon Energy has labour costs which are not catered for by the lines provided in Template 2.11 Labour, tables 2.11.1 and 2.11.2. These have been included in the template by merging them with other Labour Classifications as follows: ▪ Network workers labour costs that should be classified as either Corporate or Network Overheads labour costs (given the Ergon Energy practice for all blue collar employees to cost to overhead activities such as training, meetings, lost time, etc.) have been included in the Intern, Junior Staff, Non Field Work Apprentice classification; ▪ Non Electrical workers labour costs that should be classified as Direct Network labour costs (given the Ergon Energy practice for all employees who engage in Direct Network Activity to cost to the activity regardless of Labour classification) have been included in the Skilled Non Electrical Worker classification..
	Ergon Energy has prepared the information provided in Template 2.11, table 2.11.1 Cost Metrics per Annum and table 2.11.2 Extra Descriptor Metrics for Current Year in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Only labour costs relating to the provision of Standard Control Services (SCS) are reported in the Template. Ergon Energy confirms quantities of labour, expenditure or stand down periods are not reported multiple times across the tables.
Population of Actual Information in templates	The data in the template is based on Actuals. No estimates have been used.
Source of Actual Information	All data has been sourced from Ergon Energy's Ellipse ERP system. This includes the following modules: • **Payroll** • **Labour Costing / Timesheeting** • **General Ledger** **<u>Related Party Costs</u>** All related party costs for Energy Queensland Limited, and Energex Limited have been excluded in accordance with clarification received from AER on Sep

Minimum Requirements	Ergon Energy Response
	14th 2017. Note that Employees who were appointed to Energy Queensland Limited contracts during the year will be included in the Labour Costs for that portion of the year prior to their appointment.
Methodology and assumption's applied in relation to Actual Information	**A. OVERHEADS** **Corporate Overhead** includes those activities that are not attributable to Maintenance, Capital or Network Overhead. E.g. Business Support – Finance, Safety, Human Resources, etc. - , Meetings, Lost Time (field staff), Technical Support, Property Services, Management Services, Training, **Network Overhead** is defined as per AER guidance. Refer to section 8 below. **1. Allocate Ergon Energy Employees to RIN Labour Classifications** Ergon Energy has allocated employees to the RIN Labour Categories based on reporting level and occupation type. Resultant employee classifications are provided in the table below.

Labour Category	2017-18
Executive	1
Senior Manager	118
Manager	185
Professional	744
Semi Professional	686
Support Staff	877
Intern, Junior Staff	17
Skilled Electrical Worker	1,159
Apprentice	285
Skilled Non Electrical Worker	7
Unskilled Worker	200
Grand Total	**4,279**

The aplication of the Related Parties definition will see the reduction of EECL total numbers as employees transfer to Energy Queensland contract arrangements.

2. Determine RIN Labour Classification % Split for Labour payroll costs and hours per Responsibility Centre

Ergon Energy has used actual 2017-18 employee Ellipse payroll transactions combined with the Employee RIN Labour Classification data (point 1 above) to calculate Payroll labour costs & hours by RIN Classification per employee.

This data was then aggregated to show Payroll costs and hours per responsibility centre and RIN Labour Classification.

These costs will have the RIN Overhead SCS % allocation applied to them to ensure they reflect only the employees SCS work component. This is the best estimate based on available information

Minimum Requirements	Ergon Energy Response

3. Determine Overhead Work Order Labour Costing $ & Hours by RIN Classification and Responsibility Centre

Ellipse employee labour costing transactions for overhead activities were combined with the Employee RIN Labour Classification data (point 1 above). This was aggregated to determine the responsibility centre results.

These costs will have the RIN Overhead SCS % allocation applied to them to ensure they reflect only the employees SCS work component.

4. Determine Labour Costing Recoveries $ & Hours by RIN Classification and Responsibility Centre

Ellipse employee labour costing recovery transactions were combined with the Employee RIN Labour Classification data (point 1 above). This was aggregated to determine the responsibility centre results.

These costs will have the RIN Overhead SCS % allocation applied to them to ensure they reflect only the employees SCS work component.

5. Allocate Non Labour costs to Cost Centre and RIN Labour categories

Actual Ellipse GL annual balances were used as source data for the non Labour type costs – Training, Staff Awards, Personal Protective Equipment, Employee Subsidies, etc.

Ellipse payroll ordinary hours worked per cost centre per RIN Labour Classification (see above) were used to allocate these costs. It was assumed that Ordinary hours worked represented the consumption driver as this reflected the physical employee numbers that would consume these costs in the normal day to day running of the business.

These costs will have the RIN Overhead SCS % allocation applied to them to ensure they reflect only the employees SCS work component.

6. Redundancy Costs

Employee Redundancy payments & accruals are included as part of the Labour cost.

7. Labour Hire

Labour Hire $ annual expenditure was used as the source transactions. No source of data was available for hours or Labour classification.

Accordingly, it was necessary to apply a Cost centre SCS GL Labour Hire costs /

Average Rate Assumption.

- An average rate for Support or Managerial was determined using Supplier Panel information.

The following Labour Classification assumption / mappings were required:

- White collar professional type costs centre - Professional
- All other cost centres – Support Staff

Minimum Requirements	Ergon Energy Response
	8. Determine SCS component of cost centre and RIN Labour classification costs and hours SCS Opex % and SCS Capex % were determined as part of the RIN Overhead workings (refer Basis of Preparation for Template 2.10) and combined to determine a Total SCS % for each cost centre. The Total SCS% was unique to each year. This Total SCS% was applied to the aggregate Payroll, Overhead activity Labour Costing, Labour Recovery, Labour Hire, Other costs and hours per cost centre and per RIN labour classification to calculate the SCS component for populating the RIN Labour template variables. This basis was used as it was not possible to determine an alternate allocation methodology based on data constraints & reporting capability. **9. SCS Direct Network Activity defined as Overheads by RIN** Ellipse employee labour costing transactions for the SCS Direct Network activities defined as Network Overhead by the RIN guidelines was the source data. This was combined with Employee RIN Labour Classification data (point 1 above) and aggregated to produce results by RIN Labour Classification. Activities included in this data are activities such as Demand Management, Customer Service, Network Operating and Metering activities. This is defined as Network Overhead for the purpose of the Labour template as per RIN guidelines. This data does not need further breakdown as it is 100% SCS related activity. **10. Combine the SCS Allocated Overhead costs & the SCS Direct Network Overhead to calculate Total Corporate & Network Overhead data** The data from steps 6 & 7 above are combined to produce total Corporate and Network Overhead data per RIN Labour Classification. This data is used to calculate template results **B. DIRECT NETWORK ACTIVITY** **1. Direct Network activity Costs and Hours** Ellipse employee labour costing transactions for the SCS Direct Network activities were combined with the Employee RIN Labour Classification data (point 1 above). This data does not need further breakdown as it is 100% SCS related activity. **Leave, Workers Comp, Super and Payroll Tax costs** Ergon Energy used its Corporate Oncost rates data to estimate Leave, Workers Comp, Superannuation and Payroll Tax costs. The rates were applied as per Ergon Energy Ellipse costing rules – i.e. Oncost Rate % multiplied by specific Labour expense(s). These costs were determined by cost centre and RIN Labour classification by applying the rate to the cost centre & labour classification payroll data. This basis was used to ensure the Oncosts reconciled to the amount provisioned for and costed to overheads in the 2017-18 year.

Minimum Requirements	Ergon Energy Response

C. Stand Down Occurrences

Actual Employee stand down payroll transactions for 2017-18 were used as the base data of this section of the template

The RIN Labour Classification was added to the data as per Part A.1 above.

RIN Overhead Categories and SCS Activity % were added based on the RIN Overhead workings data.

The data was aggregated to derive an estimate of SCS Stand downs by Overhead category and Direct Network activity.

All Skilled Electrical Worker, Apprentice and Non Skilled Electrical Worker Stand Downs were assumed to be Direct Network related.

D. Calculation based on assumption of 1885 hours per FTE ASL

Ergon Energy's normal business reporting uses the FTE assumption of 1885 hours or 9 day fortnight engagement. This reflects the Full Time Employment definition in Ergon energy's current Enterprise Bargaining Agreement.

The ASLs for each classification Level reflect the average paid FTEs for each classification level over the course of the year.

This allowed for the calculation of the number of ASL as follows:

$$\frac{\text{(SCS Ordinary Hours + SCS Overtime Hours)}}{\text{1885 hours}}$$

E. Calculate Per ASL Values

- **Average Productive Work Hours per ASL(0'S)** was calculated as:

$$\frac{\text{(Ordinary Hours + Overtime Hours)}}{\text{ASL count}}$$

- **Stand-Down Occurrences per ASL (0'S)** is the number of stand down occurrences, per annum per labour category / ASL count.
- **Stand-Down Occurrences** were sourced from Ellipse payroll data.
- **Average Productive Work Hours per ASL-Ordinary Time (0'S)** is calculated as *Ordinary Time Hours / ASL Count.*
- **Hourly Rate per ASL-Ordinary Time (0'S)** represents - *Ordinary Time Cost excluding Redundancy costs / Ordinary Time Hours*
  - Redundancy costs excluded from hourly rate as these costs do not form part of "on the job" costs.
  - Redundancy costs have are included in Total Labour Expenditure costs
- **Average Productive Work Hours per ASL-Overtime (0'S)** represents - *Overtime Hours / ASL count*
- **Hourly Rate per ASL-Overtime** represents - *Overtime Cost / Overtime Hours.*

Minimum Requirements	Ergon Energy Response
	▪ **Total Labour Cost** is the aggregation of all defined Labour costs. These calculations represent the most appropriate alignment of Ergon Energy source data with the variables prescribed within the RIN requirements. **F. Pro Rata allocation of costs** This occurs in two instances. **1. Costs are not identifiable by employee** This occurs where the cost source data is not employee specific. Costs of this type will be pro rata allocated using the Labour Category Ordinary Hours per responsibility centre as a basis of consumption. **2. Variance between model results and general Ledger Balances** This occurs where the building blocks of the model result in a different total number than the annual balance and the variation is not able to be determined at employee level. Costs of this type will be pro rata allocated using the Labour Category Ordinary Hours per responsibility centre as a basis of consumption.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Category Analysis RIN Basis of Preparation

Template 2.12 Input Tables

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 2.12 Input Tables of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 2.12 Input Tables (and associated Tables and/or Variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided inputs using Estimated Information in relation to Template 2.12 Input Tables , Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates and Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 2.12 Input Tables (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 2.12 Input Tables

Table 2.12 Input Tables

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 2.12 Table 2.12.1 Input Tables in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. It is noted that Table 2.12.1 Input Tables does not represent an exhaustive list of expenditure. The summation of input costs for each category do not reconcile to total expenditures amounts reported in all respective templates given limitations of the template. It is also noted there are no requirements in the RIN regarding reconciliation that involve Template 2.12. ▪ On 30 June 2016, the Energy Queensland Group was formed with the parent being Energy Queensland Limited (EQL) and 100% owned subsidiaries of Ergon Energy Corporation Limited (EECL) and Energex Limited (Energex). At that time EECL had 100% owned subsidiaries Ergon Energy Queensland Pty Limited (EEQ) and Ergon Energy Telecommunications Pty Limited (EET), and a 50% interest in a jointly controlled entity SPARQ Solutions Pty Ltd (SPARQ). EEQ is a non-competing electricity retailer; EET is a wholesale telecommunication service provider; and SPARQ is an information, communications and technology service provider. ▪ A corporate restructure occurred effective 1 December 2017 whereby EQL took up 100% ownership of these subsidiaries. ▪ EECL provides management services to EEQ and EET as these entities do not have their own management structures. EECL pays SPARQ a charge in accordance with service level agreements which is captured as a corporate overhead. ▪ EQL is subject to common control as a Queensland Government Owned Corporation (GOC), with all shares held by shareholding Ministers on behalf of the State of Queensland and transacts with other State of Queensland controlled entities. However, the Queensland Government and State of Queensland controlled entities are not considered related parties for the purposes of the CA RIN due to the specific exclusion of government departments in the definition.

Minimum Requirements	Ergon Energy Response
	▪ EECL's corporate overheads and non-network IT and communications costs include related party costs incurred from SPARQ. As SPARQ operates on a cost pass through model, there are no Related Party Margins to report. The total value of related party transaction with SPARQ were identified using General Ledger codes established for that purpose ▪ The total value of related party transactions with Energex was also identified using General Ledger codes established for that purpose. There are no margins charged on these intercompany transactions.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information.
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information, in accordance with the AER's definition for all variables in Table 2.12 Input Tables for all regulatory years.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	It was not possible to use Actual Information, and an estimate is required because the corporate Enterprise Resource Planning (ERP) and associated processes were not envisioned or configured with the level of detail requested by the AER in mind. Ergon Energy considers that it has used its best endeavours to provide its best estimate of direct material cost, direct labour cost, contract cost and other costs based on the available data in the Ellipse General Ledger and the AER Category Analysis RIN's definitions.
How Estimated Information has been produced.	Base data sourced from Ellipse was used to establish a total and the initial split between direct material cost, direct labour cost, contract cost and other costs. Cost elements within the chart of accounts were used to allocate costs between direct material cost, direct labour cost, contract cost and other costs. The cost elements were not sufficiently detailed to provide the correct costs to meet the Category Analysis RIN's definition for direct labour cost, contract costs and other costs, because direct labour is recorded at average standard labour cost rates (not actual incurred payroll costs) and reconciled in aggregate. The labour data compiled for Template 2.11 was used to adjust labour costs in Template 2.12 for corporate and network overheads and direct labour costs in order for them to balance to the labour costs shown in Template 2.11. Other costs were then calculated as a balancing item after deducting direct materials, adjusted direct labour and contractor costs. This ensured that the row totals remained unchanged.

Minimum Requirements	Ergon Energy Response
	No apportionment was required to be made for direct material cost. It was identified within the base data sourced from Ellipse using specific cost elements. Total emergency response expenditure [contained in Template 2.9 Emergency Response] was not included in the protected Template 2.12 required for submission. Accordingly, these costs were not included because additional line items could not be inserted into Template 2.12 and no other line item was appropriate. However Ground clearance - access tracks and various assets contained in Template 2.8 were mapped to the respective Routine or Non Routine maintenance “Other” categories in the Input tables template. Furthermore, the following items in Template 2.6 Non-Network that are without a dedicated line available in the Input tables template, were mapped to the Other Non-network expenditure line item: ▪ OFFICE FURNITURE AND EQUIPMENT ▪ PLANT AND EQUIPMENT

Category Analysis RIN Basis of Preparation

Template 4.1 Public Lighting

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 4.1 Public Lighting of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CARIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 4.1 Public Lighting (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 4.1 Public Lighting, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirement/s were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 4.1 Public Lighting (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CARIN Templates.

Of note, the AER reissued CARIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle - General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 4.1 Public Lighting

Table 4.1.1 - Descriptor Metrics for Current Year (2017-18)

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 4.1 - Public Lighting, Table 4.1.1 - Descriptor metrics for current year (2017-18) in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. As advised by the AER, Ergon Energy has not had regard to paragraph 17.1 of the AER's Principles and Requirements in Appendix E, which is noted as not being relevant to preparation of a response to a non-Reset RIN. Data has not been reported in relation to gifted assets, or public lighting services which have been classified as contestable. However, non-contestable, regulated public lighting services reported includes work performed by third parties on behalf of Ergon Energy. Finally, Ergon Energy does not have negotiated services in relation to public lighting therefore no metrics are included in this regard.
Population of Actual Information in templates	Ergon Energy has used Actual Information, in accordance with the AER's definition, for all variables in Table 4.1.1 for the period 2017-18
Source of Actual Information	Actual Information for the variables was sourced from Public Lighting Management database PLUMS. PLUMS is an internal system utilising several other Ergon Energy information systems to collate information in relation to public lighting assets and asset information.
Methodology and assumption's applied in relation to Actual Information	Data was extracted from PLUMS database.. Pivot tables were then developed from this extract to identify Public Lighting assets that were established in the database at the end of each regulatory year (financial year) for Ergon Energy Owned and Operated (former Rate 1) lights. These pivot tables also included a breakdown by the light type classification. It is assumed that the PLUMS data is an accurate record of actual assets.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons	Not applicable. Ergon Energy has provided Actual Information

why Estimates are Ergon Energy's best estimates.	
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 4.1.2 - Descriptor Metrics Annually (Volumes and Expenditure)

Table 2: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. Ergon Energy has left blank, the cells for *Volume of GSL Breaches* and *GSL Payments*. Ergon Energy does not have a GSL scheme for Public Lighting, and is therefore not required to report data in respect of GSLs. However the cell is not shaded orange for blacking out as per instructions. Given a 'zero' is a valid and logical answer, but no scheme exists for Ergon Energy, it is not appropriate to enter 'zero'.
	Ergon Energy has prepared the information provided in Template 4.1 - Public Lighting, Table 4.1.2 - Descriptor metrics annually in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has not distinguished between expenditure for public lighting services between Standard and Alternative Control Services when completing Template 4.1 Table 4.1.2. Furthermore, expenditure has not been distinguished between capital expenditure (capex) and operating expenditure (opex). This was further clarified by the AER in its issues register, where it noted that all items of capex and opex that were necessary to provide the services listed in templates 4.1 to 4.4 were to be included. In this regard, costs have been measured as the direct cost, excluding overheads. Expenditure has been reported as a gross amount, by not subtracting customer contributions. Furthermore, data has not been reported in relation to gifted assets, or public lighting services which have been classified as contestable. However, non-contestable, regulated public lighting services reported includes work performed by third parties on behalf of Ergon Energy. Finally, Ergon Energy does not have negotiated services in relation to public lighting therefore no metrics are included in this regard.
Population of Actual Information in templates	Ergon Energy has used Actual Information, in accordance with the AER's definition, for:

<table>
<tr><th>Minimum Requirements</th><th>Ergon Energy Response</th></tr>
<tr><td></td><td>

Total Light Installation Volumes and Expenditure for 2017-18
Total Light Replacement Volumes and Expenditure for 2017-18
Total Light Maintenance Volumes and Expenditure for 2017-18
Mean Days to rectify/replace Public Lighting assets (days) for the period 2017-18
Volume of Customer Complaints for 2017-18

</td></tr>
<tr><td>Source of Actual Information</td><td>Actual Information for Light Installation, Replacement and Maintenance Expenditure was sourced from Ellipse General Ledger extracts.

Actual information for Light Installation , Replacement and Maintenance volumes was sourced from Ellipse Requisition data report extracts and Road Patrol reports.

Actual Information for Volume of Customer Complaints was sourced from Cherwell..</td></tr>
<tr><td>Methodology and assumption’s applied in relation to Actual Information</td><td>Total Public Light installation, replacement and maintenance expenditure was calculated by assigning relevant Activity Codes against the corresponding RIN sub-category as below and extracting the general ledger direct costs from Ellipse Financial reporting.
<table>
<tr><th>RIN Sub Category</th><th>Activity Codes</th></tr>
<tr><td>Light Installation</td><td>C2040 Augmentation
C2060 Domestic & Rural Cust Requested Works
C2070 Commercial & Industrial Cust Req Works
C2120 Street Lighting Constructed
C2260 Real Estate Development Constructed</td></tr>
<tr><td>Light Replacement</td><td>C2000 Network Refurbishment
C2130 Street Lighting Refurbishment</td></tr>
<tr><td>Light Maintenance</td><td>52180 Preventive Reg Streetlights
53180 Corrective Reg Streetlights
54180 Forced Reg Street Light Maint
56200 Alternative – Other Costs Customer Service - Removal/rearrange public light assets</td></tr>
</table>
In relation to Light Installation Major/ Minor and Poles Volume, Ergon Energy has developed the following approach:

It was necessary for Ergon Energy to apply a stock code to all items to reflect what that item was used for. An Ellipse report was run to identify transactions associated with the key stock items with a street light stock section.

Transactions were filtered to remove activities for external work, internal movements between stores and contractor returns</td></tr>
</table>

Minimum Requirements	Ergon Energy Response
	The following activity codes were identified as related to Ergon Energy's key Streetlight Installation activity: ▪ C2040 Augmentation ▪ C2060 – Domestic & Rural Customer Requested Works ▪ C2070 – Commercial & Industrial Customer Requested Works ▪ C2120 – Street Lighting Constructed ▪ C2260 - Real Estate Development Constructed A report called "RIN_Reporting_Streetlighting" has been produced to collate the volume of Streetlight components issued from Stores and the material cost associated with the above activity codes. Major Luminaires, Minor Luminaires, brackets and all poles values were then totalled for Light Installation subcategory totals. The data collected was only for regulated, non-contestable streetlights as per the RIN definition In relation to Light Replacement Major/ Minor and Poles Volume, Ergon Energy used a similar approach to Light Installation volumes above. The following activity codes were identified as related to Ergon Energy's key Streetlight Replacement activity: ▪ C2000 Network Refurbishment ▪ C2130 Street Lighting Refurbishment A report called "RIN_Reporting_Streetlighting" has been produced to collate the volume of Streetlight components issued from Stores and the material cost associated with the above activity codes. Major and Minor luminaires, lamps, brackets as well as all poles values were then totalled for Replacement subcategory totals. In relation to Light Maintenance Major/ Minor and Poles Volume, Ergon Energy used a similar approach to Light Installation volumes above. The following activity codes were identified as related to Ergon Energy's key Streetlight Replacement activity: ▪ 52180 Preventive Reg Streetlights ▪ 53180 Corrective Reg Streetlights ▪ 54180 Forced Reg Street Light Maint ▪ 56200 Alternative – Other Costs – Customer Service - Removal/rearrange public light assets A report called "RIN_Reporting_Streetlighting" has been produced to collate the volume of Streetlight components issued from Stores. The total of Road Patrols Major Streetlight inspections was also added to the Major Lights volume. Poles values for all maintenance types of Preventative, Corrective and Forced utilised the same methodology as Corrective and Forced

Minimum Requirements	Ergon Energy Response
	Maintenance units above. The data collected was only for regulated, non-contestable streetlights as per the RIN definition. In relation to repair of of faulty street lights, all Work Orders, Work Requests and Field Force Automation (FFA) jobs created in 2017-18 were collated and cross referenced. Work Orders were cleaned where: ▪ Start dates were before 01/07/17 ▪ End dates still open at time of report run ▪ Work Order not corrective streetlight maintenance ▪ Work Order for multiple/ bulk repair / inspection ▪ Work Order cancelled ▪ Work Order duplicates Work Order Start dates were calculated and cleansed by using a preference of: Work Request -Work Order – FFA Device as per the system processes. Work Order End dates were calculated and cleansed by using a preference of FFA -Work Order – Work Request. In relation to Mean Days to rectify/replace Public Lighting assets (days) the average days to complete of cleansed corrective streetlight maintenance work orders was calculated. In order to obtain the information for Volume of Customer Complaints, it was necessary for Ergon Energy to report only negative feedback from Cherwell and exclude other forms of feedback including positive feedback and enquiries.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 4.1.3 - Cost Metrics (Average Unit Cost)

Table 3: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 4.1 - Public Lighting, Table 4.1.3 - Cost metrics in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has not distinguished between expenditure for public lighting services between Standard and Alternative Control Services when completing Template 4.1. Furthermore, expenditure has not been distinguished between Capex and Opex. This was further clarified by the AER in its issues register, where it noted that all items of Capex and Opex that were necessary to provide the services listed in templates 4.1 to 4.4 were to be included. In this regard, costs have been measured as the direct cost, excluding overheads. Expenditure has been reported as a gross amount, by not subtracting customer contributions. Furthermore, data has not been reported in relation to gifted assets, or public lighting services which have been classified as contestable. However, non-contestable, regulated public lighting services reported includes work performed by third parties on behalf of Ergon Energy. Finally, Ergon Energy does not have negotiated services in relation to public lighting therefore no metrics are included in this regard
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has used Estimated Information in relation to Average Unit Cost for Major and Minor Light Installation, Replacement and Maintenance for 2017-18. In previous years we have estimated the average unit cost for each light type.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon	Financial asset management, physical asset management (and to an extent logistics) are separate processes and are not fully integrated under Ergon Energy's Enterprise Resource Planning (ERP) system. In particular, replacement and maintenance tasks are initiated against an asset, however tasks are carried out under a bundled, high level costing

Minimum Requirements	Ergon Energy Response
Energy's best estimates.	work order. Thus the ability to determine the unit replacement costs and unit maintenance costs for public lighting assets does not exist. Thus Ergon Energy has provided Estimated Information in accordance with RIN requirements for variables to be an estimated average. It was not possible to use Actual Information, and an estimate is required in relation to Average Unit Cost for Major and Minor Light Installation, Replacement and Maintenance for 2017-18 as the figure is Energy reporting systems do not report to the individual unit expenditure level. Capital expenditure (Installation and Replacement) was able to use unit volumes that were relatable back to materials and direct expenditure. Light Maintenance was able to use material and maintenance costs averages to determine an estimated Light maintenance average.
How Estimated Information has been produced.	Ergon Energy has developed an estimate based on the following approach: Average Unit Cost for Major and Minor Light Installation, Replacement and Maintenance for 2017-18 Several reports were run from Ellipse to provide primary information on : ▪ Volume of lamps, luminaires, brackets and poles linked to Installation / Replacement Activity Codes for each period by breakdown into Major/ Minor light type subcategory ▪ Average cost of lamps, luminaires, brackets and poles linked to Installation / Replacement Activity Codes for each period by breakdown into Major/ Minor light type subcategory ▪ General Ledger information for the ratio of Material Cost to Direct costs for Installation and Replacement activity codes. An average weighted volume methodology was used to calculate the number of major components (lamps, luminaires, brackets and poles) used in an average installation or replacement of major and minor streetlights. The data was extracted from Ellipse requisitioning data for respective activity codes used for Installations and Replacements. The Average unit price for lamps, luminaires, brackets and poles issued is then entered against the average weighted volume of materials for the average Material Price for each item. The average Material Price is multiplied by the average ratio of Material Costs from the Requisition Reports against Direct Costs sourced from the General Ledger over the 2017-18 period. Assumptions made for this data includes: ▪ Streetlight Installation havs been based on Luminaire volume as the primary value for calculation of Number of Streetlights and the basis for weighted average volume between the asset categories. ▪ Streetlight Replacement has been based on Lamp volume as the primary value for calculation of Number of Streetlights and the basis

Minimum Requirements	Ergon Energy Response
	for weighted average volume between the asset categories. ▪ Streetlight Maintenance has been based on Lamp volume as the primary value for calculation of Number of Streetlights and the basis for weighted average volume between the asset categories. ▪ Only Lamps, Luminaires, poles and brackets have been included in the material cost. Other materials have been excluded due to the difficulty in extracting base information to be included in the estimate. These four categories are the main components in Streetlight installation. Ergon Energy considers that the best estimate has been provided for the above values as the reporting systems are unable to expand to further granular levels without a decline in integrity of estimates methodology used.

Category Analysis RIN Basis of Preparation

Template 4.2 Metering

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 4.2 Metering of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 4.2 Metering (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 4.2 Metering, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirement/s were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 4.2 Metering (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2016-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any data series inclusive of the 2013-14 year.

Enquiries or further communications should be directed to:

Jenny Doyle - General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 4.2 Metering

Table 4.2.1 - Metering Descriptor Metric (Volumes)

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with the requirements of the Notice	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. Ergon Energy notes that it does not have regulated metering services relating to meter categories Type 4 and Type 5. Type 5 metering is not permitted in Queensland as per the National Metrology Procedures Part A. Ergon Energy has identified this in the basis of preparation. Accordingly, metrics have been populated as 'zeroes' in this regard.
	Ergon Energy has prepared the information provided in Template 4.2, Table 4.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. As advised by the AER, Ergon Energy has not had regard to paragraph 16.1 of the AER's Principles and Requirements in Appendix E, which is noted as not being relevant to preparation of a response to a non-Reset RIN. Ergon Energy has not distinguished Metering services between Standard and Alternative Control Services when completing Template 4.2, Table 4.2.1. Data has not been reported in relation to metering services which have been classified as contestable. Non-contestable, regulated metering services have been reported by Ergon Energy including work performed by third parties on behalf of Ergon Energy. Impacts due to introduction of Power of Choice (PoC) on 1st December 2017 are noticeable in some line items where applicable for volumes.
Population of Actual Information in templates	Ergon Energy has provided Actual Information in relation to variables in Table 4.2.1 for all categories associated with Meter Type 6 for the period 2017-18.
Source of Actual Information	Ergon Energy has used information primarily sourced from Business Objects Report (B-NE-NC-0696 Metering Counts) which utilises data from the Meter Asset Register System (MARS) and PEACE. For this RIN the report data was refreshed on 12/07/2018. Ellipse Reports and External Billing extracts were also utilised for identifying sites outside of the RIN definitions.
Methodology and assumption's used in relation to Actual Information	In relation to Single Phase Meter population and Multiphase Meter population, report *B-NE-NC-0696 Metering Counts* accesses MARS & Peace data from SAP Hana. The Filters applied: Exclude Remote Generation TNI; NMI Class Generator, Wholesale; non-market NMI; meter model Unknown or Virtual meter.

Minimum Requirements	Ergon Energy Response
	Include only Meter provider ERGONMP, asset status Installed. The subtotal for each retailer is used to exclude Tier 2 large NMIs. Meter model type complex are installed with current transformers, simple will connect to the whole of the supply current. Card meters are also whole current.
Use of Estimated Information	Ergon Energy has not provided Estimated Information in relation to variables in Table 4.2.1.
Why is it not possible to use Actual Information, and why an estimate is required	Ergon Energy has not provided Estimated Information in relation to variables in Table 4.2.1
How the estimate has been produced	Ergon Energy has not provided Estimated Information in relation to variables in Table 4.2.1.

Table 4.2.2 - Cost Metrics (Expenditure and Volumes)

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with the requirements of the Notice	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. Ergon Energy notes that it does not have regulated metering services relating to meter categories Type 4 ,Type 5 nor Type 7. Type 5 metering is not permitted in Queensland as per the National Metrology Procedure Part A. Type 7 metering is contestable work and has been excluded. i.e. watchman lights. Ergon Energy has identified this in the basis of preparation. Accordingly, metrics have been populated as 'zeroes' in this regard.
	Ergon Energy has prepared the information provided in Template 4.2 - Metering, Table 4.2.2 - Cost Metrics in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has not distinguished between expenditure for Metering services between Standard and Alternative Control Services when completing Template 4.2, Table 4.2.1. Furthermore, expenditure has not been distinguished between capital expenditure (capex) and operating expenditure (opex). This was further clarified by the AER in its issues register, where it noted that all items of capex and opex that were necessary to provide the services listed in templates 4.1 to 4.4 were to be included. In this regard, costs have been measured as the direct cost, excluding overheads. Data has not been reported in relation to metering services which have been classified as contestable. Non-contestable, regulated metering

Minimum Requirements	Ergon Energy Response
	services have been reported by Ergon Energy including work performed by third parties on behalf of Ergon Energy. Impacts due to introduction of Power of Choice (PoC) on 1st December 2017 are noticeable in some line items where applicable for volumes and expenditure. Finally, consistent with guidance provided by the AER in its issues register in relation to certain meter services costs, Ergon Energy notes that: ▪ meter data costs that could be attributable to specific meter reading activities has been reported as part of the cost for the relevant meter reading services category; and ▪ data processing costs which could not be attributable to a specific activity has been reported in the "other costs (metering)" category.
Use of Actual Information	Ergon Energy has used Actual Information, in accordance with the AER's definition, for the following variables in Table 4.2.2 - Cost Metrics (volumes): ▪ Meter Purchases ▪ Meter Testing ▪ Meter Investigation ▪ Scheduled Meter Reading ▪ Special Meter Reading ▪ New Meter Installation ▪ Meter Replacements ▪ Meter Maintenance Ergon Energy has used Actual Information, in accordance with the AER's definition, for the following variables in Table 4.2.2 - Cost Metrics (expenditure): ▪ Meter Purchases ▪ Meter Testing ▪ Meter Investigation ▪ Scheduled Meter Reading ▪ Special Meter Reading ▪ Meter Replacements ▪ Meter Maintenance
Source of Actual Information	Sources of Actual Information for the following variables, are noted below: ▪ Meter Purchases volumes were sourced from Supplier Performance reports based on Ellipse data. ▪ Meter Purchases expenditure was sourced from Supplier

Minimum Requirements	Ergon Energy Response
	Performance reports based on Ellipse data. ▪ Meter Testing volumes were sourced from Ellipse reports based on Activity Codes, Standard Jobs and Work Orders cross referenced to Process Tracking Job data from Peace (Tableau report) where necessary to verify the number of single phase tests completed. ▪ Meter Testing expenditure was sourced from Ellipse reports based on Activity Codes, Standard Jobs and Product Code mapping. ▪ Meter Investigation volumes were sourced from mapping of Ellipse Financial Codes and Standard Jobs against Process Tracking Job data from Peace Reporting extracts. ▪ Meter Investigation expenditure was sourced from Ellipse reports based on Activity Codes, Standard Jobs and Product Code mapping. ▪ Scheduled Meter Reading expenditure was sourced from Ellipse reports based on Activity Codes, Standard Jobs and Product Code mapping. ▪ Scheduled Meter Reading volumes were sourced from Operational reports based on data referencing existing and historical annual meter reading reports and excludes self reads, annual reads or depot reads for scheduled reading purposes. ▪ Special Meter Reading volumes were sourced from mapping of Ellipse Financial Codes and Standard Jobs against Process Tracking Job data from Peace Reporting extracts. ▪ Special Meter Reading expenditure was sourced from Ellipse reports based on Activity Codes, Standard Jobs and Product Codem mapping. ▪ New Meter Installations volumes were sourced from mapping of Ellipse Financial Codes and Standard Jobs against Process Tracking Job data from Peace Reporting extracts. ▪ Meter Replacement volumes were sourced from mapping of Ellipse Financial Codes and Standard Jobs against Process Tracking Job data from Peace Reporting extracts. ▪ Meter Replacement expenditure was sourced from Ellipse Reports based on Activity Codes mapping. ▪ Meter Maintenance expenditure was sourced from Ellipse Reports based on based on Activity Codes, Standard Jobs and Product Code mapping. ▪ Meter Maintenance volumes were sourced from mapping of Ellipse Financial Codes and Standard Jobs against Process Tracking Job data from Peace Reporting extracts.As well as Activity Codes, Standard Jobs and Work Order Description data.
Methodology and assumption's used in	In order to obtain the information, it was necessary for Ergon Energy to take the following approach:

Minimum Requirements	Ergon Energy Response
relation to Actual Information	▪ Meter Purchase volumes and expenditure - was summarised from the Supplier Performance reports. Meters supplied are not distinguished from non-regulated or contestable meters until they are booked from stores and have therefore not been removed (which would represent less than 1% of volume). Spare part meter costs were included for the MK3 meter with no other charges as the remaining meter types are scrapped and refurbished by an external party who would incur any of these costs. A RITI (Receive Inspect Test Issue) process was not utilised during this period and no testing of equipment costs are involved for testing of meters during the purchasing process. NOTE: Metering Purchase expenditure is not considered capex or opex as the cost is not realised until the installation of the meter and is then costed against the correct activity code (ACS, SCS, unregulated or external). ▪ Volumes and expenditure for other categories have been mapped against the relevant RIN categories through a CA RIN Index worksheet which provided Lists for the CA RIN Volumes and CA RIN Expenditure worksheets have been collated from PTJ extract from Peace reporting the total expenditure and volume of relevant PTJs. ▪ Expenditure has been allocated by an Ellipse extract of Activity Codes involving all or parts of regulated metering activities. The Standard Jobs of the transactions were used as the primary factor of categorisation into RIN subcategories. Activity Code and Product Code were used as secondary factors for categorisation. ▪ Meter Testing expenditure was extracted from Ellipse Reports by mapping of related expenditure using Activity Code 52130 Preventive Maintenance Regulated Meters with cross referencing to mapped Standard Jobs from the CA RIN index (MMP050 & MMP010). The In-situ testing work order costs were also included from Activity Code 53130. ▪ Meter Testing volume data was developed on the assumption that each work order raised from the above cross reference was equivalent to one Meter Test. The in Situ meter testing program single phase completed tests are taken from PTJ data linked to each work order. (Tableau report). Where a work order raised in the previous financial year has incurred costs this financial year, the total number of tests is apportioned according the ratio obtained by dividing cost this financial year by the total cost charged to the work order.. ▪ Meter Investigation expenditure is summarised from the CA RIN Index for relevant Standard Jobs and Product Codes for Meter Queries / Investigation and Revenue Protection related activities. ▪ Meter Investigation volumes is summarised from the CA RIN Index for relevant Standard Jobs and PTJ's for Meter Queries / Investigation and Revenue Protection related activities.

Minimum Requirements	Ergon Energy Response
	▪ Scheduled Meter Reading expenditure is summarised from Ellipse Reports for Activity Code 56020 Mass Market Meter Reading and Standard Jobs QNOMRB, QCEMRB and QSOMRB which represents the collection of data cost.It includes work orders for depot read in regions north and south (none for central). ▪ Scheduled Meter Reading volumes are summarised from monthly MVRS reports with 12 months rolling data. This is data sourced from MVRS and consolidated into the end of month operational reports. Because depot reads are entered into MVRS they are include in the statisitics. Self reads, annual reads for scheduled reading purposes have been excluded. ▪ Special Meter Reading expenditure is summarised from Ellipse Reports for Activity Code 56000 Special Meter Reads under product code 8080 ▪ Special Meter Reading volumes are summarised from the CA RIN Index for relevant Standard Jobs and PTJ's for the Special Read expenditure above. A change in the methodology from previous submissions has been applied to encompass all Special Read PTJs and not exclude re-energisation reads. This is consistent with the definitions in Appendix F and aligns to reporting in T4.4 Quoted Services. ▪ New Meter Installations volumes are the total number of PTJ's for FBNC (B2B – New Connection) raised for New Meter Installation. Isolated Feeders and Cancelled / Incomplete Market Status have been excluded. ▪ Meter Replacement expenditure was provided from Ellipse Reports using Activity Code C2245 (Metering Replacement (NICW). ▪ Meter Replacement volumes were CA RIN Index for relevant Standard Jobs and PTJ's for the Meter Replacement expenditure above. ▪ Meter Maintenance expenditure is summarised from the CA RIN Index for relevant Standard Jobs and Product Codes for corrective meter maintenance activities. ▪ Meter Maintenance volumes summarised from the CA RIN Index for relevant Standard Jobs and PTJ's for corrective meter maintenance activities. Work Orders from Activity Code 53130 were checked for compliance to RIN definition.
Use of Estimated Information	Ergon Energy has used Estimated Information in relation to the following variables the following variables in Table 4.2.2 - Cost Metrics (expenditure): ▪ New Meter Installation ▪ Other Metering Expenditure
Why is it not possible to use Actual Information, and	Reasons as to why it was not possible to provide Actual Information, and why an estimate is required in relation to each of the variables is

Minimum Requirements	Ergon Energy Response
why an estimate is required	noted below: ▪ New Meter Installation expenditure is included in the New Meter activity which includes the costs of New Metering Installations and meters installed as part of Additions and Alterations. ▪ Other Metering expenditure is based on all other expenditure not categorised. With New Meter Installations expenditure being an estimate, this has resulted in the Other Metering value for expenditure also being an estimate.
How the estimate has been produced	In relation to New Meter Installation expenditure, Ergon Energy has developed an estimate based on the following approach: All capital costs for Installed Regulated Meters (except Meter Replacement) are recorded against Activity Code C2230. Meter Changes / Installations have been evaluated for the Financial Year by comparing MARS meter installation volumes agains PEACE PTJ types which provides a total of New Meters Installed for the financial year for the different Installation Activities. The Total of Activity Code C2230 is divided by the toal volume of Meter Changes to Calculate an average Meter Installation Cost. This is then multiplied against the total of New Meter Installations for the Financial Year for the New Meter Installation value. Ergon Energy considers the best estimate has been provided for New Meter Installation expenditure on the basis that: ▪ No exact figure is available; ▪ Cost estimates are based on Ellipse and MARS data; ▪ Average expenditure is expected to provide a good approximation of actual costs; ▪ Best endeavours have been used to extract values from existing data. In relation to Other Metering Type 6 Expenditure, Ergon Energy has developed an estimate based on the following approach: Other Metering expenditure was sourced from Ellipse Reports based on based on Activity Codes, Standard Jobs and Product Code mapping. ▪ Other Metering Type 6 expenditure consists of the totalling of the remaining opex and capex expenditure. ▪ Other Metering Type 6 capex subtotal was calculated by subtracting the total of capex expenditure (New Meter Installation and Meter Replacement) from the General Ledger capex total. ▪ Other Metering Type 6 opex subtotal is summarised from the CA RIN Index for relevant Standard Jobs and Product Codes related to all Other Metering Activities. ▪ The Other Metering Type 6 Capex and Other Metering Type 6

Minimum Requirements	Ergon Energy Response
	Opex subtotals were added to provide a total Other Metering Type 6 expenditure.

Category Analysis RIN Basis of Preparation

Template 4.3 Fee Based ACS

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 4.3 Fee Based ACS of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CARIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 4.3 Fee Based ACS (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 4.3 Fee Based ACS, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 4.3 Fee Based ACS (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CARIN Templates.

Of note, the AER reissued CARIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle - General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 4.3 Fee Based ACS

Table 4.3.1 - Cost Metrics for Fee Based Services (Expenditures and Volumes)

Table 1: Addressing Minimum BOP Requirements

<table>
<tr><th>Minimum Requirements</th><th>Ergon Energy Response</th></tr>
<tr><td rowspan="2">Consistency with Notice requirements</td><td>Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.</td></tr>
<tr><td>Ergon Energy has prepared the information provided in Template 4.3, Table 4.3.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.

As advised by the AER, Ergon Energy has not had regard to paragraph 15.1 of the AER's Principles and Requirements in Appendix E, which is noted as not being relevant to preparation of a response to a non-Reset RIN.

For the purposes of completing Template 4.3, Ergon Energy has reported categories for fee-based services that were listed in its Annual Pricing Proposal encompassing each relevant year taking note of Appendix E, Principles and Requirements, paragraph 15.2 of the AER's Notice. Please note: Fee Based Services with Nil transactions for the year (amount, volume) have been excluded.

However, there are instances where the Pricing Proposal category headings differ slightly to the mandatory categories in the template therefore the following mapping has been applied:

<table>
<tr><th>CA RIN Mandatory Category</th><th>EECL Pricing Proposal</th></tr>
<tr><td>De-energisation</td><td>De-energisation during business hours</td></tr>
<tr><td>De-energisation</td><td>De-energisation after business hours</td></tr>
<tr><td>De-energisation</td><td>Call out fee for de-energisation during business hours</td></tr>
<tr><td>De-energisation</td><td>Call out fee for de-energisations after business hours</td></tr>
<tr><td>Re-energisation</td><td>Re-energisation during business hours</td></tr>
<tr><td>Re-energisation</td><td>Re-energisation after business hours</td></tr>
<tr><td>Re-energisation</td><td>Re-energisation during business hours - after de-energisation for debt</td></tr>
<tr><td>Re-energisation</td><td>Call out fee for re-energisation during business hours</td></tr>
<tr><td>Re-energisation</td><td>Call out fee for re-energisation after business hours</td></tr>
<tr><td>Re-energisation</td><td>Call out fee for re-energisation during business hours - after de-energisation for debt</td></tr>
</table>
Relative to requirement 15.2 only fee-based services have been populated in this template. The mandatory category, 'energisation' is a Connection</td></tr>
</table>

Minimum Requirements	Ergon Energy Response
	Service classified as a Standard Control Service (not a fee-based or quoted service), therefore has been excluded. Only operating costs have been reported, no capital expenditure (capex) is captured for fee based services. Furthermore, in meeting requirements of Appendix E, Principles and Requirements paragraph 15.3 of the AER's Notice, **Table 2** (below) provides a description of each fee based service listed in regulatory template 4.3 including the purpose of each service and the activities which comprise each service. Costs have been measured as the direct cost, excluding overheads.
Population of Actual Information in templates	Ergon Energy has used Actual Information, in accordance with the AER's definition, for all variables in Table 4.3.1.
Source of Actual Information	Actual Information for the variables was sourced from a combination of Ellipse and PEACE Financial and Quantitative Reporting.
Methodology and assumption's applied in relation to Actual Information	The data used to populate the template was extracted from the Ellipse General Ledger and then using the segment of the chart of account established for this purpose the revenue and costs relating to Alternative Control Services (ACS) was identified. The amount of overheads was identified by using the relevant account code and then excluding this amount from direct costs. PEACE market system closed service orders or Ellipse work orders are then counted to calculate the related volumes depending on the service i.e. that measuring PEACE service orders will lead to significantly higher volumes being reported in the current year. Due to the extraction of volumes and values from disparate systems, some results are showing volumes without costs (or vice versa). These services are immaterial in nature. There are limitations in matching expenditure to volumes for services performed, as in some cases, the costs for minor ACS work performed on the same day by the same team has been ultimately captured against one service, not multiple services. During the 2017-18 year improvements were made to source system data quality. This has caused volume variations between the reporting years for some products. Note: in accordance with Schedule 8 s225, Ergon Energy is unable to charge for disconnection of supply of electricity to premises.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information

Minimum Requirements	Ergon Energy Response
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 2: Fee Based Services

The Fee Based Services in the below table are reflective of all of the categories of Fee Based Services that were listed in Ergon Energy's Annual Pricing Proposal for the 2017-18 year in accordance with Appendix E, Principles and Requirements, paragraph 15.2 of the AER's Notice.

Common and Miscellaneous Services	Purpose / Activities of each service
Application fee - Basic or standard connection	Services associated with assessing an application requesting a connection to be made (or altered) between Ergon Energy's network and the customer's installation, and the preparation of a compliant basic or standard connection offer. Applies to small customers classified as a Standard Asset Customer (SAC), as per Ergon Energy's pricing proposal.
Application fee - Basic or standard connection - Micro-embedded generators	Services associated with assessing a micro-embedded generator application requesting a connection to be made (or altered) between Ergon Energy's network and the customer's installation, and the preparation of a compliant basic or standard connection offer. Applies to micro-embedded generators only (a subset of Standard Asset Customers, as per Ergon Energy's pricing proposal). No technical assessment required.
Application fee - Basic or standard connection - Micro-embedded generators - Technical assessment required	Services associated with assessing a micro-embedded generator application requesting a connection to be made (or altered) between Ergon Energy's network and the customer's installation, and the preparation of a compliant basic or standard connection offer. Applies to micro-embedded generators only (a subset of Standard Asset Customers, as per Ergon Energy's pricing proposal), where a technical assessment is required to be undertaken by Ergon Energy.
Application fee - Real estate development connection	Services associated with assessing an application requesting a connection to be made between Ergon Energy's network and a real estate developer's installation, and the preparation of a compliant connection offer. Includes works carried out by contractors and/or Ergon Energy.
Protection and Power Quality assessment prior to connection	Evaluation of application protection design for completeness against engineering connection standard. Study of Power Quality issues including Flicker, Harmonics and DC voltage injection.
Temporary connection, not in permanent position - single phase metered	Connection of a single phase supply to a meter location that is not permanent (i.e. short term supply). Excludes work on metering equipment.
Temporary connection, not in permanent position - multi phase metered	Connection of a multi phase supply to a meter location that is not permanent (i.e. short term supply). Excludes work on metering equipment.
Supply abolishment during business hours	Retailer requests Ergon Energy to abolish supply at a connection point and decommission a NMI. May be used where a property is to be demolished; supply is no longer required; an alternative connection point is to be used; or a redundant supply is to be removed. Excludes decommissioning of metering undertaken by Ergon Energy or an alternative provider.

Common and Miscellaneous Services	Purpose / Activities of each service
De-energisation during business hours	Retailer requests de-energisation of the customer's premises during business hours: - where the de-energisation can be performed (e.g. pole, pillar or meter) - Main switch sticker
Re-energisation during business hours	Retailer requests re-energisation of customer's premises during business hours: - after a physical disconnection and premises requires a visual examination - following a main switch sticker
Re-energisation during business hours - after de-energisation for debt	Retailer requests re-energisation of customer's premises during business hours where the customer was previously de-energised for non-payment of their electricity account
Accreditation of alternative service providers - real estate developments	Accreditation of service providers that meet competency criteria. Applies to real estate developments.
Install replacement meter (Type 5 and 6) – Single phase	Installation and provision during business hours of a single phase replacement meter, where allowed by regulation. Note: this service is only available in non-grid connected areas of our network (isolated feeders and feeders in Mount Isa-Cloncurry supply network).
Install replacement meter (Type 5 and 6) – Dual element	Installation and provision during business hours of a dual element replacement meter, where allowed by regulation. Note: this service is only available in non-grid connected areas of our network (isolated feeders and feeders in Mount Isa-Cloncurry supply network).
Install replacement meter (Type 5 and 6) – Polyphase	Installation and provision during business hours of a polyphase replacement meter, where allowed by regulation. Note: this service is only available in non-grid connected areas of our network (isolated feeders and feeders in Mount Isa-Cloncurry supply network).
Install replacement meter (CT)	Installation and provision during business hours of a CT replacement meter, where allowed by regulation. Note: this service is only available in non-grid connected areas of our network (isolated feeders and feeders in Mount Isa-Cloncurry supply network).

Category Analysis RIN Basis of Preparation

Template 4.4 Quoted

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 4.4 Quoted of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 4.4 Quoted (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 4.4 Quoted , Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 4.4 Quoted (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle - General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 4.4 Quoted Services ACS

Table 4.4.1 - Cost Metrics for Quoted Services (Expenditures and Volumes)

Table 1: Addressing Minimum BOP Requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 4.4, Table 4.4.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. As advised by the AER, Ergon Energy has not had regard to paragraph 15.1 of the AER's Principles and Requirements in Appendix E, which is noted as not being relevant to preparation of a response to a non-Reset RIN. For the purposes of completing Template 4.4, Ergon Energy has reported categories of Quoted Services that were listed in its Annual Pricing Proposal taking note of Appendix E, Principles and Requirements, paragraph 15.2 of the AER's Notice. It should be noted that the categories applying to the 2017-18 data have changed in accordance with Ergon Energy's final determination for the 2015-20 regulatory control period. As a result, care should be taken when comparing any time series data in relation Quoted Services expenditure and volumes. In meeting requirements of Appendix E, Principles and Requirements paragraph 15.3 of the AER's Notice, **Table 2** below provides a description of each Quoted Service listed in regulatory template 4.4 including the purpose of each service and the activities which comprise each service. Quoted Services with Nil transactions for the year (amount, volume) have been excluded. Costs have been measured as the direct cost, excluding overheads. Furthermore, the AER noted at Issue 58 in the Issues Register that recoverable work projects (including all costs associated with customer requested capital works for which the prime purpose is to satisfy a customer requirement other than new or increased supply) was to be included as quoted services and hence captured in template 4.4. These projects have been excluded from connections works under template 2.5.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, for all variables in Table all variables in Table 4.4.1
Source of Actual Information	Actual Information for the variables was sourced from Ergon Energy's Ellipse and PEACE Financial and Quantitative Reporting.
Methodology and assumption's applied in	In order to obtain the information, it was necessary for Ergon Energy to combine the total count of services from the two source systems being

Minimum Requirements	Ergon Energy Response
relation to Actual Information	Ellipse and PEACE for the product codes applicable to quoted based services for the required years. The data used to populate the template was extracted from the Ellipse General Ledger and then using the segment of the chart of account established for this purpose the revenue and costs relating to Alternative Control Services (ACS) was identified. The amount of overheads was identified by using the relevant account code and then excluding this amount from direct costs. PEACE market system closed service orders or Ellipse work orders are then counted to calculate the related volumes depending on the service i.e. that measuring PEACE service orders will lead to significantly higher volumes being reported in the current year. Due to the extraction of volumes and values from disparate systems, some results are showing volumes without costs (or vice versa). Most services are immaterial in nature with the exception of emergency recoverable works. In this instance, the following three services should be assessed together in aggregate Other Recoverable Works, Removal / Relocation of Ergon Energy assets at customer request, and emergency recoverable works. There are limitations in matching expenditure to volumes for services performed, as in some cases, the costs for minor ACS work performed on the same day by the same team has been ultimately captured against one service, not multiple services. During the 2017-18 year improvements were made to source system data quality. This has caused volume variations between the reporting years for some products..
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Table 2: Ergon Energy Quoted Services

The Quoted Services in the below table are reflective of all of the categories of Quoted Services that were listed in Ergon Energy's Annual Pricing Proposal of each relevant year in accordance with Appendix E, Principles and Requirements, paragraph 15.2 of the AER's Notice.

Quoted Services	Purpose and Activities of Service
Application fee - Negotiated connection	Services associated with assessing an application requesting a connection to be made (or altered) between Ergon Energy's network and the customer's installation, and the costs associated with negotiating and preparing a negotiated connection offer. Applies to small customers classified as a Standard Asset Customer (SAC), as per Ergon Energy's pricing proposal, with the exception of micro-embedded generators.
Application fee - Negotiated connection - Micro-embedded generators	Services associated with assessing a micro-embedded generator application requesting a connection to be made (or altered) between Ergon Energy's network and the customer's installation, and the costs associated with negotiating and preparing a negotiated connection offer. Applies to micro-embedded generators only (a subset of SAC, as per Ergon Energy's pricing proposal).
Application fee - Negotiated - Major customer connection	Services associated with assessing a major customer connection application requesting a connection to be made (or altered) between Ergon Energy's network and the customer's installation, and the costs associated with negotiating and preparing a compliant negotiated connection offer. Applies to major customers classified as an Individually Calculated Customer (ICC), Connection Asset Customer (CAC) or Embedded Generator (EG), as per Ergon Energy's pricing proposal.
Carrying out planning studies and analysis relating to connection applications	Services associated with carrying out additional planning studies and analysis on the distribution system which are reasonably required to assess a small customer or real estate development connection application. Excludes planning studies and analysis that would otherwise be required for distributor purposes or for the efficient management of the shared network. Applies to small customers classified as a Standard Asset Customer, as per Ergon Energy's pricing proposal (including micro-embedded generators), and real estate developers.
Feasibility and concept scoping, including planning and design, for major customer connections	Detailed design and advice for major customer connections for the selected (preferred) connection option. This includes shared network planning and design works incurred during the feasibility and concept scoping phases (i.e. before the connection offer has been accepted) (where applicable).
Tender process	Applies where Ergon Energy conducts a tender process on behalf of a connection applicant to procure connection services that can be provided by a third party, or where the connection applicant conducts a tender process and requires assistance from Ergon Energy
Pre-connection site inspection	Site inspection in order to determine nature of connection being sought

Quoted Services	Purpose and Activities of Service
Provision of site-specific connection information and advice	Provision of site-specific connection advice, data and/or information on request (during the connection enquiry and/or connection application stage only). For example: - advice on project feasibility - advice on whether augmentation would likely be required - capacity information, including specific network capacity - load profiles for load flow studies - requests to review reports and designs prepared by external consultants, prior to lodgement of connection application - additional or more detailed specification and design options. Excludes information provided in planning reports/studies and project scopes.
Preparation of preliminary designs and planning reports for major customer connections, including project scopes and estimates	Initial specification and design outline for major customer connections. Includes general evaluation and advice on asset ownership options, indicative estimates of viable connection options, and recommendation on the most suitable option.
Customer build, own and operate consultation services	Provision of advice, design and specification on request to an applicant considering a build-own-operate asset ownership option for connection assets.
Detailed enquiry response fee - embedded generation	Costs associated with preparing a detailed enquiry response pursuant to Chapter 5 of the NER. Applies to any embedded generation connection applicant that submits an enquiry under the connection process set out in Chapter 5 of the NER and seeks a detailed enquiry response.
Design and construction of connection assets for major customers	Detailed design work and construction of connection assets after a connection offer has been made. Applies to major customers classified as an Individually Calculated Customer (ICC), Connection Asset Customer (CAC) or Embedded Generator (EG) as per Ergon Energy's pricing proposal.
Commissioning and energisation of major customer connections	Includes: - inspection and testing of connection assets prior to physical connection to the network - physical connection and energisation of electricity equipment to allow conveyance of electricity - administration services involved in reconciling the financials of a connection project, and processing and finalising network information and contracts in relation to a connection - generation required (if any) to supply existing customers while equipment is de-energised to allow testing and commissioning Applies to major customers classified as an Individually Calculated Customer (ICC), Connection Asset Customer (CAC) or Embedded Generator (EG) as per Ergon Energy's pricing proposal.
Design and construction for real estate developments	Detailed design work and construction for a real estate development connection after a connection offer has been made. Includes work associated with augmentation to the shared network which is directly attributable to the establishment or alteration of the real estate development connection

Quoted Services	Purpose and Activities of Service
Commissioning and energisation of real estate development connections	Includes: - inspection and testing prior to physical connection to the network - physical connection and energisation of electricity equipment to allow conveyance of electricity - administration services involved in reconciling the financials of a connection project, and processing and finalising network information and contracts in relation to a connection - generation required (if any) to supply existing customers while equipment is de-energised to allow testing and commissioning
Removal of network constraint for embedded generator	Augmenting the network to remove a constraint faced by an embedded generator
Move point of attachment - single/multi phase	De-energisation, followed by physical dismantling then reattachment of service and re-energisation. Excludes work on metering equipment (if required).
Re-arrange connection assets at customer's request	Removal, relocation or rearrangement of connection assets at customer request. Excludes work on metering equipment (if required).
Protection and Power Quality assessment after connection	Investigation into Power Quality issues including Flicker, Harmonics and DC voltage injection.
Temporary de-energisation - no dismantling	Temporary de-energisation and re-energisation of supply at the service fuse to allow customer or contractor to work close - no dismantling of service required (i.e. no service line drop).
LV Service line drop and replace - physical dismantling	Temporary de-energisation and re-energisation of supply to allow customer or contractor to work close - the service will be physically dismantled or disconnected (e.g. overhead service dropped).
HV Service line drop and replace	Temporary de-energisation and re-energisation of supply to allow customer or contractor to work close - Isolate and earth
Supply enhancement	For example, an upgrade from single phase to multi phase and/or increase capacity. Applies to underground and overhead service upgrades. Excludes work on metering equipment (if required)
Provision of connection services above minimum requirements	Customer requests increase in reliability or quality of supply beyond the standard, and/or above minimum regulatory requirements (e.g. reserve feeder). Excludes work on metering equipment (if required)
Upgrade from overhead to underground service	Requests to convert an existing overhead service to an underground service. Excludes work on metering equipment (if required)
Rectification of illegal connections or damage to overhead or underground service cables	Repair works to re-establish a safe and legal connection due to customer or third party action. Excludes work on metering equipment (if required)
De-energisation after business hours	Retailer requests de-energisation of the customer's premises after business hours: - where the de-energisation can be performed (e.g. pole, pillar or meter). - Main switch sticker

Quoted Services	Purpose and Activities of Service
Re-energisation after business hours	Retailer requests re-energisation of a customer's premises after business hours: - after a physical disconnection and premises requires a visual examination - following a main switch sticker - where the customer was previously de-energised for non-payment of their electricity account
Accreditation of alternative service providers - major customer connections	Accreditation of service providers that meet competency criteria. Applies to major customers classified as an Individually Calculated Customer (ICC), Connection Asset Customer (CAC) or Embedded Generator (EG) as per Ergon Energy's pricing proposal.
Approval of third party design - major customer connections	Review, inspection and auditing of design carried out by an alternative service provider prior to energisation. Applies to major customers classified as an Individually Calculated Customer (ICC), Connection Asset Customer (CAC) or Embedded Generator (EG) as per Ergon Energy's pricing proposal.
Approval of third party design - real estate developments	Review, inspection and auditing of design carried out by an alternative service provider prior to energisation. Applies to real estate developments.
Construction audit - major customer connections	Review, inspection and auditing of construction works carried out by an alternative service provider prior to energisation. Applies to major customers classified as an Individually Calculated Customer (ICC), Connection Asset Customer (CAC) or Embedded Generator (EG) as per Ergon Energy's pricing proposal.
Construction audit - real estate developments	Review, inspection and auditing of construction works carried out by an alternative service provider prior to energisation. Applies to real estate developments.
Approval of third party materials	Certification of non-approved materials (i.e. approval of non-approved materials to be used on Ergon Energy's network).
Special meter read	Off-cycle meter read, during business hours. Does not include final meter reads which are included in Default Metering Services. Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises.
Meter test	Customer requested meter accuracy testing of Ergon Energy whole current Type 5 and 6 meter. Also includes meter tests by Ergon Energy for Ergon Energy meters attached to a CT. Only available where meter installed and operational. Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises.
Meter inspection and investigation on request	A request to conduct a site review of the state of the customer's metering installation without physically testing the metering equipment. Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises.
Metering alteration	Meter is being relocated or meter wiring altered and requires Ergon Energy to visit site to verify the integrity of the metering equipment. Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises.
Exchange meter	Like for like meter exchange on request, unless not allowed by regulation Note: this service is only available for non-grid connected areas of our network (isolated feeders and the Mount Isa-Cloncurry supply network)

Quoted Services	Purpose and Activities of Service
Type 5 to 7 non-standard metering services	Provision of Type 5 to 7 metering services above minimum requirements, unless not allowed by regulation. For example: - provision, installation and maintenance of meters above minimum requirements (i.e. installation of a non-standard meter above minimum regulatory requirements on request) - provision of metering data above minimum requirements (such as urgent delivery, summarisation of metering data, historical metering data prior to the previous 2 years etc.) - provision of time of use metering data (provision of half hourly data on request if available. Collection and processing of probe read data from accumulation read interval capable meters on a one off basis.) - provision of energy pulsing output for a customer - interface to building management system Note: where a new or replacement meter is deemed to be required, Ergon Energy is only able to undertake this work in non-grid connected areas of our network (Isolated feeders and Mount Isa-Cloncurry supply network)
Removal of a meter (Type 5 & 6)	Removal of a meter on request when an existing Type 5 or 6 meter remains installed at the premises. Includes – remove meter and re-commission installation; no re-wiring required. Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises.
Meter re-seal	Where the customer has caused the meter to need re-sealing (e.g. by having electrical work done on site) Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises.
Install new or replacement meter - after hours	Installation and provision after hours of a Type 5 and 6 or CT meter on or after 1 July 2015. All feeder types. Note: this service is only available in non-grid connected areas of our network (isolated feeders and feeders in Mount Isa-Cloncurry supply network).
Change time switch	Change to time switch setting
Change tariff	Request to reprogram meter due to change in tariff (including adding or removing a tariff) and/or time of use setting (except for controlled load timing changes) Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises. Where a new or replacement meter is required to support a change in tariff, Ergon Energy is only able to undertake this work in non-grid connected areas of our network (Isolated feeders and feeders in Mount Isa-Cloncurry supply network).
Reprogram card meters	Attend and reprogram card meters to reflect retail tariffs, outside scheduled visit Note: this service is only available where Ergon Energy is the default Metering Co-ordinator or Responsible Person for the premises.
Install metering related load control	Installation of customer load control initiated and managed via the meter Note: where a new or replacement meter is deemed to be required, Ergon Energy is only able to undertake this work in non-grid connected areas of our network (Isolated feeders and Mount Isa-Cloncurry supply network)
Removal of load control device	Remove load control relay or time clock on request
Change load control relay channel	Change load control relay channel at retailer, customer or other third party request that is not part of initial load control installation, nor part of standard asset maintenance or replacement.
Services provided in relation to a Retailer of Last Resort (ROLR) event	Services Ergon Energy provides when a ROLR event occurs

Quoted Services	Purpose and Activities of Service
Non-standard network data requests	Customer requests provision of electricity network data requiring customised investigation, analysis or technical input (e.g. requests for pole assess information and zone substation data)
Provision of services for approved unmetered supplies	Provision of services, other than standard connection, for approved unmetered equipment, public telephones, traffic lights and public BBQs. Includes attendance on site to verify a load change, following a customer request to increase or decrease the load of a network connected unmetered supply device.
Customer ,retailer or third party requested appointments	Works initiated by a customer, retailer or third party which are not covered by another service and are not required for the efficient management of the network, or to satisfy distributor purposes or obligations. Includes, but is not limited to: - restoration of supply due to customer action - re-test at customer's installation (i.e. customer has submitted Form A and the Retailer has issued a Service Order Request, but installation fails test and cannot be connected, requiring a re-test of the installation) - safety observer - tree trimming - switching - cable bundling - checking pump size for tariff eligibility.
Removal/rearrangement of network assets	Removal, relocation or rearrangement of network assets (other than connection assets) at customer request, that would not otherwise have been required for the efficient management of the network.
Aerial markers	Installation of aerial markers (or Powerlink Hazard Identifiers) on service lines
Tiger tails	Installation of covers on service lines
Assessment for Non-Exporting embedded generator applications	Services associated with assessing a generator on a customer's installation which will not be exporting into the distribution system. Includes costs associated with preparing a Consent Agreement.
Witness testing	Witnessing of testing carried out at the customer's installation by the connection applicant where reasonably required or requested (e.g. as the result of the introduction of a parallel generator on a customer's installation)
Removal/rearrangement of public lighting assets	Relocation, rearrangement and removal of existing public light assets and energy efficient retrofit

Category Analysis RIN Basis of Preparation

Template 5.2 Asset Age Profile

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 5.2 Asset Age Profile of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CARIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 5.2 Asset Age Profile (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 5.2 Asset Age Profile, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirement/s were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 5.2 Asset Age Profile (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CARIN Templates.

Of note, the AER reissued CARIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should now be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au

Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 5.2 Asset Age Profile

Ergon Energy provides the below comments specific to individual asset groups / categories represented in Template 5.2.

Ergon Energy's source system is missing age related data for some assets. This data gap has been caused by a number of legacy reasons. For example natural poles manufactured pre-mid 1960s were not fitted with an identification disc and limited installation data for conductors and service lines installed pre-2008. For the majority of these assets, there is no mechanism to determine the true date of manufacture.

In addition to this, natural disasters such as cyclones and flooding have caused considerable low voltage (LV) Services failures. Post-disaster collection and updating of records for LV Services replacements has historically been problematic. Scheduled maintenance inspections are being used to be to determine the date of manufacture from the physical asset (where available), however this process will take time to collect all the missing data.

Ergon Energy has revised its method of determining the economic life reported in table 5.2.1. Ergon Energy has estimated the reported economic life for all asset categories using the engineering assessment.

It should be noted that data has been sourced through the efforts of a number of independent subject matter experts. The Category Analysis RIN Code has been applied to both Table 2.2.1 and 5.2.1 has been used to consolidate all data.

Ergon Energy continues to look at reducing the need to make assumptions, and in accordance with the AER's CA RIN Definitions and Instructions are in the process of identifying opportunities for data quality improvement in support of the transition of data from Estimates to Actuals for future reporting periods.

Table 5.2.1 - Asset Age Profile

Table 1: Poles

Minimum Requirements	Ergon Energy Response - Poles
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has considered and complied with clarifications provided by the AER on 2 July 2016 on issues related to template 5.2.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period (1919-20-2017-18) ▪ Age Profile (installed assets, quantity currently in commission by year)
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	**AGE PROFILE** Because it was not possible to provide Actual Information in relation to age profiles date for all asset categories within the Poles Asset Group, all data is declared as estimated and estimation was required for. ▪ Natural poles manufactured pre mid 1960s were not fitted with an identification disc. Furthermore, a large data gap exists for around 20% of poles which have lost or have no disc. ▪ For Wood poles (both not reinforced and reinforced) this involves poles installed from 1964 to the present which is the era when they were known to be used. ▪ For Concrete/Steel Poles, this involves poles installed from 1980 to the present as this is the known era where substantial quantities of concrete and other steel poles were known to have been installed. ▪ For steel streetlight poles, this involves poles installed from 1990 to the present as this is the period of time for which installation of UG cable increased and therefore so too did the installation of streetlights on dedicated poles.

Minimum Requirements	Ergon Energy Response - Poles
How Estimated Information has been produced.	**AGE PROFILE** In relation to Age Profile, Ergon Energy has developed an estimate based on the following approach: In the absence of specific records, Ergon Energy has attempted to infer Year of installation from related or nearby asset data records. In continued absence of reasonable results, Ergon Energy has attempted to infer near-YOM from records about the manufacturing and available records from Manufacturers. In continued absence of reasonable results, Ergon Energy has used more tenuous relationships to determine an age profile as it is understood that an important end purpose of the RIN Template 5.2.1 data is to use it to populate the AER's REPEX model. Similar age inference processes were used during the development of Ergon Energy's internal condition based refurbishment maintenance (CBRM) modelling. In developing this estimate, Ergon Energy has made the following assumptions: ▪ That similar nearby assets will have been installed at approximately the same time ▪ For poles that are still unknown that on average the same number of poles are installed (of the same type) each year. Ergon Energy considers that the best estimate has been provided for Age Profile on the basis that: ▪ A hierarchy of logic has been used so that the best possible value for the Age Profile was chosen, including basing the age on surrounding equipment and finally at the lowest level distributing the years across the period that the poles were known to be used. ▪ Ergon Energy uses the Field Mobile Computing (FMC) to provide Pole Maintenance data to the cooperate system. There are delay between the installation date and inspection date. This causes distortion in the age profile of the newly installed pole data. This distortion will be cleared after the maintenance inspection.

Table 2: Pole Staking

Minimum Requirements	Ergon Energy Response – Pole Staking
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. Ergon Energy has considered and complied with clarifications provided by the

Minimum Requirements	Ergon Energy Response – Pole Staking
	AER on 2 July 2016 on issues related to template 5.2.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period(1919-20-2017-18) ▪ Age Profile (installed assets, quantity currently in commission by year)
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	**AGE PROFILE** Because it was not possible to provide Actual Information in relation to age profiles date for all asset categories within the Poles Staking Category, all data is declared as estimated and estimation was required for: ▪ Natural poles manufactured pre mid 1960s were not fitted with an identification disc. Furthermore, a large data gap exists for around 20% of poles which have lost or have no disc. For Wood poles (both not reinforced and reinforced) this involves poles installed from 1964 to the present which is the era when they were known to be used.
How Estimated Information has been produced.	**AGE PROFILE** In relation to Age Profile, Ergon Energy has developed an estimate based on the following approach: ▪ Ergon Energy has used Works Order information to obtain age profile back to 2002, beyond this the population was spread between 1985 (date of commencement of pole staking) and 2002. Known duplicates generated during a system conversion in 2004 and 2005 have been manually removed. In developing this estimate, Ergon Energy has made the following assumptions: ▪ There were no staked poles before 1985 ▪ Closed works orders equate to installed pole stakes ▪ Staked poles are NOT counted as a unique asset, they are counted under the poles category, including these in pole counts will lead to counting duplicates and totals will then not equal the totals in table 2.8.1 Ergon Energy considers that the best estimate has been provided for Age Profile on the basis that: ▪ For staking of wooden poles. Work Orders were used to estimate the

Minimum Requirements	Ergon Energy Response – Pole Staking
	number of poles back to 2002, earlier results have been manually populated to include the total number of poles

Table 3: Overhead Conductors and Underground Cables

Minimum Requirements	Ergon Energy Response – Overhead and Underground Cables
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period(1919/20-2017-18 ▪ Age Profile - Conductor Age ▪ Conductor Voltage and phase where these are not populated in GIS.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	**AGE PROFILE** It was not possible to use Actual Information, and an estimate is required in relation to conductor age because Ergon Energy holds very little asset data on the installation date for overhead or underground conductors. Design processes from around 2008 create such data for the small percentage of assets constructed since that time. In some cases where conductor phase and voltage are not populated in GIS, these were inferred from other attributes.
How Estimated Information has been produced.	<u>Overhead Conductor Age</u> In relation to overhead conductor age, Ergon Energy has developed an estimate based on the following approach: ▪ Get the latest date the line was installed, upgraded or replaced in a Smallworld design. ▪ Get the earliest pole treatment year of poles the line is mounted on. If this date is within the date range specified for the construction in the

Minimum Requirements	Ergon Energy Response – Overhead and Underground Cables

CBRM QESI inferred date table, use this date.

- If the conductor is mounted on “Natural Round” poles and 1955 is within the date range specified for the construction in the CBRM QESI inferred date table, use 1955.
- If the conductor is in NQ and its construction is one of ('200','203','204','205','207','208','211','212','213','214') use 1985.
- If the construction has a numeric value use the nominal year from CBRM QESI inferred date table for the construction.
- If the construction is non-numeric, use the alternative nominal year from CBRM QESI inferred date table for the construction.
- Date is unknown.

In developing this estimate, Ergon Energy has made the following assumptions:

- The energisation processes all installed new conductor.
- Conductors for which no age was able to be determined, were added to the amounts for aged conductors, in the same proportion as the aged conductor to the total age for each year.
- Ergon Energy inferred the natural round pole by assigning flat line age profile year between 1949/50 – 1961/62 for the following voltage categories.
  - < = 1 kV; Wood
  - > 1 kV & < = 11 kV; Wood
  - > 11 kV & < = 22 kV; Wood
- Therefore, a conductor may be mounted on natural round pole with assigned age between 1949 and 1962. The conductor inferring rule would assign same age of the oldest pole on the feeder. This gave a high volume of asset in the older range and less volume in the younger range. Due to this reason, Ergon Energy change the overhead conductor age profile between 1949/50 and 1961/62 by averging the total length of conductor voltages in following categories and flat lined the age profile similar to natural round pole age profile.
  - < = 1 kV
  - > 1 kV & < = 11 kV
  - > 11 kV & < = 22 kV ; Single-Phase
  - > 11 kV & < = 22 kV ; Multiple-Phase

<u>Underground Conductor Age</u>

In relation to underground conductor age, Ergon Energy has developed an estimate based on the following approach:

- Get the installation recorded against the cable in GIS.
- Get the latest date the cable was installed, upgraded or replaced in a

Minimum Requirements	Ergon Energy Response – Overhead and Underground Cables
	Smallworld design. ▪ Traverse the network downstream from the cable and determine the date as follows o Installation date of downstream cable. o Age of downstream switches. o Age of downstream transformers. o Age of supporting poles. o Age of ground-mounted substation or pillar. ▪ Nominal year assigned to the QESI code associated with the cable's construction. ▪ Date is unknown RIN Template 5.2.1 is populated from Ergon Energy's GIS system for Subtransmission, Distribution and LV underground cable. The age profile has been inferred from connected assets, downstream transformers and switchgear and installation age ranges for cable types. Ergon Energy notes there is a small disparity between the total quantity of high voltage (HV) cable in the RIN snapshot database and the earlier data extraction for the CBRM model data. In developing this estimate, Ergon Energy has made the following assumptions: ▪ Cables for which no age was able to be determined, were added to the amounts for aged cables, in the same proportion as the aged cable to the total age for each year.

Table 4: Service Lines

Minimum Requirements	Ergon Energy Response – Service Lines
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. SERVICE LINES BY CONNECTION VOLTAGE ▪ All Low Voltage (<= 11kV) Services are included under the two "SIMPLE TYPE" categories below: < = 11 kV ; RESIDENTIAL ; SIMPLE TYPE < = 11 kV ; COMMERCIAL & INDUSTRIAL ; SIMPLE TYPE ▪ This is because Ergon Energy has no sensible way to differentiate the "COMPLEX TYPE" Low Voltage (<= 11kV) services. < = 11 kV ; RESIDENTIAL ; COMPLEX TYPE < = 11 kV ; COMMERCIAL & INDUSTRIAL ; COMPLEX TYPE ▪ The remaining HV categories of services are constructed of assets which are reported as the individual assets from which they are constructed.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period(1919-20-2017-18) ▪ Age Profile

Minimum Requirements	Ergon Energy Response – Service Lines
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	**AGE PROFILE** It was not possible to use Actual Information, and an estimate is required in relation to Service line age, because Ergon Energy holds very little asset data on quantity of or installation date for overhead and underground services, pillars and pits. Design processes from around 2008 create such data for these assets. There are insufficient records to provide even a reasonable estimate of this profile. The impacts of natural disasters such as Cyclones are often considerable, and LV service failures in such situations are common. Cyclones and flooding across Queensland have had significant impact in this area. Post disaster restoration records of LV Services replacement have not proven to be effective. Records of prior Ergon Energy entities for LV Services are scant.
How Estimated Information has been produced.	**AGE PROFILE** In relation to service lines age, Ergon Energy has developed an estimate based on the following approach: For each service point a service line is assumed: ▪ If a service point is directly related through an overhead wire of less than 50m.to a pole, a service line is assigned the inferred age of the pole. ▪ For non-directly related service points the nearest structure (pole, pit, pillar or gms site) to the service point is found. If the nearest structure is a pole and within 50m, a service line is assigned the inferred age for that pole.

Table 5: Transformers by Mounting Type and Operating Voltage

Minimum Requirements	Ergon Energy Response – Transformers by Mounting Type and Operating Voltage
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice. According to further guidance provided by the AER in regards to template 5.2 in its Issues Register, Ergon Energy notes that: ▪ Transformers mounted within self-contained substations are reported against the “kiosk” mounting type. The self-contained substations securely enclose all components of the substation within a confined unit. ▪ Furthermore, it is noted that the AER expect by their nature, that pad-

Minimum Requirements	Ergon Energy Response – Transformers by Mounting Type and Operating Voltage
	mount substations are encased units and therefore transformers within these units to be classified as a kiosk mounting type. ▪ Pole and kiosk mount transformers above 22kV are placed in the less than 22kV category as there is no above 22kV category. ▪ Pole and kiosk mount regulators are placed in the greater than 600kVa category.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Transformer Asset Group, for the period (1919-20-2017-18) ▪ Age Profile (All variables) ▪ Substation Transformers: o All Pole Mounted Transformer o All Kiosk Mounted Transformer o All Ground Mounted Transformers Other Assets Including: ▪ CURRENT TRANSFORMERS ▪ VOLTAGE TRANSFORMERS ▪ CAPACITOR BANKS ▪ STATIC VAR COMPENSATOR
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	**AGE PROFILE** It was not possible to use Actual Information, and an estimate is required in relation to installation year because Ergon Energy employs run to end of life strategies for a number of these assets and Year of Manufacturer/Installation has not been routinely collected.
How Estimated Information has been produced.	**AGE PROFILE** In relation to Age Profile Ergon Energy has developed an estimate based on the following approach: The year of installation is determine by following this hierarchy until an answer is found:

Minimum Requirements	Ergon Energy Response – Transformers by Mounting Type and Operating Voltage
	▪ COMM-DATE (Commissioning Date) nameplate against the asset in Ellipse. ▪ YOM (Year of Manufacture) nameplate against the asset in Ellipse. ▪ date_installed attribute of the asset in Smallworld. ▪ date_installed attribute of the associated substation in Smallworld. ▪ treatment year nameplate against the pole the asset is mounted on ▪ latest YOM or COMM-DATE nameplates against equipment at the GMS site the asset is mounted on. ▪ earliest premise status date for customers associated with the asset substation. Where the above logic results in blank or a non-sensible value those assets are distributed to the same shape distribution as the assets with a real or inferred age. Note, Age Profile For substation transformers >22kV (row 96 on) is predominantly actual data as only small gaps in age data exist. In developing this estimate, Ergon Energy has made the assumption that customers are associated to the asset. Ergon Energy considers that the best estimate has been provided for Age Profile on the basis that: ▪ A hierarchy of rules is used so that the best sources are interrogated first working down to the more tenuous connections

Table 6: Switchgear by Voltage and Function - Fuses

Minimum Requirements	Ergon Energy Response – Switchgear by Voltage and Function - Fuses
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period(1919-20-2017-18) ▪ Age Profile
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	**AGE PROFILE** It was not possible to use Actual Information, and an estimate is required because the relevant fields are not completed in Ellipse.
How Estimated Information has been produced.	**AGE PROFILE** The age profile has been estimated using the assumption that each distribution transformer has one set of HV and one set of LV fuses up until 2013/14. From 2017-18 onwards, only LV fuses have been reported against the "< = 11 kV FUSE" category as per AER response of 02/07/2016; "the omission of a category for 'fuses >11kV' is intentional. AER staff note the definition of 'switch' includes fuses at higher voltages. Because of the high number of fuses at the <=11 kV category, these are asked for separately. All other categories have been rationalised for each Asset Group with a single 'other' available for those categories not listed.".

Table 7: Switchgear by Voltage and Function - Circuit Breakers and Switches

Minimum Requirements	Ergon Energy Response – Switchgear by voltage and function – Circuit Breakers and Switches
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period(1919-20-2017-18) ▪ Age Profile
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	**AGE PROFILE** It was not possible to use Actual Information, and an estimate is required because the relevant fields are not completed in Ellipse. In this case the query emulates the CBRM data extraction query logic for age inferring for distribution assets.
How Estimated Information has been produced.	**AGE PROFILE** Switch age is determined in the following order ▪ The COMM-DATE (Commissioning Date) nameplate against the switch physical in Ellipse. ▪ The YOM (Year of Manufacture) nameplate against the switch physical in Ellipse. ▪ The year the latest design, containing an Install, Upgrade or Replace action against the switch, was energised. ▪ The age of the site on which the switch is mounted, determined as follows ○ For poles, get the inferred age for the pole using the logic described in the pole age profile above. ○ For GMS sites, get the latest Year of Manufacture or Commissioning Date nameplate values for equipment mounted on the site. ○ For zone substation sites, get the default CBRM date for equipment

Minimum Requirements	Ergon Energy Response – Switchgear by voltage and function – Circuit Breakers and Switches
	located at the zone substation. ▪ Where the above logic results in blank or a non-sensible value those assets are distributed to the same shape distribution as the assets with a real or inferred age. ▪ The HV fuses age profile has been estimated using the assumption that each distribution transformer has one set of HV and one set of LV fuses. From 2017-18 onwards, the HV fuses have been reported in the group "<= 11 SWITCH" category as per AER response of 02/07/2016; "the omission of a category for 'fuses >11kV' is intentional. AER staff note the definition of 'switch' includes fuses at higher voltages. Because of the high number of fuses at the <=11 kV category, these are asked for separately. All other categories have been rationalised for each Asset Group with a single 'other' available for those categories not listed."

Table 8: Public Lighting

Minimum Requirements	Ergon Energy Response – Public Lighting
Consistency with Notice requirements	Ergon Energy has not populated variables for the Public Lighting asset category in Table 5.2.1 in accordance with clauses 5.1(f) and 6.1(a) which states if we do report expenditure in Template 2.2 Repex we do not report an asset age profile. Note in prior years information was submitted in template 5.2 asset age profile in error despite the requirements of the RIN (as above)

Table 9: SCADA Network Control Master Stations

Minimum Requirements	Ergon Energy Response – SCADA Network Control Master Stations
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period(1919-20-2017-18) ▪ Age profile
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	It was not possible to use Actual Information, and an estimate is required in relation to: **AGE PROFILE** As some of these projects are in implementation phase but not fully completed so installation data is not yet available.
How Estimated Information has been produced.	<u>AGE PROFILE 2017-18</u> In relation to installed assets 2017-18, Ergon Energy has developed an estimate based on the number of projects that are in implementation or were scheduled for that time period. In developing this estimate, Ergon Energy has made the assumption that projects have commenced as scheduled.

Minimum Requirements	Ergon Energy Response – SCADA Network Control Master Stations
	▪

Table 10: Protection Systems, Field Devices and Local Wiring Assets

Minimum Requirements	Ergon Energy Response – Protection Systems, Field Devices and Local Wiring
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2 in accordance with the Notice requirements. Local wiring is not recorded as a separate asset in Ergon Energy's systems. Accordingly, all local wiring work is considered part of the asset to which it is attached and therefore not reported separately.
Population of Actual Information in templates	Ergon Energy has endeavoured to provide supporting evidence or confirmation of Actual installations and replacements for RIN Template 5.2. ***Protection Relay Installations*** For RIN Template 5.2.1, approximately 9.620 relay records have been considered and validated for relay installations (following filtering assumptions).
Source of Actual Information	***Protection Relays*** Ergon Energy has sourced records confirming actual asset installations, replacements for RIN Template 5.2.1 from several sources including: ▪ Ellipse – Asset Register, ▪ Protection Database System (PDS).
Methodology and assumption's applied in relation to Actual Information	Ergon Energy has obtained Actual asset information for the 2017-18 financial year utilising the following methodology: ***Protection Relays*** 1. Obtained an Actual asset population count, ▪ Sourced by Ellipse and Protection Database System (PDS) records, ▪ All information sources are cross-referenced and filtered to ensure individual asset counts, Ergon Energy asset ownership/maintenance, and determination of assets that are operational/in-service. In addition, relays considered undertaking auxiliary functions (e.g. multi-trip, oil temperature indication etc.) have been discounted from the population base. 2. Identification of installation or replacement year, ▪ Sourced by Ellipse and PDS records, ▪ Installation or replacement year is obtained from all Protection Setting Requests (PSR) records identified as "complete" or "finalised" accompanied by a time-stamped confirmation date from the installation field crew. In addition, several substations have undertaken an extensively desktop investigation to discern an installation date.

Minimum Requirements	Ergon Energy Response – Protection Systems, Field Devices and Local Wiring

Population of Estimated Information in Templates	Ergon Energy has endeavoured to provide to provide supporting evidence or accurate information with respect to Estimated installations and replacements for RIN Template 5.2.1.
	
	Protection Relay Installations & Replacements
	
	▪ Approximately 15% of the relay population installed considered are attributed to having an unknown age due to an absent installation date.
	  ○ Derived from unknown age population, approximately 5% of the relay population have a known model type and have been randomly assigned an installation year in accordance with their respective model type as follows:
	  ▪ Electromechanical relays: up to and including 1979,
	  ▪ Static relays: 1980 to 1999 inclusively, and
	  ▪ Numeric relays: from 2000 onwards
	▪ Similarly, approximately 4% of the relay population installed considered are attributed to having an unknown age due to an absent removal date.
	  ○ Derived from this unknown age population, approximately 3% of the relay population have a known model type and have been randomly assigned an installation year in accordance with their respective model type.
	▪ The remaining relays without a defined age or model type have been randomly distributed an installation year from 1960 to 2017 in accordance with the ratio of known installations for the three model types mentioned above for the given target year.

Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Although Ergon Energy has endeavoured to provide asset data as accurately as possible the following items below explain the causes and limitations in procuring Actual information for protection relays for the RIN Template 5.2.1. It is not possible to use Actual Information, and an estimate is required in relation to: **AGE PROFILE** It is not possible to procure an Actual Information for age profiles as assets have been inherited from multiple previous energy distribution suppliers before the amalgamation of Ergon Energy. Legacy assets records are incomplete once transferred to Ellipse. As previously stated approximately 9% of asset records retain information to procure an asset age with the remainder estimated. Thus asset age populations presented in regulatory template 5.2 are proclaimed by Ergon Energy as an estimate. **QUALITY OF ASSET RECORDS** Ergon is endeavouring to improve the quality and detail of its asset data records (i.e. Ellipse asset registry). Ergon is at the very early stages of implement an audit of its protection relays through routine maintenance, however this will take several years to pass throughout the extensive network

Minimum Requirements	Ergon Energy Response – Protection Systems, Field Devices and Local Wiring
	in Queensland. Alternatively, efforts are being made to verify and update asset records through 'condition asset assessments' which are undertaken for initiated substation site projects.
How Estimated Information has been produced.	Ergon Energy has obtained Estimated asset information for the 2017-18 financial year utilising the following methodology: ***Protection Relays*** 1. Obtained an Actual asset population count: ▪ Sourced by Ellipse and PDS records, ▪ All information sources are cross-referenced and filtered to ensure individual asset counts, identification of Ergon Energy asset ownership/maintenance, and determination of assets that are operational/in-service. 2. Assignment of installation or replacement year: ▪ Sourced by Ellipse, PDS records and past RIN submissions, ▪ All incomplete relay asset records without time-stamp dates are defined as estimates and assigned an installation year in accordance with the description outlined in section '*Population of Estimated Information in Templates*', ***Relay Installations and Replacements*** Ergon Energy's key corporate management system Ellipse does not store individual procurement, installation and/or commissioning dates within its asset registry nor does it track the logistical life of secondary system assets (including relays). Majority of data provided within Template 5.2 has been procured from PDS (Protection Database System). Primarily utilised as a protection setting register, this database is not specifically designed to track the logistics of protection relays including installation, replacement, and failure records. PDS however does attempt to track the implementation of protection relay setting work. This includes the initiation, creation, updating, development, approval, assignment and confirmation of relay setting work to operational staff in the field – which encompasses the installation of new relays and replacement of existing relays. PDS is able to report the status of these work tasks via PSRs. Manual extraction, manipulation, filtering and analysis of these PSR records and their associated operator commentary enables a measure of identification of relay work distinguishing between installations and replacements as well as the odd relay that fails in service. Majority of PSR records are time-stamped as they are processed, however work confirmation or feedback from the field has a high turn around cycle. Thus, reporting Actual installations for the financial year of 2017-18 in mid-

Minimum Requirements	Ergon Energy Response – Protection Systems, Field Devices and Local Wiring
	July 2016 may not recover all overdue confirmations of installations and replacements from the field, especially work that was undertaken late in the 2017-18 financial year. A number of these PSR records have not been fully completed or time-stamped however, after field work has been accomplished. These incomplete records and their associated assets records have been classed as an Estimate although it is most likely that they have been completed with record-keeping updated at a later date. All asset record data and associated work (i.e. installation or replacement) have been cross-referenced with the predetermined asset population count to ensure no double ups and assign suitable asset counts, where no data exists, relative to the project work (i.e. differentiating between installation or replacement work).

Table 11: Communications and Local Wiring Assets

Minimum Requirements	Ergon Energy Response – Communications and Local Wiring Assets
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period (2017-18) ▪ Age Profile
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	It was not possible to use Actual Information, and an estimate is required in relation to Age Profile because after a detailed analysis of the available data in Ellipse, Stride, VQSM, Small World and consultation with SME's was completed, it was confirmed that the base data remains incomplete. This base data has been improved over the last twelve months and will be completely rectified by FY end 2017-18 to enable reporting of actual data.
How Estimated Information	**AGE PROFILE**

Minimum Requirements	Ergon Energy Response – Communications and Local Wiring Assets
has been produced.	As we have not completed the updating of our base data in the corporate systems, based on expenditure for financial year 2017-18 we have reported installations calculated by Telecommunications Project Managers & Return To Service (RTS Project) installations. Replacements for financial year 2017-18 have been aligned manually with assets from previous financial years and removed accordingly. In relation to Age Profile (2017-18), Ergon Energy developed the following estimation methodology: ▪ Report volumes against the RTS project through the Corvu 900h report assuming one asset replacement per capitalisation line. ▪ Split the lines between the AER Categories to generate the RTS replacement figure. ▪ Consult with Telecommunications Project Managers to allocate estimated asset replacements per line for the Telecommunications Capital Program of Works. Allocate these assets across the AER Categories. ▪ Combine both the RTS and Capital Program of Works figures and apply this to financial year 2017-18 for installed assets. ▪ Make an assumption based on the technology of the assets replaced and SME advice in financial year 2017-18 of where to reduce the asset volume in previous years.

Table 12: Other Assets

Minimum Requirements	Ergon Energy Response – Other Assets (CT's, VT's and CP's)
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Ergon Energy has provided Estimated Information in relation to the following variables, for all Asset categories in the Asset Group, for the period (1919-20-2017-18) ▪ Age Profile

Minimum Requirements	Ergon Energy Response – Other Assets (CT's, VT's and CP's)
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	
How Estimated Information has been produced.	

Table 13: Mean life and standard deviation

Minimum Requirements	Ergon Energy Response – Mean life and standard deviation
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice.
	Ergon Energy has prepared the information provided in Template 5.2, Table 5.2.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Not applicable. Ergon Energy has provided Estimated Information
Source of Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Methodology and assumption's applied in relation to Actual Information	Not applicable. Ergon Energy has provided Estimated Information
Population of Estimated Information in Templates	Economic life (mean and standard deviation) have been estimated by engineering assessment for all assets.
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	In Ergon Energy, it is not possible to derive an actual mean replacement life because a majority of the assets do not have valid commissioning and/or decommissioning information at present and as such an engineering assessment has to be undertaken.
How Estimated Information has been produced.	Ergon Energy has developed the estimated mean life for the assets based on general industry life expectations, manufacturer's specification and operational experience with the assets. Economic Life (standard deviation) was approximated by the square root of the mean in accordance with the AER guidance

Category Analysis RIN Basis of Preparation

Template 5.3 Maximum Demand at Network Level

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 5.3 Maximum Demand at Network Level of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CA RIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 5.3 Maximum Demand at Network Level (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 5.3 Maximum Demand at Network Level, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 5.3 Maximum Demand at Network Level (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CA RIN Templates.

Of note, the AER reissued CA RIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle – General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 5.3 Maximum Demand at Network Level

Table 5.3.1 - Raw and Weather Corrected Coincident MD at Network Level (Summed at Transmission Connection Point)

Table 1: Addressing Minimum BOP requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. Ergon Energy has also provided data in relation to Embedded Generation, Weather Corrected Network Coincident Maximum Demand (for both 10% POE and 50% POE). These cells were shaded orange allowing for 'blacking out' had such information was not collected. The raw maximum demand used for weather correction is adjusted demand. Embedded generation taken into account at the system level includes scheduled and unscheduled generation
	Ergon Energy has prepared the information provided in Template 5.3, Table 5.3.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, for all variables in Table 5.3.1 for the last complete regulatory year
Source of Actual Information	Actual Information for the variables was sourced from Ergon Energy's Statistical Metering Database (SMDB). Ergon Energy maintains a series of secure, managed databases known as the SDMB that contain historic demand and weather (sourced from the Bureau of Meteorology data). A full version control of the metered data is maintained within SMDB and the database is regularly backed-up. Access to the environment is secure and provided only to those persons who require access in order to conduct and manage the load forecasting process, and planning studies, with any changes to the datasets tracked and recorded. The database is constantly being fed new demand data from a variety of sources including Australian Energy Market Operator (*AEMO*) accredited Meter Data Agents (MDA) for all *NEM* meter data file formatted (MDFF) data for Transmission *Connection* Points (and hence Ergon Energy System Total Demand).
Methodology and assumption's applied in relation to Actual	Relative to the information provided for variables in the Table 5.3.1, it was necessary for Ergon Energy to apply the following methodologies and assumptions:

Minimum Requirements	Ergon Energy Response
Information	▪ *RAW NETWORK COINCIDENT* **(Native)** Maximum demand obtained from SMDB. ▪ *DATE MD OCCURRED* as extracted from the SMDB aligned with native maximum peak. ▪ *HALF HOUR TIME PERIOD MD OCCURRED* was read from the SMDB, as being the same as the National Electricity Rules (NER) defined "trading interval". The value reported for this variable is the 30 minute period ending on the hour or on the half hour over which the native maximum demand was recorded. The interval is identified by the *time* at which it ends. ▪ WINTER/SUMMER PEAKING data reported aligns with Ergon Energy's own network demand forecasting cycles, under which Summer Peak is considered to occur in the period 1 October to 31 March inclusive while Winter Peak is considered to occur in the period 1 April to 30 September inclusive. This cannot correspond with the form of the definition of a regulatory year due the seasonal nature of customer demand for energy on the network assets. For clarity, Ergon Energy forecasts with the latest available recorded annual maximum demands which are derived from measurements over the 12 month period ending summer. That is to say, for example, for the purpose of forecasting zone substation maximum demand, 2017-18 is the 12 month period ending 01/04/2018 00:00, of which winter MDs are recorded during period 01/04/2017 00:30 - 01/10/2017 00:00 and summer MDs are recorded during period 01/10/2017 00:30 - 01/04/2018 00:00. ▪ EMBEDDED GENERATION data was obtained from the SMDB as the aggregation of all measurable embedded generation on the Ergon Energy regulated network. Maximum demands are extracted at time of the Native Annual System Maximum Demand (COINCIDENT). Only those sites where Ergon Energy has 30 minute interval meters installed and recorded are used in this variable. The coincident values cannot be determined for sites without 30 minute interval metering. Estimates that up to 100 MW of micro-embedded generation is therefore not included in the metric 'Embedded Generation'. Ergon Energy is of the opinion that this would not introduce a material impact on the use of the information. A negative sign is used to indicate directional flow of energy ▪ *WEATHER* CORRECTED *(10% POE) NETWORK COINCIDENT MD*, and *WEATHER CORRECTED (50% POE) NETWORK COINCIDENT MD.* In order to obtain weather adjusted peak demand, Ergon Energy has employed a methodology involving: o Daily temperature maximum and minimum observations are obtained from the Bureau of Meteorology for weather stations within the Ergon Energy franchise area. o In reference to temperature correction, actual summed coincident demand at the Network Terminal Connection Point and embedded

Minimum Requirements	Ergon Energy Response
	generation as read from SMDB is weather corrected using the following: Constructing a multivariate maximum demand equation for both summer and winter season separately over the last 14 years, using variables of Temperature (Maximum and minimum), Gross State Product (source Australian Bureau of Statistics-ABS), Air-conditioning Data (load) (Source Energy Consult) are obtained over the data set. These coefficients and equation is used to model demand. ○ Daily historical weather parameters (temperature maximums and minimums) are passed through the multivariate equation and maximum annual demand is obtained. ○ The listing of annual peak demand is made for all set of consistent temperature to produce an associated histogram ○ The annual peak demands were analysed / measured from the histogram to obtain 10 POE and 50 POE values. ○ In doing so, it was assumed that temperature correction using temperature data from all years is an appropriate technique applied to the current customer base to produce temperature corrected peak demand.
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information

Category Analysis RIN Basis of Preparation

Template 5.4 Maximum Demand and Utilisation at Spatial Level

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 5.4 Maximum Demand and Utilisation at Spatial Level of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CARIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 5.4 Maximum Demand and Utilisation at Spatial Level (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using Estimated Information in relation to Template 5.4 Maximum Demand and Utilisation at Spatial Level, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use Actual Information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

Furthermore, the below additional requirement/s were identified by Ergon Energy as requiring provision of additional information or attachment/s.

Table 1: Attachment/s to Basis of Preparation for Template 5.4 Maximum Demand and Utilisation at Spatial Level

Notice Reference	Requirement	Attachments
N/A	Please provide recast data for Table 5.4.1 for the years 2008-09 to 2016-17, on a consistent basis with your 2017-18 CA RIN response As agreed with the AER in May 2016, Ergon Energy has provided a Historical / Retrospective data series as per the requirements for template MD & utilisation-Spatial. This time series of data has been provided using the substation names in the current regulatory reporting year, with multiple years of data provided for that substation to allow trend analysis by the AER. Decommissioned substations will remain visible in the time-series provided, and new substations have been inserted in alphabetical order.	EE1516CA T5.4 MXDUS A1 - Max Demand & Utilisation. Spatial (Back cast)

This Basis of Preparation document should be read in conjunction with the information presented in Template 5.4 Maximum Demand and Utilisation at Spatial Level (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CARIN Templates.

Of note, the AER reissued CARIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle
General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Phone: (07) 3851 6416
Mobile: 0427 156 897

Template 5.4 Maximum Demand and Utilisation at Spatial Level

Table 5.4.1 – Non Coincident & Coincident Maximum Demand

Table 1: Addressing Minimum BOP requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has populated all variables for cells shaded yellow as required by the Notice. Of note, where an asset was not commissioned or de-commissioned for that regulatory year, the rating field is left blank. A 'zero' is a possible reading for maximum demand, therefore it would be inappropriate to enter 'zero' for demand prior to commissioning or following decommissioning. Where available and/or relevant, Ergon Energy has also provided data in relation to Substation Rating, Adjustments – Embedded Generation, Weather Corrected Maximum Demand (for both 10% PoE and 50% PoE). Alternatively, these cells (shaded orange allowing for 'blacking out' if such information was not collected) have been blacked out or left 'zero' in line with the abovementioned comment.
	Ergon Energy has prepared the information provided in Table 5.4.1 in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and Definitions in Appendix F to the Notice.
Population of Actual Information in templates	Ergon Energy has provided Actual Information, in accordance with the AER's definition, for all variables of Table 5.4.1. for a given substation (zone or subtransmission) where metering is available and functional for any given year.
Source of Actual Information	Actual information for the following variables was sourced from the Substation Investment Forecasting Tool (SIFT), a joint Ergon Energy / Energex solution for, among other requirements, the containing of data for the production of network demand forecasts and the process of developing the network demand forecasts. Load measurement data within SIFT is populated from NEM settlements data, SCADA readings, Network Statistical metering (same standard as NEM type 4) and for those substations where no CTs nor VTs exist MD values are simulated from retail billing data, deemed daily demand profiles and premises connection topology. The raw maximum demand used for weather correction is native demand. ▪ WEATHER CORRECTED MD 10% PoE ▪ WEATHER CORRECTED MD 50% PoE ▪ RAW ADJUSTED MD

Minimum Requirements	Ergon Energy Response
	▪ DATE MD OCCURRED ▪ HALF HOUR TIME PERIOD MD OCCURRED ▪ ADJUSTMENTS - EMBEDDED GENERATION. (Ergon Energy only has unscheduled Generation in the subtransmission network) ▪ WINTER/SUMMER PEAKING ▪ SUBSTATION RATING
Methodology and assumption's applied in relation to Actual Information	Relative to the provision of information in Template 5.4, Table 5.4.1 – Non-Coincident and Coincident Maximum Demand, Ergon Energy makes the following comments (including specific definitions of variables and sub categories applied): ▪ Those substations in group "SUBTRANSMISSION SUBSTATION" are Bulk Supply Substations which are wholly owned and maintained by Ergon Energy. ▪ No Transmission Connection Point (TCP) substations that supply Subtransmission voltages (>=66kV) have been listed. ▪ Transmission Connection Point (TCP) substations that supply distribution voltages (<=33kV) have been listed with the ZONE SUBSTATION grouping. ▪ Those substations that are privately owned have been listed as" (###) Private Substation" where '###' is a unique code used by Ergon Energy forecasters to explicitly identify the RIN entry for internal audit purposes. ▪ Those substations that are Ergon Energy owned and supply a single consumer have been listed as" (###) Private Substation" where '###' is a unique code used by Ergon Energy forecasters to explicitly identify the RIN entry for internal audit purposes. ▪ SUBSTATION RATING is taken to be the Normal Cyclic Capacity (NCC). NCC is the maximum permissible peak daily loading for a given load cycle that the substation can supply each day of its life. ▪ SUBSTATION RATING - Normal Cyclic Capacity (NCC) rating (in MVA) which does not vary between non-coincident and coincident peaks. Where no NCC rating is available, name-plate rating has been used for Ergon Energy assets, and Authorised Maximum Demand for customer-owned assets. Since using the SIFT solution as the source of the data for the CA_RIN the NCC rating is calculated slightly different. SIFT determines the smallest individual substation element NCC rating and multiplies this by the number of units installed at the substation. The previous CA_RIN simply summated the individual elemental NCC ratings at a substation. ▪ RAW ADJUSTED MD – Cleansed (of switching events) Native Demand. This is an aggregate of the "As Delivered" substation raw readings with any downstream embedded generation raw readings. Maximum demands are extracted both at time of Seasonal System Maximum Demand (COINCIDENT) and Substation Seasonal

Minimum Requirements	Ergon Energy Response
	Maximum Demand (NON-COINCIDENT). Effects of "temporary closure of major industrial customers" are not accounted for as Ergon Energy does not measure energy not supplied to a consumer. The MD reported is the highest average demand recorded over a half hour period within a season. ▪ Reported MVA values are at the time of RAW ADJUSTED MD MW readings. Ergon Energy currently does not store independent seasonal MVA peak readings. ▪ HALF HOUR TIME PERIOD MD OCCURRED – is the same as the NER definition of a "trading interval". The value reported for this variable is the 30 minute period ending on the hour or on the half hour over which the MD was recorded. The interval is identified by the *time* at which it ends. ▪ DATE MD OCCURRED – The date on which the native non-coincident and native coincident maximum demand of a substation was recorded in date format dd/mm/yyyy. ▪ WINTER/SUMMER PEAKING data reported aligns with Ergon Energy's own network demand forecasting cycles, under which Summer Peak is considered to occur in the period 1 October to 31 March inclusive while Winter Peak is considered to occur in the period 1 April to 30 September inclusive. This cannot correspond with the form of the definition of a regulatory year due to the seasonal nature of customer demand for energy on the network assets. For clarity, Ergon Energy forecasts with the latest available recorded annual maximum demands which are derived from measurements over the 12 month period ending summer. That is to say, for example, for the purpose of forecasting zone substation maximum demand, 2017-18 is the 12 month period ending 01/04/2018 00:00, of which winter MDs are recorded during period 01/04/2017 00:30 - 01/10/2017 00:00 and summer MDs are recorded during period 01/10/2017 00:30 - 01/04/2018 00:00. ▪ ADJUSTMENTS - EMBEDDED GENERATION – is the aggregation of embedded generation downstream of a substation. Maximum demands are extracted both at time of Annual System Maximum Demand (COINCIDENT) and aggregate embedded generation Seasonal Maximum Demand (NON-COINCIDENT). Only those sites where Ergon Energy has interval meters installed are used in this variable. A negative sign is used to indicate directional flow of energy, negative being energy delivered to the Ergon Energy network from the embedded generator (EG). ▪ COINCIDENT – variable measure at the time of Ergon Energy System Maximum Demand. ▪ NON-COINCIDENT – variable measured at time of substation or embedded generation annual maximum demand over the regulatory period. Of note, over the required period there have been a number of large

Minimum Requirements	Ergon Energy Response
	customer transfers to Powerlink Transmission Network Serv ice Provider (TNSP) from Ergon Energy Local Network Service Provider (LNSP). As this load has not disappeared from the Queensland economy and for consistency of demand-to-GSP correlation these Transmission Network Connected Premises (TNCP) have been removed from the history provided. These TNCP connections have been at transmission voltages, not involving Subtransmission substations or zone substation assets. The AER requirement is to include these TNCP load history where a segment of a Distribution Network Service Provider's (DNSP's) network is transferred to the TNSP. As there have been no asset transfers from Ergon Energy with these TNCP transfers the AER ruling is deemed to have been adhered to. **Weather Correction of Raw Readings:** Daily temperature maximum and minimum observations are obtained from the Bureau of Meteorology for weather stations within the Ergon Energy franchise area. Raw aggregate coincident Native (with energy supplied by downstream embedded generation) substation demands are sourced from the Statistical Metering Database (SMDB) and weather corrected using the following: Coefficients for a multivariate equation using variables of Temperature (Maximum and minimum), Saturday, Sunday and holidays are obtained over each year's data set. These coefficients and equation are used to model maximum demands. Historical weather parameters (temperature maximums and minimums) are passed through the multivariate equation to produce modelled daily peak demand commensurate with the daily temperatures. The daily demand figures were used to obtain annual peak demand figures over all previous temperature data sets. The annual peak demands were analysed to obtain 10 PoE and 50 PoE values for each year. In doing so, it was assumed that temperature correction using temperature data from all years is an appropriate technique applied to the current consumer base to produce temperature corrected peak demand. The magnitude of temperature correction to the peak MW demand, expressed as a ratio of that demand is applied to the raw MVA value to provide temperature adjusted peak demand in MVA.
Population of Estimated Information in Templates	Ergon Energy has used Estimated load readings when neither statistical metering nor SCADA is installed at a substation, or in cases where metering has failed for an extended period of time.

Minimum Requirements	Ergon Energy Response
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	In cases where neither statistical nor SCADA metering is installed at a substation, estimates of demand are derived from consumer billed kWh, deemed energy profiles and network topology. Readings from these substations will continue to be based on energy sales and deemed profiles until such time as plant replacement allows for the inclusion of SCADA. These substations are of a low installed capacity and base cost construction. In cases where metering has failed over long periods of time, estimates are derived from linear interpolation of like monthly readings and annual peaks drawn from these estimated monthly peaks.
How Estimated Information has been produced.	In cases where statistical metering has failed over long periods of time, estimates are derived from linear interpolation of like monthly readings (with a time stamp period the same as the previous year) and annual peaks drawn from these estimated monthly peaks. In these cases the time of peak is estimated to be the same as the previous.

Category Analysis RIN Basis of Preparation

Template 6.3 – Sustained Interruptions

1 July 2017 to 30 June 2018

Version Control

Version	Date	Description
1.0	31/10/18	Final as submitted to AER on 31 October 2018

Foreword

In response to requirements of the Australian Energy Regulator's (AER) Category Analysis Regulatory Information Notice (RIN), and specific to the information presented in Template 6.3 – Sustained Interruptions of Ergon Energy's completed 2017-18 Category Analysis RIN templates (2017-18 CARIN Templates), this Basis of Preparation document has been prepared by Ergon Energy with a view to:

- demonstrate how the information provided in relation to Template 6.3 – Sustained Interruptions (and associated Tables and/or variables) is consistent with the requirements of the Notice;
- explain the source from which Ergon Energy obtained the information provided in the template; and
- explain the methodology Ergon Energy applied to provide the required information, including any assumptions Ergon Energy made.

In circumstances where Ergon Energy has provided input using estimated information in relation to Template 6.3 – Sustained Interruptions, Ergon Energy has made comment herein as to:

- why an estimate was required, including why it was not possible to use actual information; and
- the basis for the estimate, including the approach used, assumptions made and reasons why the estimate is a best estimate, given the information sought in the Notice.

No additional requirements were identified as requiring provision of additional information or attachment/s over and above completed templates or Basis of Preparation.

This Basis of Preparation document should be read in conjunction with the information presented in Template 6.3 – Sustained Interruptions (Actual, Estimated or Consolidated) in Ergon Energy's completed 2017-18 CARIN Templates.

Of note, the AER reissued CARIN templates (but not a revised Notice) to Ergon Energy multiple times, the latest reissue occurring on 31 May 2018. The reissued (protected) templates allow for submission of the 2017-18 Regulatory Year data only. Regard has also been given to the clarification provided by the AER (24 October 2016) relative to ongoing compliance matters including auditing requirements, and specifically the provision of 'actuals' and 'estimates' (and exemptions therein).

In comparing the 2017-18 data to prior years, it should also be noted that the AER required Ergon Energy to provide category analysis information for the 2013-14 regulatory year as part of the Reset RIN process. Importantly, the Reset RIN required Ergon Energy to report information based on its new cost allocation methods (CAM) and classifications of service (CoS) to apply for the 2015-20 regulatory control period whereas all submitted annual Category Analysis RIN reporting (excepting 2013-14) were presented the 2014-15 (and years prior to 2013-14) data is presented using the CAM and CoS of the day. Whilst the AER considered compliance with the Reset RIN in relation to Category Analysis information as compliance with the Category Analysis RIN for the 2013-14 regulatory year, care should now be taken when comparing any RIN time series data.

Enquiries or further communications should be directed to:

Jenny Doyle - General Manager Regulation and Pricing
Email: jenny.doyle@energyq.com.au
Mobile: 0427 156 897

Template 6.3 – Sustained Interruptions

Table 6.3.1 - Sustained Interruptions to Supply (from 1 July 2015)

Table 1: Addressing Minimum BOP requirements

Minimum Requirements	Ergon Energy Response
Consistency with Notice requirements	Ergon Energy has prepared the information provided in Template 6.3 Sustained Interruptions, Table 6.3.1 - Sustained Interruptions to Supply in accordance with the Notice requirements, including the Principles and Requirements set out in Appendix E and definitions in Appendix F to the Notice. Ergon Energy has populated all variables for cells as required by the Notice. Table 6.3.1 contains both planned and unplanned, completed interruption events Table 6.3.1 contains sustained interruptions to supply applying the STPIS Appendix A, “inferred” definition of sustained interruption whereby the duration of interruption is greater than one minute. It is noted that the Notice provides an alternate definition of “sustained” interruption being greater than 0.5 seconds. [CA RIN Appendix E, 18.2] Table 6.3.1 contains information that is consistent with Appendix E, 18.4. Interruption events that are excluded under Clause 3.3 (a) of the STPIS are identified in the “Reason for interruption” field of Table 6.3.1. The events that excluded through application of Clause 3.3 (a) present “0” in the “Effect on unplanned SAIDI (by feeder classification)” and the “Effect on unplanned SAIFI (by feeder classification)” fields with Table 6.3.1. [CA RIN Appendix E, 18.4] An event caused by a customer’s electrical installation or failure of that electrical installation which only affects supply to that customer is not deemed an interruption as defined, “A sustained interruption is any loss of electricity supply to a customer associated with an outage of any part of the electricity supply network” STPIS 2009 and CA RIN Appendix E 18.2]. These events have been confirmed through site inspection to have resulted from faults and failures within the customer’s installation and as such are considered to be an event beyond the boundary of the electricity supply network and therefore excluded from Ergon Energy reported reliability performance under the STPIS. Therefore an event caused caused by a customer’s electrical installation or failure of that electrical installation present “0” ” in the “Effect on unplanned SAIDI (by feeder classification)” and the “Effect on unplanned SAIFI (by feeder classification)” fields with Table 6.3.1. Ergon Energy implemented system changes on 1 July 2015 to provide

Minimum Requirements	Ergon Energy Response
	detailed reason for interruption requirements of Table 6.3.1. actual data has been sourced directly from the interruption event record.
Population of Actual Information in templates	Ergon Energy has provided actual information that is sourced directly from the internal outage management system for the 2017-18 regulatory year. Where information is provided it is done so in accordance with the AER's definitions and applying the assumptions and methodology that is described within this Basis of Preparation.
Source of Actual Information	The data used to populate Table 6.3.1 has been sourced from outage event records within Ergon Energy's Outage Management System (FDRSTAT).
Methodology and assumption's applied in relation to Actual Information	Table 6.3.1 contains unplanned interruption events in which the required period of notice was not provided prior to interrupting customers. These events included interruptions to supply to allow "Forced Corrective Maintenance" activities required to address emerging and identified equipment defects in order to prevent the occurrence of a wider spread interruption event or to prevent the occurrence of an equipment failure that results in a safety risk to personnel and the public. [CA RIN Appendix E, 18.3] Interruption events that occurred on a nominated Major Event Day (MED) are identified in the "MED" field of Table 6.3.1 and represented by "YES" in this column. The events that occur on a nominated MED present the contribution of the event to the feeder classification SAIDI and SAIFI in columns J and K of Table 6.3.1. [CA RIN Appendix E, 18.4] In order to obtain the information for the year 2017-18, Ergon Energy applied the following assumptions: ▪ The sustained interruption definition is intended to align with the STPIS definition of duration greater than one minute (Appendix A of the SPTIS). The methodology applied to provide the information in response to the Notice for the regulatory year 2017-18: ▪ Date of event – extracted from OMS outage table, field – ACT_START_DATETIME, date that the interruption event commenced ▪ Time of interruption – extracted from OMS outage asset and OMS outage asset history tables, field – ACT_TIME_OFF- represents the time the first customer was interrupted ▪ Asset ID – extracted from OMS outage asset and OMS outage asset history tables, field FEEDER_ID ▪ Feeder classification (CBD, Urban, Short Rural, Long Rural) – determined in accordance with STPIS Appendix A Definitions ▪ Reason for interruption – extracted from the OMS outage table, field CAUSE_CODE_ID (Trigger) – translated to match Table 6.3.1 requirements

Minimum Requirements	Ergon Energy Response
	▪ Detailed reason for interruption - extracted from the OMS outage table, field CAUSE_CODE_ID (Trigger) – translated to match Table 6.3.1 requirements ▪ Number of customers affected by the interruption – OMS outage asset and OMS outage asset history tables, field – CUSTOMER_COUNT ▪ Average duration of sustained customer interruption – Calculated as the ratio of aggregate customer minutes interrupted and number of customers interrupted – source data from – OMS outage asset and OMS outage asset history tables ▪ "Effect on unplanned SAIDI (by feeder classification):" Calculation is the sustained unplanned customer minutes experienced on the Feeder DIVIDED BY average number of customers of the feeder's classification. (planned, and other STPIS excluded events have no effect on unplanned SAIDI or SAIFI and as such will be reported as '0'.) ▪ Effect on unplanned SAIFI (by feeder classification): Calculation is the sustained unplanned customers interrupted on the Feeder DIVIDED BY average number of customers of the feeder's classification. (planned and other STPIS excluded events have no effect on unplanned SAIDI or SAIFI and as such will be reported as '0'.) ▪ MED – Major Event Days are identified through application of the methodology described in Appendix D of the STPIS
Population of Estimated Information in Templates	Not applicable. Ergon Energy has provided Actual Information
Why is it not possible to provide Actual Information, and why Estimates are required, including reasons why Estimates are Ergon Energy's best estimates.	Not applicable. Ergon Energy has provided Actual Information
How Estimated Information has been produced.	Not applicable. Ergon Energy has provided Actual Information