

Energex Reset RIN Schedule 1 response

Energex Limited
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Introduction

1.1 Purpose and contents

The purpose of this document is to identify where Energex Limited (Energex) has addressed each requirement of Schedule 1 of the reset Regulatory Information Notice (RIN) issued on 31 October 2018.

Table 1 in Section 2 of this document identifies the Schedule 1 requirement and Energex's response. The majority of responses are addressed in documents submitted to the Australian Energy Regulator (AER) in support of Energex's Regulatory Proposal. In these cases, the response provided refers to a document or model in our document register. In other cases, Energex has directly responded to the relevant Schedule 1 requirement in the table without further references. Where the Schedule 1 requirement does not directly seek a response, the relevant rows have been greyed out in Table 1.

Section 3 of this document provides a description of each material assumption as required by clause 1.5 of Schedule 1 of the RIN.

2 Table of responses to Schedule 1

Table 1: Response to Schedule 1 requirements

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
1	PROVIDE INFORMATION	
1.1	Provide the information required in each regulatory template in the Microsoft Excel Workbook 1 – Regulatory determination, Workbook 2 – New category analysis, Workbook 5 - EBSS and Workbook 7 - Indicative Bill Impact, completed in accordance with:	<p>Energex has provided the information required in each of the regulatory templates in the following documents:</p> <ul style="list-style-type: none"> • 2020-25 Regulatory Determination RIN template (Attachment 17.046) • 2020-25 New Historical Category Analysis RIN template (Attachment 17.047) • 2020-25 Efficiency Benefit Sharing Scheme RIN template (Attachment 17.050) • 2020-25 Capital Expenditure Sharing Scheme RIN template (Attachment 17.051), and • 2020-25 Indicative Bill Impact RIN template (Attachment 17.052).
1.1(a)	this notice;	Refer to response 1.1 noting that Energex has provided information in regulatory templates of the specified workbooks attached at Appendix A to the RIN. The information provided has been prepared in accordance with the AER's RIN.
1.1(b)	the instructions in the relevant Microsoft Excel Workbook attached at Appendix A;	Refer to response 1.1 noting that Energex has provided information in regulatory templates of the specified workbooks attached at Appendix A to the RIN. The information provided has been prepared in accordance with instructions in the relevant workbook and/or template.
1.1(c)	the instructions in Appendix E;	Refer to response 1.1 noting that Energex has provided information in regulatory templates of the specified workbooks attached at Appendix A to the RIN. The information provided has been prepared in accordance with relevant instructions in Appendix E.
1.1(d)	the service classifications set out in the framework and approach paper; and	Refer to response 1.1 noting that Energex has provided information in regulatory templates of the specified workbooks attached at Appendix A to the RIN. The information provided has been completed in accordance with the AER's proposed service classifications as set out in the final Framework and Approach paper dated July 2018. Refer to https://www.aer.gov.au/networks-

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		pipelines/determinations-access-arrangements/Energex-determination-2020-25/aer-position
1.1(e)	Energex's cost allocation method.	Refer to response 1.1 noting that Energex has provided information as required in the regulatory templates of the specified workbooks attached at Appendix A to the RIN. The information provided has been completed in accordance with the Cost Allocation Method (CAM) approved by the AER on 22 November 2018. Refer to Attachment 6.004
1.1A	Provide the information required in each regulatory template in the Microsoft Excel Workbook 5 – EBSS, and Workbook 6 – CESS, completed in accordance with:	Energex has provided information required in each of the regulatory templates in the following documents: <ul style="list-style-type: none"> • 2020-25 Efficiency Benefit Sharing Scheme RIN template (Attachment 17.050), and • 2020-25 Capital Expenditure Sharing Scheme RIN template (Attachment 17.051).
1.1A(a)	this notice;	Refer to response 1.1A noting that Energex has provided information in regulatory templates of the specified workbooks. The information provided has been prepared in accordance with the AER's RIN.
1.1A(b)	the instructions in the relevant Microsoft Excel Workbook attached at Appendix A;	Refer to response 1.1A noting that Energex has provided information in regulatory templates of the specified workbooks. The information provided has been prepared in accordance with the AER's instructions in the relevant Microsoft Excel Workbook attached at Appendix A.
1.1A(c)	the instructions in Appendix E;	Refer to response 1.1A noting that Energex has provided information in regulatory templates of the specified workbooks. The information provided has been prepared in accordance with the AER's instructions in Appendix E.
1.1A(d)	the service classifications that applied in each regulatory year; and	Refer to response 1.1A noting that Energex has provided information in regulatory templates of the specified workbooks. The information provided has been prepared in accordance with the service classifications that applied in each regulatory year.
1.1A(e)	Energex's cost allocation method that applied in each regulatory year.	Refer to response 1.1A noting that Energex has provided information in regulatory templates of the specified workbooks. The information provided has been prepared in accordance with the CAM that applied in each regulatory year.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
1.2	If:	
1.2(a)	Energex's cost allocation method has changed during the current regulatory control period, or	A revised CAM applicable for the period 1 July 2018 to 30 June 2020 was approved by the AER on 22 November 2018. The change was to give effect to the updated organisational structure.
1.2(b)	Energex's service classifications have changed from the current regulatory control period, or	There have been some service classification changes from the current regulatory control period. The materiality (or otherwise) of the impacts of these changes is discussed in the Basis of Preparation for recast information (refer to response 1.3).
1.2(c)	Energex proposes to divert from the service classifications set out in the relevant framework and approach paper, or	Energex has largely retained the service classifications as set out in the final Framework and Approach paper dated July 2018, but applied the service groupings and descriptions set out in the AER's Service Classification Guideline published in September 2018. Refer to Chapter 4 of our Regulatory Proposal and Attachment 4.004.
1.2(d)	Energex proposes to change its cost allocation method for the forthcoming regulatory control period;	Energex's CAM for the forthcoming regulatory control period was approved by the AER on 22 November 2018. A number of changes have occurred with the application of the new CAM for the forthcoming regulatory control period. The materiality (or otherwise) of the impacts of these changes is discussed in the Basis of Preparation for recast information (refer to response 1.3).
1.2	such that there would be material changes to information previously submitted to the AER Energex must use the regulatory templates in Workbook 3 – Recast category analysis and Workbook 4 – Recast economic benchmarking attached at Appendix A to submit revised historical information.	Refer to response 1.2(b) and 1.2(d) – as a result of changes to the Classification of Services and CAM applicable in the forthcoming regulatory control period Energex has identified some material changes to information previously submitted to the AER. Accordingly, Energex has provided revised historical information in the regulatory templates of the specified workbooks in the following documents: <ul style="list-style-type: none"> • 2020-25 Recast Category Analysis RIN template (Attachment 17.048), and • 2020-25 Recast Economic Benchmarking RIN template (Attachment 17.049). A Basis of Preparation has been provided relative to any recast information provided in the templates for these workbooks (refer response to 1.3).
1.3	For all information, other than forecast information, provide in accordance with this notice and the	Energex has provided a Basis of Preparation for all information other than forecast information in accordance with this notice and the instructions in Appendix E, as found in the following

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	instructions in Appendix E, a basis of preparation demonstrating how Energex has complied with this notice in respect of:	<p>documents:</p> <ul style="list-style-type: none"> • Basis of Preparation - Regulatory Determination (Attachment 17.005) • Basis of Preparation - New Historical Category Analysis (Attachment 17.006) • Basis of Preparation - Recast Category Analysis (Attachment 17.007) • Basis of Preparation - Recast Economic Benchmarking (Attachment 17.008) • Basis of Preparation - EBSS (Attachment 17.009) • Basis of Preparation - CESS (Attachment 17.17.010), and • Other attachments to Schedule 1, as referenced in the relevant responses.
1.3(a)	the information in each regulatory template in the Microsoft Excel Workbooks attached at Appendix A; and	Refer response to 1.3. Energex has provided a Basis of Preparation in relation to all historical information contained in regulatory templates within the Microsoft Excel Workbooks attached at Appendix A to the AER's RIN.
1.3(b)	the information prepared in accordance with the following requirements in Schedule 1 of this notice:	
1.3(b)(i)	paragraph 1.2	Refer to response 1.3, noting Energex has provided a Basis of Preparation in relation to requirements in Schedule 1 Paragraph 1.2 of the AER's RIN notice. The information is in the 2020-25 Recast Category Analysis RIN template (Attachment 17.007), and the 2020-25 Recast Economic Benchmarking RIN template (Attachment 17.008).
1.3(b)(ii)	paragraph 5.1(a)(ii)	Refer to 'Repex Model Supporting Information' document (Attachment 17.029).
1.3(b)(iii)	paragraph 8.5	Refer to 'Demand Management Regulatory Proposal (2020-2025)' document, specifically Appendix One (Attachment 7.051).
1.3(b)(iv)	paragraph 13 (13.5 and 13.6)	Refer to response provided in paragraph 13.5 and paragraph 13.6, including supporting information provided in relation to paragraph 13, Alternative Control Services.
1.3(b)(v)	paragraph 15 (15.2 and 15.3)	Refer to responses provided in paragraphs 15.2 and 15.3.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
1.3(b)(vi)	paragraph 16 (16.2-16.7, 16.10)	Refer to responses provided in paragraphs 16.2 -16.7 and 16.10.
1.4	Provide material used for the purposes of preparing the regulatory proposal:	
1.4(a)	all consultants' reports commissioned and relied upon in whole or in part;	Where Energex has relied upon consultant reports these have been identified in the 'Document Register' (Attachment 1.008). Where the author of document is a consultant, this has been made clear in the file name as required.
1.4(b)	all material assumptions relied upon;	Material assumptions relied upon by Energex the purposes of preparing the regulatory proposal have been disclosed in Section 3 of this document.
1.4(c)	a table that references each response to a paragraph in this Schedule 1 and where it is provided in or as part of the regulatory proposal;	This table has been designed to provide the AER with the information in the form required.
1.4(d)	a table that references each document provided in or as part of the regulatory proposal and its relationship to other documents provided; and	Refer to 'Document Register' (Attachment 1.008) which references each document provided by Energex in or as part of the Regulatory Proposal and its relationship to other documents provided.
1.4(e)	each document identified in paragraph 1.4(d) must be given a meaningful filename in the form: Energex- [Author] – [title] – [date] – [public/confidential], where:	Refer to response 1.4(d) - each document referenced has been given a meaningful filename in accordance with instructions in the AER's RIN.
1.4(e)(i)	Author is the author of the file if not Energex, for example a consultant or other third party;	Refer to response 1.4(d) - each document referenced has been given a filename which notes where the author is a consultant or third party, in accordance with instructions in the AER's RIN. Of note, where the author is Energex this has not been repeated twice in the title.
1.4(e)(ii)	Title provides a meaningful description of the content of document, with limited reliance on acronyms or cross references, for example "Appendix 1A" is not meaningful, but "Appendix 1A – Cost allocation method" is;	Refer response to 1.4(d) - each document referenced has been given a title in accordance with instructions in the AER's RIN.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
1.4(e)(iii)	Date is a relevant date associated with the file, generally the date the document was created;	Refer to response 1.4(d) - each document referenced has been given a creation date in accordance with instructions in the AER's RIN.
1.4(e)(iv)	Public/confidential identifies if the file in its entirety can be published (public); or if it contains any information which is the subject of a claim for confidentiality in accordance with paragraph 32 of this notice (confidential).	Refer to response 1.4(d) - each document referenced has been given a filename in accordance with instructions in the AER's RIN, which makes clear whether the file is public or confidential in nature. Refer also to responses 34.3 and 35.1 relating to Confidential Information.
1.5	Provide for each material assumption identified in the response to paragraph 1.4(b):	
1.5(a)	its source or basis;	Refer to response 1.4(b) - the source or basis of each material assumptions relied upon for the purposes of preparing the regulatory proposal has been disclosed in Section 3 of this document.
1.5(b)	if applicable, its quantum;	Refer to response 1.4(b) - if applicable, the quantum of each material assumption relied upon has been disclosed in Section 3 of this document.
1.5(c)	whether and how the assumption has been applied and was taken into account; and	Refer to response 1.4(b) – whether and how each material assumption has been applied and was taken into account by the Energex has been disclosed in Section 3 of this document.
1.5(d)	the effect or impact of the assumption on the capital and operating expenditure forecasts in the forthcoming regulatory control period taking into account:	
1.5(d)(i)	the actual expenditure incurred during the current regulatory control period; and	Refer to response 1.4(b) and Section 3 of this document.
1.5(d)(ii)	the sensitivity of the forecast expenditure to the assumption.	Refer to response 1.4(b) and Section 3 of this document.
1.6	Provide reconciliation of the capital and operating	Capital and operating expenditure forecasts provided in the regulatory templates have been

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	expenditure forecasts provided in the regulatory templates to the proposed capital and operating allowances in the post-tax revenue model for the forthcoming regulatory control period.	reconciled to the information in the post-tax revenue model (PTRM) in the model in the “Reset RIN Population Model” (Attachment 17.065).
1.7	Where the regulatory proposal varies or departs from the application of any component or parameter of the capital efficiency sharing scheme, efficiency benefit sharing scheme, demand management incentive scheme or service target performance incentive scheme as set out in the framework and approach paper, for each variation or departure explain:	
1.7(a)	the reasons for the variation or departure, including why it is appropriate;	Refer to Chapters 4 and 11 of Energex’s Regulatory Proposal. Energex has not proposed any variations or departures to the AER’s application of incentive schemes as set out in the final Framework and Approach paper dated July 2018.
1.7(b)	how the variation or departure aligns with the objectives of the relevant scheme; and	Refer to response 1.7(a). Energex has not proposed any variations or departures to the AER’s application of incentive schemes as set out in the final Framework and Approach.
1.7(c)	how the proposed variation or departure will impact the operation of the relevant scheme.	Refer to response 1.7(a). Energex has not proposed any variations or departures to the AER’s application of incentive schemes as set out in the final Framework and Approach.
2	CLASSIFICATION OF SERVICES	
2.1	Identify each proposed service classification in the regulatory proposal which departs from a service classification set out in the framework and approach paper and explain:	Refer to Chapter 4 of Energex’s Regulatory Proposal. Energex has largely retained the service classifications as set out in the final Framework and Approach paper dated July 2018, but applied the service groupings and descriptions set out in the AER’s Service Classification Guideline published in September 2018.
2.1(a)	the reasons for the departure, including why the proposed service classification is more appropriate; and	Refer to response 2.1. Energex has largely retained the service classifications as set out in the final Framework and Approach paper dated July 2018, but applied the service groupings and descriptions set out in the AER’s Service Classification Guideline published in September

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		2018.
2.1(b)	how the treatment of the service will differ under the proposed service classification in comparison to that in the framework and approach paper.	Refer to response 2.1. Energex has largely retained the service classifications as set out in the final Framework and Approach paper dated July 2018, but applied the service groupings and descriptions set out in the AER's Service Classification Guideline published in September 2018.
2.2	If the proposed service classifications in the regulatory proposal depart from any of the service classifications set out in the framework and approach paper:	
2.2(a)	provide, in a second set of regulatory templates, all information required in each regulatory template in accordance with the instructions contained therein, modified as necessary, to incorporate the proposed service classifications; and	Refer to response 2.1. Energex has largely retained the service classifications as set out in the final Framework and Approach paper dated July 2018, but applied the service groupings and descriptions set out in the AER's Service Classification Guideline published in September 2018.
2.2(b)	identify and explain where the regulatory templates differ.	Refer to response to 2.1. Energex has largely retained the service classifications as set out in the final Framework and Approach paper dated July 2018, but applied the service groupings and descriptions set out in the AER's Service Classification Guideline published in September 2018.
3	CONTROL MECHANISMS	
3.1	For the forecast revenues that Energex proposes to recover from providing direct control services over the forthcoming regulatory control period provide:	
3.1(a)	formulaic expressions for the basis of control mechanisms for standard control services and for alternative control services; and	Energex has set out formulaic expressions for the basis of control mechanisms for standard control services (SCS) and for alternative control services (ACS) in the 'Control Mechanisms' document (Attachment 4.001).
3.1 (b)	a detailed explanation and justification for each	Refer to 3.1(a). Energex has explained and justified each component of the formulae in the

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	component that makes up the formulaic expression.	'Control Mechanisms' document (Attachment 4.001).
3.2	Also demonstrate:	
3.2(a)	how Energex considers the control mechanisms are compliant with the framework and approach paper; and	Refer to the 'Control Mechanisms' document (Attachment 4.001).
3.2(b)	for standard control services, how Energex considers the control mechanisms are also compliant with clause 6.2.6 and Part C of Chapter 6 of the NER.	Refer to the 'Control Mechanisms' document (Attachment 4.001).
4	CAPITAL EXPENDITURE	
	General	
4.1	Provide justification for Energex total forecast capex, including the following information:	
4.1(a)	why the total forecast capex is required for Energex to achieve each of the objectives in clause 6.5.7(a) of the NER;	<p>Refer to Attachment 1.006 which provides a justification for how Energex's total forecast capital expenditure (capex) achieved the objectives in 6.5.7(a) of the National Electricity Rules (NER).</p> <p>Energex has built a bottom-up capex forecast which has been challenged by various top-down checks and modelling, business reviews, and customer feedback. The resultant capex forecast is an optimised portfolio balancing customer outcomes and performance, risk, and cost.</p> <p>For supporting details refer to Chapter 7 of our Regulatory Proposal and supporting information in our Asset Management Overview, Risk and Optimisation document (Attachment 7.026).</p>
4.1(b)	how Energex's total forecast capex reasonably reflects each of the criteria in clause 6.5.7(c) of the NER;	<p>Refer to Attachment 1.006 which provides a justification for how Energex's total forecast capex reasonably reflects each of the criteria in 6.5.7(c) of the NER.</p> <p>For further information refer to Chapter 7 of our Regulatory Proposal, specifically, section 7.5 which provides an overview of our expenditure forecasting methodology.</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
4.1(c)	how Energex's total forecast capex accounts for the factors in clause 6.5.7(e) of the NER;	<p>Refer to Attachment 1.006 which provides a justification for how Energex's total forecast capex accounts for the factors in 6.5.7(e) of the NER.</p> <p>For further information refer to Chapter 7 of Energex's Regulatory Proposal.</p>
4.1(d)	an explanation of how the plans, policies, procedures and regulatory obligations or requirements identified in Workbook 1 – regulatory determination, regulatory templates 7.1 and 7.3 have been used to develop forecast capex; and	<p>Energex's Expenditure Forecasting Methodology (Attachment 4.002) provides a summary of the methodology used to develop our forecast capex. Energex's Asset Management System is underpinned by our Asset Management Policy - Attachment 7.045 and Strategic Asset Management Plans - Attachments 7.002, 7.090 and 7.144 which also outline the decision making framework.</p> <p>Supporting this are:</p> <ul style="list-style-type: none"> • Asset Management Plans (supporting attachments 7.027 through to 7.044) • Network Strategies (supporting attachments 7.047, 7.048, 7.080 and 7.089), and • Strategic Proposals and Business Cases (supporting attachments 7.055, 7.091, 7.093, 7.094, 7.096, 7.097, 7.099, 7.008-7.025 and 7.137-7.142). <p>The Asset Management Risk and Optimisation document (Attachment 7.026) provides an overview of how the forecast network capex program is developed and administered.</p> <p>Other policies, strategies and procedures referenced in templates 7.1 and 7.3 that support achievement of the asset management objectives and customer service levels are available upon request.</p>
4.1(e)	an explanation of how each response provided to paragraph 4.1 (a)-(d) is reflected in any increase or decrease in expenditures or volumes, particularly between the current and forthcoming regulatory control periods, provided in Workbook 1 – regulatory determination, regulatory templates 2.1 to 2.11.	<p>The changes in Energex's capital expenditure between the current and forthcoming period are explained in Chapter 7 of the Regulatory Proposal.</p>
4.2	Provide the model(s) and methodology Energex used to develop its total forecast capex, including:	<p>Energex's Forecasting Methodology is set out in Attachment 4.002). Energex has also provided:</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<ul style="list-style-type: none"> • Capex forecast – SCS model (Attachment 7.153) • Capex forecast – ACS Metering model (Attachment 15.007) • Capex forecast – ACS Public lighting conventional (Attachment 15.031), and • Capex forecast – ACS Public lighting LED (Attachment 15.033). <p>Further details of Energex’s forecasting methodology for capex has also been outlined in Chapter 7 of our Regulatory Proposal.</p>
4.2(a)	A description of how Energex prepared the forecast capex, including:	
4.2(a)(i)	how its preparation differed or related to budgetary, planning and governance processes used in the normal operation of Energex’s business;	<p>Energex has used largely existing budgetary, planning and governance process to develop the forecast capex proposal. Energex developed a seven year program of work consistent with existing process, undertook a detailed examination and challenge of the proposed program as part of the optimisation process. For further detail refer to the ‘Asset Management Overview, Risk & Optimisation Strategy’ document (Attachment 7.026).</p> <p>Customer feedback also informed the optimised capex forecast with early consultation with customers and engagement on Energex’s draft plan for the forthcoming regulatory period.</p>
4.2(a)(ii)	the processes for ensuring amounts are free of error and other quality assurance steps; and	<p>Considerable work was undertaken to build the bottom up program and optimised investment forecast to 2025, utilising a Program of Work governance process.</p> <p>Candidate work was identified grounded on a risk based approach and loaded into the corporate portfolio, program and project management tools. Numerous iterations or scenarios on the composition of the overall program were considered and underwent staged review and top-down checks and challenge, together with management reviews to produce an optimised program for delivery.</p> <p>Energex’s quality assurance process for data and models involved staged peer review, together with management review and sign-off.</p>
4.2(a)(iii)	if and how Energex considered the resulting amounts, when translated into price impacts, were in the long-term interest of consumers.	<p>Energex examined whether the proposed capital program is in the long-term interests of customers by engaging with customers to achieve a balance of our customer commitments; affordable, secure, and sustainable. Relevant factors such as price impact, safety outcomes</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>and service quality were considered by customer groups in these engagement sessions.</p> <p>Customer feedback also informed the optimised capex forecast with early consultation with customers and engagement on Energex’s draft plan for the forthcoming regulatory period.</p> <p>Further information may be found in the capital expenditure chapter of the regulatory proposal, and how the forecast capex differs from Our Draft Plans is outlined in the Overview of Our Regulatory Proposals.</p>
4.2(b)	any source material used (including models, documentation or any other items containing quantitative data); and	<p>Source material has been documented in:</p> <ul style="list-style-type: none"> • Asset Management Plans (supporting attachments 7.027 through to 7.044 and 7.090) • Network Strategies (supporting attachments 7.047, 7.048, 7.080 and 7.089) • Strategic Proposals and Business Cases (supporting attachments 7.055, 7.091, 7.093, 7.094, 7.096, 7.097, 7.099, 7.008-7.025 and 7.137-7.142). • Unit Cost Methodology (Attachment 7.005) • The bottom up build of the capex program of work is represented in corporate portfolio, program and project management tools.
4.2(c)	calculations that demonstrate how data from the source material has been manipulated or transformed to generate data provided in the regulatory templates in Workbook 1 – Regulatory determination.	The calculations to transform source material can be found in the “Reset RIN Population Model” (Attachment 17.065).
4.3	Identify which items of Energex’s forecast capex are:	
4.3(a)	derived directly from competitive tender processes;	Our cost estimates for projects in our forecast capex are not derived directly from competitive tender processes. However, our cost estimation methodologies rely on historical experience with delivering projects and programs of a similar scope.
4.3(b)	based upon competitive tender processes for similar projects;	When developing our cost estimates for proposed capital projects we have considered the historical cost of completing projects of a similar nature, including where an external party has

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		delivered the project under a competitive tender process. In particular, our unit cost estimates for building new zone substations has relied (to a degree) on actual costs of external parties that have tendered for the project under either competitive tender, or through a panel arrangement.
4.3(c)	based upon estimates obtained from contractors or manufacturers;	For major projects we have used a bottom up approach to estimate costs, which includes consideration of contractor and manufacturer estimates in the past. We note that we have panel arrangements in place under our procurement processes, and continually test the market.
4.3(d)	based upon independent benchmarks;	Energex does not develop a capex forecast based on external benchmarks costs. Our cost estimation approach is focused on developing estimates to deliver a scope of work. These costs have been tested
4.3(e)	based upon actual historical costs for similar projects; and	We have used averages of historical costs to determine the forecast unit rates for volume driven work including smaller projects and for “pooled” programs such as our pole replacement program.
4.3(f)	reflective of any amounts for risk, uncertainty or other unspecified contingency factors, and if so, how these amounts were calculated and deemed reasonable and prudent.	The Standard Control Service System (network) capital expenditure portfolio is developed and approved excluding consideration of project risk estimates or uncertainty. We have no unspecified contingency factors.
4.4	Provide all documents which were materially relied upon and relate to the deliverability of forecast capex and explain the proposed deliverability.	We have not relied on any specific documents to show that the forecast capex can be delivered. However, we note that Energex is well placed to deliver the proposed capital program. This is demonstrated by our delivery of a capital program in the current period that is higher than our forecast for the next period.
	Capex categories	
4.5	Describe each capex category and expenditures comprising these categories identified in the regulatory templates, including:	Refer to Chapter 7 of our Regulatory Proposal and the ‘Expenditure Forecasting Method’ (Attachment 4.002) which provide a general descriptions and definitions of each capex category in the regulatory templates.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
4.5(a)	key drivers for expenditure;	Refer to Chapter 7 of our Regulatory Proposal and the 'Expenditure Forecasting Method' (Attachment 4.002) which describe the key drivers of expenditure for each AER capex categories.
4.5(b)	an explanation of how expenditure is distinguished between:	
4.5(b)(i)	greenfield driven and reinforcement driven augmentation capex;	<p>Energex's augmentation capex solutions to identified constraints may either be the construction of new electrical assets where they don't currently exist, which we interpret as "greenfield", or increasing the capacity of existing assets, which Energex interprets as "reinforcement".</p> <p>This is consistent with Reset RIN 2.3(b) categorisation.</p>
4.5(b)(ii)	connections expenditure and augmentation capex;	Connections capex is required to service new, altered or upgraded connections for residential, commercial and industrial customers at their request. In contrast, a component of augmentation capex is driven by forecast network constraints, caused by population growth, specific development or load increases within localised parts of our distribution network, or growth in peak demand. The distinction is addressed in Chapter 9 of our Regulatory Proposal.
4.5(b)(iii)	replacement capex driven by condition and asset replacements driven by other drivers (e.g. the need for greenfield and reinforcement driven augmentation capex); and	Refer to Chapter 7 of our Regulatory Proposal.
4.5(b)(iv)	any other capex category or opex category where Energex considers that there is reasonable scope for ambiguity in categorisation.	<p>The Low Voltage Network Safety program has been categorised and forecast by Energex as replacement expenditure as there is an interaction with the traditional like-for-like asset replacement of overhead low voltage services. Refer to Chapter 7 of the Regulatory Proposal for a description of the drivers of this program, and the 'LV Network Safety strategic proposal' (Attachment 7.093) for detail.</p> <p>Energex has not identified any other ambiguities.</p>
5	REPLACEMENT CAPITAL EXPENDITURE MODELLING	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
5.1	In relation to information provided in Workbook 1 – Regulatory determination, regulatory template 2.2 and with respect to the AER’s repex model, provide:	
5.1(a)	For individual asset categories set out in the regulatory templates, provide in a separate document:	
5.1(a)(i)	a description of the asset category, including:	The description of individual asset categories relating to template 2.2 can be found in the ‘Repex Model Supporting Information’ document (Attachment 17.029). Energex has used the same definitions for forecast information in completing template 2.2 of Workbook 1, 2020-25 Regulatory Determination RIN template (Attachment 17.046)
5.1(a)(i)(A)	the assets included and any boundary issues (i.e. with other asset categories);	Boundary issues have been discussed in Energex’s description of template 2.2 in the ‘Repex Model Supporting Information’ document (Attachment 17.029) section 2.1.1.
5.1(a)(i)(B)	an explanation of how these matters have been accounted for in determining quantities in the age profile;	In general, boundary issues have not impacted the quantities in the age profiles. Refer to ‘Repex Model Supporting Information’ (Attachment 17.029) section 2.1.2. An exception relates to overhead conductor age which is calculated based on pole age.
5.1(a)(i)(C)	an explanation of the main drivers for replacement (e.g. condition); and	Refer to Chapter 7 of our Regulatory Proposal for a description of the overarching drivers for replacement. Energex’s Asset Management Plans provide further detail on our main drivers of replacement by asset category (Attachments 7.027 to 7.044).
5.1(a)(i)(D)	an explanation of whether the replacement unit cost provides for a complete replacement of the asset, or some other activity, including an extension of the asset’s life (e.g. pole staking) and whether the costs of this extension or other activity are capitalised or not.	In general, Energex’s cost estimate relates to the complete replacement of the asset. An exception relates to the staking of wooden poles which provides a life extension and is capitalised.
5.1(a)(ii)	an estimate of the proportion of assets replaced for each year of the current regulatory control period,	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	due to:	
5.1(a)(ii)(A)	aging of existing assets (e.g. condition, obsolesce, etc.) that should be largely captured by this form of replacement modelling;	Refer to 'Repex Model Supporting Information' document (Attachment 17.029) section 2.2.1.
5.1(a)(ii)(B)	replacements due to other factors (and a description of those factors);	Refer to the 'Repex Model Supporting Information' document (Attachment 17.029) section 2.2.2. Energex's Asset Management Plans provide further detail on the main drivers of replacement by asset category (Attachments 7.027 to 7.044).
5.1(a)(ii)(C)	additional assets due to the augmentation, extension, development of the network; and	Refer to 'Repex Model Supporting Information' document (Attachment 17.029) section 2.2.3.
5.1(a)(ii)(D)	additional assets due to other factors (and a description of those factors).	In replacing assets, Energex is likely to use different technology and modern equipment relative to the original design of the asset being replaced. However, the asset would still perform the same function. In some cases, Energex's network standards may require a different standard or design compared to the asset being replaced. Refer to response to 4.5(b)(iv) whereby the LV Network Safety strategic proposal discusses introduction of additional assets to address safety risks as well as enable life extension of existing assets.
5.1(b)	For the previous, current and forthcoming regulatory control periods, explain the drivers or factors that have changed network replacement expenditure requirements. Identify and quantify the relative effect of individual matters within the following categories:	
5.1(b)(i)	rules, codes, licence conditions, statutory requirements;	Refer to Chapter 7 of our Regulatory Proposal for a description of the drivers and factors that have impacted capex (including network replacement expenditure requirements). Replacement capital expenditure has also been sub-categorised within the capex chapter of the regulatory proposal as follows:

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>Condition and risk – proactive replacement of high risk assets which have been identified as approaching the end of their lifecycle.</p> <p>Reactive – replacement projects and programs driven predominately by inspection and in-service failure.</p>
5.1(b)(ii)	internal planning and asset management approaches;	<p>Refer to the Chapter 7 of our Regulatory Proposal.</p> <p>Energex’s Asset Management Plans provide further detail on the main drivers of replacement by asset category (Attachments 7.001 to 7.044).</p>
5.1(b)(iii)	measurable asset factors that affect the need for expenditure in this category (e.g. age profiles, risk profiles, condition trend, etc.). Identify and quantify individual factors;	<p>Energex’s Asset Management Plans provide further detail on the main drivers of replacement by asset category (Attachments 7.027 to 7.044).</p>
5.1(b)(iv)	the external factors that can be forecast and the outcome measured (e.g. demand growth, customer numbers) that affect the need for expenditure in this category. Identify and quantify individual factors, covering the forecasts and the outcome (external factors to be discussed here do not relate to changing obligations which are covered in paragraphs 11.3 and 11.8);	<p>Refer to the Asset Management Plans which provide further detail on the factors influencing replacement (Attachments 7.027 to 7.044)</p>
5.1(b)(v)	technology/solutions to address needs, covering:	
5.1(b)(v)(A)	network; and	<p>Chapter 7 of our Regulatory Proposal notes that some of Energex’s forecast replacement capex is driven by technical obsolescence, including where vendor or manufacturer support has been withdrawn and spares are exhausted. These issues particularly impact protection and control, and secondary systems assets where unavailability of support and/or spares can result in extended outages.</p> <p>For further information refer to response to 4.5(b)(iv) whereby the LV Network Safety strategic proposal discusses use of technology to address safety risks as well as enable life extension of existing assets.</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		Energex's Asset Management Plans also provide further detail on future technology considerations by asset category (Attachments 7.027 to 7.044).
5.1(b)(v)(B)	non-network.	Energex has not identified a specific non-network solution for replacement projects in the forthcoming period. Further information on Energex's approach to non-network solutions and demand management is found in the response to Question 8 of this table.
5.1(b)(vi)	any other significant matters.	Energex has not identified any other significant matters.
5.1(b)(vii)	Identify and provide information or documentation to justify and support any responses to paragraph 5.1(b) (i)-(vi).	<p>Energex's document register includes the following documents relevant to the questions above:</p> <ul style="list-style-type: none"> • Regulatory Proposal document, Chapter 7 – Capital Expenditure • Strategic Asset Management Plan (Attachment 7.090), and • Asset Management Plans (Attachments 7.027 – 7.044).
5.1(b)	The information provided in response to paragraph 5.1(b) above should at least distinguish between the asset categories listed in Workbook 1 – Regulatory determination, regulatory template 2.2.	
6	AUGMENTATION CAPITAL EXPENDITURE MODELLING	
6.1	Any instructions in this notice relating to the augex model must be read in conjunction with the augex model guidance document available on the AER's website (http://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/expenditure-forecast-assessment-guideline/final-decision).	
6.2	In relation to information provided in Workbook 1 – Regulatory determination, regulatory template 2.4 and with respect to the AER's augex model:	The AER has advised they do not require Energex to complete the regulatory template 2.4 of Workbook 1 – Regulatory Determination.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
6.2(a)	Separately for sub-transmission lines, sub-transmission and zone substations, HV feeders and distribution substations, Energex must explain how it:	
6.2(a)(i)	Prepared the maximum demand data (weather corrected at 50 per cent probability of exceedance) provided in the asset status tables 2.4.1 to 2.4.4, including where relevant, explanations of each of:	
6.2(a)(i)(A)	how this value relates to the maximum demand that would be used for normal planning purposes;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(a)(i)(B)	whether it is based upon a measured value, and if so, where the measurement point is and how abnormal operating conditions are allowed for;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(a)(i)(C)	whether it is based on estimated (rather than actual measured) demand, and if so, the basis of this estimation process and how it is validated; and	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(a)(i)(D)	the relationship of the values provided to raw unadjusted maximum demand; and the relationship of the values provided to the values that could be expected from weather corrected maximum demand measures that reflect a 10 per cent probability of exceedance year.	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(a)(ii)	Determined the rating data provided in the asset status tables 2.4.1 to 2.4.4, including where relevant:	
6.2(a)(ii)(A)	the basis of the calculation of the ratings in that segment, including asset data measured and	Refer to response provided in 6.2, noting Energex is not required to submit this information.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	assumptions made; and	
6.2(a)(ii)(B)	the relationship of these ratings with Energex's approach to operating and planning the network. For example, if alternative ratings are used to determine the augmentation time, these should be defined and explained.	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(a)(iii)	Determined the growth rate data provided in the asset status tables 2.4.1 to 2.4.4. This should clearly indicate how these rates have been derived from maximum demand forecasts or other load forecasts available to Energex.	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(b)	In relation to the capex-capacity table 2.4.6, Energex must explain:	
6.2(b)(i)	the types of cost and activities covered. Clearly indicate what non-field analysis and management costs (i.e. direct overheads) are included in the capex and what proportion of capex these cost types represent;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(b)(ii)	how it determined and allocated actual capex and capacity to each of the segment groups, covering:	
6.2(b)(ii)(A)	the process used, including assumptions, to estimate and allocate expenditure where this has been required; and	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(b)(ii)(B)	the relationship of internal financial and/or project recording categories to the segment groups and process used.	Refer to response provided in 6.2, noting Energex is not required to submit this information.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
6.2(b)(iii)	how it determined and allocated estimated/forecast capex and capacity to each of the segment groups, covering:	
6.2(b)(iii)(A)	the relationship of this process to the current project and program plans; and	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(b)(iii)(B)	any other higher-level analysis and assumptions applied.	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(c)	Describe the projects and programs Energex has allocated to the unmodelled augmentation categories in table 2.4.6, covering:	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(c)(i)	the proportion of unmodelled augmentation capex due to this project or program type;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(c)(ii)	the primary drivers of this capex, and whether in Energex's view, there is any secondary relationship to maximum demand and/or utilisation of the Energex network; and	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)	Separately for each network segment that Energex defined in the model segment data table 2.4.5, whether the outcome of such a project or program, whether intended or not, should be an increase in the capability of the Energex network to supply customer demand at similar service levels, or the improvement in service levels for a similar customer demand level:	
6.2(d)(i)	Describe the network segment, including:	
6.2(d)(i)(A)	the boundary with other connecting network	Refer to response provided in 6.2, noting Energex is not required to submit this information.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	segments; and	
6.2(d)(i)(B)	the main reasoning for the individual segment (e.g. as opposed to forming a more aggregate segment).	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(ii)	Explain the utilisation threshold statistics provided (i.e. the mean and standard deviation), including:	
6.2(d)(ii)(A)	the methodology, data sources and assumptions used to derive the parameters;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(ii)(B)	the relationship to internal or external planning criteria that define when an augmentation is required;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(ii)(C)	the relationship to actual historical utilisation at the time that augmentations occurred for that asset category;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(ii)(D)	Energex views on the most appropriate probability distribution to simulate the augmentation needs of that network segment; and	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(ii)(E)	the process applied to verify that the parameters are a reasonable estimate of utilisation limit for the network segment.	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(iii)	Regarding the augmentation unit cost and capacity factor provided, provide an explanation of each of:	
6.2(d)(iii)(A)	the methodology, data sources and assumptions used to derive the parameters;	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(iii)(B)	the relationship of the parameters to actual historical augmentation projects, including the	Refer to response provided in 6.2, noting Energex is not required to submit this information.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	capacity added through those projects and the cost of those projects;	
6.2(d)(iii)(C)	the possibility of double-counting in the estimates, and processes applied to ensure that this is appropriately accounted for (e.g. where an individual project may add capacity to various segments); and	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(d)(iii)(D)	the process applied to verify that the parameters are a reasonable estimate for the network segment.	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(e)	Explain the factors Energex considers may result in different augmentation requirements for itself as compared to other NEM-based DNSPs. Energex must account for the degree that different augmentation requirements are driven by differences in asset utilisation and maximum demand growth. Energex must also explain all other factors, specific to its network, which would result in different augmentation requirements when compared to a DNSP with similar asset utilisation and maximum demand growth. The explanation must clearly indicate those factors that may impact:	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(e)(i)	the maximum achievable utilisation of assets for Energex; and	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(e)(ii)	the likely augmentation project and/or cost.	Refer to response provided in 6.2, noting Energex is not required to submit this information.
6.2(e)	For each significant factor discussed, Energex must indicate relevant model segments and estimate the impact these factors will have on its augmentation levels and associated capex compared to other DNSPs.	Refer to response provided in 6.2, noting Energex is not required to submit this information.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
7	CONNECTIONS EXPENDITURE	
7.1	Provide and describe the methodology and assumptions used to prepare the forecasts of connection works including:	
7.1(a)	Estimation of connection unit costs for each customer type; and	The unit cost per connection type was developed based on the 2017-18 actual aggregate cost per connection type divided by the number of connections per customer type. A base year unit rate (expressed in real 2018-19) was established by indexing the 2017 values to 2018-19 consistent with the assumptions that underlie the Regulatory Proposal.
7.1(b)	Connection volumes for each customer type.	The annual volume per connection type is based on a combination of historical data and resource estimates from subject matter estimates. Refer to Chapter 7 of our Regulatory Proposal for further information.
7.2	Energex must provide its estimation of customer contributions based upon the estimated life and revenue to be recovered from connection assets, including:	Energex's estimation of customer contributions is provided in Chapter 7 of our Regulatory Proposal.
7.2(a)	the expected life of the connection;	Refer to the response provided in 7.2
7.2(b)	the average consumption expected by the customer over the life of the connection; and	Refer to the response provided in 7.2
7.2(c)	any other factors that influence the expected recovery of the Energex network use of system charge to customers.	Refer to the response provided in 7.2
8	NON-NETWORK ALTERNATIVES	
8.1	Identify the policies and strategies and procedures in the response to Workbook 1 – Regulatory determination, regulatory template 7.1 which relate	Energex applies its Demand Management Plan 2018-19 as part of its business as usual planning processes. Policies and strategies that relate to the selection of efficient non-network solutions for demand management include:

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	to the selection of efficient non-network solutions.	<ul style="list-style-type: none"> • Energex Demand Side Engagement Strategy, refer to https://www.energex.com.au/_data/assets/pdf_file/0017/342404/Demand-Side-Engagement-Strategy.pdf <p>EQL Demand Management Plan 2018-19, which contains the strategy for demand management for the next seven years, refer to Attachment 6.001, and</p> <ul style="list-style-type: none"> • annual planning review and Distribution Annual Planning Report (DAPR), refer to Attachment 7.049. <p>These policies, strategies and procedures are supported by internal procedures published in the Repository of Energex Documents (RED). Relevant internal documents include:</p> <ul style="list-style-type: none"> (i) Update the Energex Demand Side Engagement Strategy – RED 01093 (ii) Engaging with non-network providers – RED 01090 (iii) Deliver non-network solution – RED 01089 (iv) Maintain the Energex Demand Side Engagement Facility – RED 01091 (v) Network Planning and Expansion – RED 01147 (vi) Maintain a non-network toolbox – RED 00548 (vii) Screening for non-network options – RED 01092, and (viii) Produce a transmission planning RIT-D project assessment report – RED 00949. <p>There are a number of documented procedures for the delivery of Energex’s Demand Management Program these are located in the Process-to-Go system which contains the high level processes. The detailed procedures and work instructions are maintained in RED’.</p>
8.2	Explain the extent to which the provision for efficient non-network alternatives has been considered in the development of the forecast capex proposal and the forecast opex proposal.	<p>There are several unique factors in Energex’s network that influenced how demand management solutions could be utilised to reduce capital and operating costs.</p> <p>The extent to which the provision for efficient non network alternatives has been considered in the development of the forecast capex and forecast operating expenditure (opex) proposal is explained in the Demand Management Regulatory Proposal (2020-2025) document</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		(Attachment 7.051)
8.3	Identify each non-network alternative that Energex has:	
8.3(a)	commenced during the current regulatory control period; and	<p>The key non-network alternatives in the current period are identified in the following reports:</p> <ul style="list-style-type: none"> • Demand Management Regulatory Proposal (2020-2025), section 3 and Appendix One (Attachment 7.051) • Energex Demand Management Plan Performance 2015-16 (Attachment 17.023) • Energex Demand Management Plan Performance 2016-17 (Attachment 17.024) • Energex Demand Management Plan Performance 2017-18 (Attachment 17.025), and • Demand Management Plan (Attachment 6.001).
8.3(b)	selected to commence during, or will continue into, the forthcoming regulatory control period.	<p>Energex has assessed if there may be potential non-network solutions in the remainder of the current or forthcoming regulatory period.</p> <p>These projects are identified in Demand Management Regulatory Proposals (2020-2025), section 4 and Appendix One (Attachment 7.051).</p> <p>For demand management Targeted Area initiatives, the location, problem statement and incentive offer will be published on the Energex web pages, refer to https://www.energex.com.au/home/control-your-energy/positive-payback-program/positive-payback-for-business/eligible-areas</p> <p>These are updated as network constraints and risks of exceeding capacity are identified.</p>
8.4	For each non-network alternative identified in the response to paragraph 8.3, provide a description, including cost and location.	The key non-network alternatives in the current period are identified in Demand Management Regulatory Proposal (2020-2025), section 4 and Appendix (Attachment 7.051).
8.5	Provide, for each year of the current regulatory control period, and for the forthcoming regulatory control period, details of each payment made, or expected to be made, by Energex to an Embedded	Information on embedded generator contracts is detailed in Demand Management Regulatory Proposal (2020-2025), Appendix One (Attachment 7.051).

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	Generator in reflection any costs avoided by deferring augmentation of:	
8.5(a)	Energex's distribution network; or	Refer to response 8.5.
8.5(b)	the relevant transmission network.	Not applicable
9	FORECAST INPUT PRICE CHANGES	
9.1	Provide, in Workbook 1 – Regulatory determination, regulatory template CPI series, the CPI series and index used by Energex in its forecast capex proposal also the CPI series and index used by Energex in its forecast opex proposal.	<p>Energex used the June CPI series for the eight capital cities that is published quarterly by the Australian Bureau of Statistics (ABS) for historical inflation up to June 2018. The CPI series is provided in 'Workbook 1 – Regulatory Determination - 2020-25 Regulatory Determination RIN template (Attachment 17.046), in accordance with the AER's instructions.</p> <p>This CPI series is also replicated in various models that we are submitting, for instance, 'Opex forecast – SCS' (Attachment 6.007), 'Opex forecast – ACS metering' (Attachment 15.010), 'Opex forecast – ACS Public Lighting Conventional' (Attachment 15.012) and 'Opex forecast – ACS Public Lighting LED (Attachment 15.014).</p> <p>The CPI series in these models convert historical values in to real \$2020, together with inflation forecasts published by the Reserve Bank of Australia in its November 2018 Statement on Monetary Policy.</p>
9.2	Provide, in Workbook 1 – Regulatory determination, regulatory template 2.14, the capex and opex price changes assumed by Energex in its forecast capex proposal and the forecast opex proposal. All price changes must be expressed in percentage year on year real terms.	<p>Refer to 2020-25 Regulatory Determination RIN template (Attachment 17.046) and:</p> <ul style="list-style-type: none"> • Forecast Capex Model (Attachment 7.153) • Fee based and quoted services model - ACS (Attachment 15.009). • Opex forecast – SCS model (Attachment 6.007) • Opex forecast – ACS Metering (Attachment 15.010) • Capex forecast – ACS Metering (Attachment 15.007) • Opex forecast – ACS Public Lighting Conventional (Attachment 15.012) • Opex forecast – ACS Public Lighting LED (Attachment 15.014) • Capex forecast – ACS Public Lighting Conventional (Attachment 15.031), and

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<ul style="list-style-type: none"> Capex forecast – ACS Public Lighting LED (Attachment 15.033).
9.3	Provide:	
9.3(a)	the model(s) used to derive and apply the materials price changes, including model(s) developed by a third party;	Energex is not proposing any (real) materials escalators. Rather, Energex is proposing that the cost of materials escalates consistent with forecast inflation.
9.3(b)	in relation to labour escalators, a copy of the current Enterprise Bargaining Agreement or equivalent agreement; and	Please see 'Energy Queensland: Enterprise Bargaining Agreement' (Attachment 17.026).
9.3(c)	documents supporting or relied upon that accurately explain the change in the price of goods and services purchased by Energex, including evidence that any materials price forecasting method explains the price of materials previously purchased by Energex .	As noted in response to 9.3(a), Energex is not proposing any (real) materials escalators. This means that Energex has not developed or relied upon any documents to support material escalators, including any that explain the change in price of goods and services purchased.
9.4	Provide also an explanation of :	
9.4(a)	the methodology underlying the calculation of each price change, including:	<p>Energex has not included any real material cost escalators in our forecast.</p> <p>For real labour escalators, Energex has applied a labour cost escalator of 0.26% on average per year. This was calculated by taking the average of the forecasts from BIS Oxford and Deloitte Access Economics (DAE) (being 0.85% annually for the regulatory control period) and subtracting 0.59% annually reflecting our management commitment improve our program of works delivery by 3% over the regulatory control period.</p> <p>Energex commissioned BIS Oxford to provide us with real labour escalator forecasts and</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>adopted the DAE forecasts used by the AER in its draft Determination for the NSW distributors, expecting the AER to commission DAE labour forecasts for Queensland in due course.^[1] The reports – listed below – explain the methodology, sources, and data conversions used to calculate the labour cost escalator forecasts. Energex was not provided and do not have access to the models used by either DAE or BIS to prepare their respective forecasts:</p> <ul style="list-style-type: none"> • Deloitte Access Economics, Labour Price Growth Forecasts (Attachment 6.006), and • BIS Oxford Economics, Cost Escalation Forecasts to 2024-25 (Attachment 6.005). <p>For both forecasts the wage price index measure was used. For the DEA forecast, Energex used the real escalator for the utilities industry, unadjusted for productivity. For the BIS Oxford forecast, Energex used the real escalator for the electricity, gas, water and waste services industry.</p>
9.4(a)(i)	sources;	As noted above, these are explained in the reports from DAE and BIS Oxford.
9.4(a)(ii)	data conversions;	As noted above, these are explained in the reports from DAE and BIS Oxford.
9.4(a)(iii)	the operation of any model(s) provided under paragraph 9.3(a); and	As noted in response to 9.3(a), Energex is not proposing any (real) materials escalators, and so have not relied on any model to derive and apply the materials price changes.
9.4(a)(iv)	the use of any assumptions such as lags or productivity gains;	Energex is applying a 1.72% per annum productivity factor to reflect our management initiatives to reduce overhead costs.
9.4(b)	whether the same price changes have been used in developing both the forecast capex proposal and forecast opex proposal; and	<p>The same price changes have been used in developing both the capex and opex forecasts. These are reflected in the following models:</p> <ul style="list-style-type: none"> • Forecast Capex Model (Attachment 7.153) • Opex forecast – SCS model (Attachment 6.007)

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<ul style="list-style-type: none"> • Capex forecast – ACS metering (attachment 15.007) • Capex forecast – ACS public lighting conventional (attachment 15.031) • Capex forecast – ACS public lighting LED (attachment 15.033) • Opex forecast – ACS Metering (Attachment 15.010) • Opex forecast – ACS Public Lighting conventional (Attachment 15.012), and • Opex forecast – ACS public lighting LED (attachment 15.014).
9.4(c)	if the response to paragraph 9.4(b) is negative, why it is appropriate for different expenditure escalators to apply.	As noted in 9.4(b) above, the same price escalation rates (i.e. labour, contractor and materials) are proposed for both forecast capex and opex.
9.5	If an agreement provided in response to paragraph 9.3(b) is due to expire during the forthcoming regulatory control period, explain the progress and outcomes of any negotiations to date to review and replace the current agreement.	Refer response 9.3. The current Energy Queensland Enterprise Bargaining Agreement 2017 has a nominal expiry date of 1 March 2021. Planning and preparation for negotiations for a replacement Enterprise Agreement will commence in 2020.
10	OPERATING AND MAINTENANCE EXPENDITURE	
	Total forecast operating and maintenance expenditure (opex)	
10.1	Provide:	
10.1(a)	the model(s) and the methodology Energex used to develop total forecast opex;	Energex has provided Opex forecast – SCS model (Attachment 6.007) which was used to develop the total forecast opex for SCS. The methodology underlying Energex’s total forecast

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>opex is discussed in chapter 6 of our Regulatory Proposal, and is supported by the 'Base Year Opex Overview' document (Attachment 6.003).Energex has also provided the following models for ACS prepared using a limited building block approach:Opex forecast – ACS Metering (Attachment 15.010)</p> <p>Opex forecast – ACS Public Lighting Conventional (Attachment 15.012), and</p> <p>Opex forecast – ACS Public Lighting LED (Attachment 15.014).</p>
10.1(b)	justification for Energex’s total forecast opex, including:	
10.1(b)(i)	why the proposed total forecast opex is required for Energex to achieve each of the objectives in clause 6.5.6(a) of the NER;	Energex has demonstrated how our total forecast opex achieves each of the objectives in 6.5.6(a) of the NER in the document 'Capex and Opex Objectives, Criteria and Factors in Chapter 6 of the NER' (Attachment 1.006).
10.1(b)(ii)	how Energex ’s total forecast opex reasonably reflects each of the criteria in clause 6.5.6(c) of the NER; and	Energex has demonstrated how our total forecast opex reasonably reflects each of the criteria in 6.5.6(c) of the NER in the document 'Capex and Opex Objectives, Criteria and Factors in Chapter 6 of the NER' (Attachment 1.006).
10.1(b)(iii)	how Energex ’s total forecast opex accounts for the factors in clause 6.5.6(e) of the NER;	Energex has demonstrated how our total forecast opex accounts for the factors in 6.5.6(e) of the NER in the document 'Capex and Opex Objectives, Criteria and Factors in Chapter 6 of the NER' (Attachment 1.006).
10.2	Provide:	
10.2(a)	the quantum of non-recurrent opex for each year of the forthcoming regulatory control period; and	<p>All non-recurrent costs have been removed from Energex’s base year opex forecast; therefore Energex has not forecast any non-recurrent costs for the 2020-2025 regulatory control period.</p> <p>Energex has used the opex forecast model typically used by the AER in its more recent regulatory decisions to apply the base step trend (BST) method. In applying this method, debt raising costs have not been included as these are separately accounted for – on a benchmark basis – in Energex’s proposed revenue models including the PTRM - SCS (Attachment 8.003), PTRM – ACS Metering (Attachment 15.016), PTRM – Public Lighting Conventional</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		(Attachment 15.018) and PTRM – Public Lighting LED (Attachment 15.020).
10.2(b)	an explanation of the driver of each non-recurrent opex.	Refer to response to 10.2(a), noting Energex has not forecast any non-recurrent costs.
10.3	If Energex used a revealed cost base year approach to develop its total forecast opex proposal, provide:	
10.3(a)	in Microsoft Excel format, reconciliation (including all calculations and formulae) of Energex’s forecast total opex proposal to forecast standard control services opex by opex driver in Workbook 1 – regulatory determination, regulatory template 2.16, tables 2.16.1 and 2.16.3;	<p>This is set out in Microsoft Excel form in the following models:</p> <ul style="list-style-type: none"> • Reset RIN Population Model - (Attachment 17.065), and • Opex forecast – SCS model (Attachment 6.007).
10.3(b)	the base year Energex used; and	As noted in chapter 6 of Energex’s Regulatory Proposal, and ‘Base Year Opex Overview’ (Attachment 6.003), Energex has used 2018-19 as the base year for forecasting opex in our Regulatory Proposal.
10.3(c)	explanation and justification for why that base year represents efficient and recurrent costs.	<p>Energex has explained and justified this base year in chapter 6 of our Regulatory Proposal document and in the ‘Base Year Opex Overview’ document (Attachment 6.003). In summary, 2018-19 was selected as a base year because it:</p> <ul style="list-style-type: none"> • Will be the most recent full regulatory year of actual reported expenditure at the time the AER will make its final determination on our Regulatory Proposal • Is the first year where our operations – and associated costs – largely reflect a harmonised approach following the establishment of Energy Queensland and the joint management of Energex and Ergon Energy • Reflects the efficiencies that have been achieved in the current regulatory control period, noting that our actual opex has reduced over the current regulatory control

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>period and is estimated to be below the AER's allowance for the period</p> <ul style="list-style-type: none"> • Is efficient when tested against the econometric models considered in the AER's 2018 Annual Benchmarking Report, and • Is consistent with applying the Efficiency Benefit Sharing Scheme for the 2020-25 regulatory control period.
10.4	If Energex does not use a revealed cost base year approach to develop its total forecast provide:	
10.4(a)	forecast expenditure by opex category in Workbook 1 – Regulatory determination, regulatory template 2.16 for standard control services opex and dual function asset opex in tables 2.16.2 and 2.16.4;	Energex has used a revealed cost base year approach as set out in Chapter 6 of our Regulatory Proposal. For this reason, Energex has not provided a response to this question.
10.4(b)	in Microsoft Excel format, clear reconciliation (including all calculations and formulae) of Energex's total forecast opex proposal to forecast standard control services opex by opex category in Workbook 1 – regulatory determination, regulatory template 2.16, table 2.16.2 and 2.16.4;	Refer to response to 10.4(a), noting Energex has used a revealed base year cost.
10.4(c)	explanation of major drivers for the increases and decreases in expenditure by opex category in the forthcoming regulatory control period compared to actual historical expenditure;	Refer to response to 10.4(a), noting Energex has used a revealed base year cost.
10.4(d)	explanation and justification for:	
10.4(d)(i)	whether Energex considers there is a year of historic opex that represents efficient and recurrent costs; or	Refer to response to 10.4, noting Energex has used a revealed base year cost.
10.4(d)(ii)	why Energex considers no year of historic opex	Refer to response to 10.4, noting Energex has used a revealed base year cost.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	represents efficient and recurrent costs.	
	Output growth	
10.5	Provide the amount of total forecast opex attributable to output growth changes for standard control services opex and dual function assets opex in Workbook 1 – Regulatory determination, regulatory template 2.16, tables 2.16.1 and 2.16.3.	<p>Forecast output growth changes for SCS are provided in chapter 6 of Energex’s Regulatory Proposal.</p> <p>Template 2.16 has been completed in accordance with the AER’s instructions.</p> <p>Table 2.16.1 was populated using the ‘Reset RIN population model’ (Attachment 17.065), which links to the Opex forecast – SCS model (Attachment 6.007) used to develop our output growth forecast.</p>
10.6	Provide:	
10.6(a)	the output growth drivers Energex used to develop the amount of total forecast opex attributable to output growth changes;	<p>Customer numbers, circuit length, ratcheted maximum demand and energy throughput (consumption) drivers were used to forecast output growth. Energex applied the four models used by the AER to determine the output change measures and their respective weightings based on the 2018 Annual Benchmarking Report. This is consistent with the method used by the AER in recent decisions for other distribution network service providers (DNSPs).</p> <p>The drivers are combined in the following forecast opex models:</p> <ul style="list-style-type: none"> • Opex forecast – SCS model (Attachment 6.007) • Opex forecast – ACS Metering (Attachment 15.010) • Opex forecast – ACS Public Lighting Conventional (Attachment 15.012), and • Opex forecast – ACS Public Lighting LED (Attachment 15.014). <p>The driver forecasts are sourced from the DAPR, refer to Attachment 7.049</p>
10.6(b)	any economies of scale factors applied to the growth drivers;	<p>Consistent with the method used by the AER in recent decisions, Energex has not applied any economies of scale factors to the growth drivers. This is demonstrated in the following forecast opex models:</p> <ul style="list-style-type: none"> • Opex forecast – SCS model (Attachment 6.007)

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<ul style="list-style-type: none"> Opex forecast – ACS Metering (Attachment 15.010) Opex forecast – ACS Public Lighting Conventional (Attachment 15.012), and .Opex forecast – ACS Public Lighting LED (Attachment 15.014).
10.6(c)	evidence that the growth drivers explain cost changes due to output growth; and	As noted in Chapter 6 of the Regulatory Proposal, Energex has applied the output change measures and respective weightings that are detailed in the Economic Insights memo released with the AER's 2018 Annual Benchmarking Report.
10.6(d)	if Energex applied any composite multiple output growth drivers:	
10.6(d)(i)	the inputs for each composite multiple output growth driver; and	Energex did not apply any composite multiple output growth drivers. Energex applied the output change measures and respective weightings that are detailed in the Economic Insights memo released with the AER's 2018 Annual Benchmarking Report.
10.6(d)(ii)	the weightings for each input.	Energex did not apply any composite multiple output growth drivers. Energex applied the output change measures and respective weightings that are detailed in the Economic Insights memo released with the AER's 2018 Annual Benchmarking Report.
10.7	Provide an explanation of how, in developing the amount of total forecast opex attributable to output growth changes, Energex:	
10.7(a)	applied the output growth drivers; and	<p>The growth forecasts are applied to Energex's proposed SCS and ACS metering and public lighting opex forecasts via the following models:</p> <ul style="list-style-type: none"> Opex forecast – SCS model (Attachment 6.007) Opex forecast – ACS Metering (Attachment 15.010) Opex forecast – ACS Public Lighting (Attachment 15.012), and Opex forecast – ACS Public Lighting (Attachment 15.014). <p>In summary, Energex applied the method reflected in the opex model typically used by the AER in recent decisions, which involves:</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<ul style="list-style-type: none"> Forecasting the growth drivers Weighting these growth drivers in to a single output growth factor Combining this output growth factor with the forecast price change and productivity change factors to get a single opex rate of change, and Applying the single rate of change to base year opex. <p>Energex has also provided the model underlying the application of output growth drivers to derive total forecast opex. Please refer to Opex forecast – SCS model (Attachment 6.007).</p>
10.7(b)	accounted for economies of scale.	No economies of scale were explicitly applied when applying the output growth drivers.
	Real price changes	
10.8	Provide the amount of total forecast opex attributable to changes in the price of labour and materials for standard control services opex and dual function assets opex in Workbook 1 – Regulatory determination, regulatory template 2.16, tables 2.16.1 and 2.16.3.	Energex has completed template 2.16 in accordance with the AER's instructions.
10.9	Provide an explanation of:	
10.9(a)	how, in developing the amount of total forecast opex attributable to changes in the price of labour and materials, Energex applied the real price measures in Workbook 1 – regulatory determination, regulatory template 2.14; and	<p>Chapter 6 of Energex's Regulatory Proposal explains our method for developing the total amount of forecast opex attributable to changes in the prices of labour and materials. In summary, Energex:</p> <p>Split the base year opex into labour and non-labour components using the weights (59.7%/40.3%) reflected in the AER draft Determination for NSW distributors.</p> <p>For the labour component, we used the labour escalators described in response to 9 above.</p> <p>For the non-labour (i.e. materials) component, we assumed no real price changes.</p> <p>Combined the real labour escalator with the (zero) real materials escalator and the assumed weights to get a single forecast price change factor.</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>Combined this price change factor with the forecast output growth and productivity change factors to get a single opex rate of change.</p> <p>Applied the single rate of change to base year opex.</p> <p>This method was applied in the following models:</p> <ul style="list-style-type: none"> • Opex forecast – SCS model (Attachment 6.007) • Opex forecast – ACS Metering (Attachment 15.010) • Opex forecast – ACS Public Lighting Conventional (Attachment 15.012), and • Opex forecast – ACS Public Lighting LED (Attachment 15.014).
10.9(b)	whether Energex 's labour price measure compensates for any form of labour productivity change.	Energex has used a wage (or labour) price index. This does not directly factor in labour productivity. However, as discussed chapter 6 of our Regulatory Proposal, a labour cost escalator of 0.26% on average per year was applied to reflect the management's commitment to improve the program of works delivery by 3% over the forecast period.
	Productivity change	
10.10	Provide the amount of total forecast opex attributable to changes in productivity for standard control services opex and dual function assets opex in Workbook 1 – Regulatory determination, regulatory template 2.16, tables 2.16.1 and 2.16.3.	Energex has completed template 2.16 in accordance with the AER's instructions as can be demonstrated in the 2020-25 Regulatory Determination RIN template (Attachment 17.046). This has been derived from data in the Reset RIN Population Model (Attachment 17.065).
10.11	Provide, in percentage year on year terms, the productivity measure that Energex used to develop the amount of total forecast opex attributable to changes in productivity.	<p>As noted in Chapter 6 of Energex's Regulatory Proposal, Energex is committed to pursuing further savings over the 2020-25 regulatory control period. Therefore, Energex is proposing a positive productivity saving based on the top-down management initiative of 10% total indirect cost savings, and other targeted cost reductions, which results in an overall productivity saving of 9% for SCS over the 2020-25 regulatory control period, or 1.72% per annum. In this way, the savings will be progressively achieved through a structured program throughout 2020-25.</p> <p>For ACS we applied the same productivity improvements as for SCS. For Public Lighting, further productivity gains were assumed in line with the implementation of LEDs which have</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>significantly lower operating and maintenance costs than conventional lights.</p> <p>Energex expects that, because of our targeted productivity savings, we will at least maintain our relative performance as benchmarked against our peers, with an aspiration to improve. This is reflected in the following models:</p> <ul style="list-style-type: none"> • Opex forecast – SCS JAN19 PUBLIC (attachment 6.007) • Opex forecast – ACS metering JAN19 PUBLIC (attachment 15.010) • Opex forecast – ACS public lighting CON JAN19 PUBLIC (attachment 15.012) • • Opex forecast – ACS public lighting LED JAN19 PUBLIC (attachment 15.014)
10.12	Provide an explanation of:	
10.12(a)	how, in developing the amount of total forecast opex attributable to changes in productivity, Energex applied the productivity measure in paragraph 10.11;	<p>The 1.72% annual productivity adjustment was applied in the following models:</p> <ul style="list-style-type: none"> • Opex forecast – SCS JAN19 PUBLIC (attachment 6.007) • Opex forecast – ACS metering JAN19 PUBLIC (attachment 15.010) <p>The 8% annual productivity adjustment for three years was applied in the following models:</p> <ul style="list-style-type: none"> • Opex forecast – ACS public lighting LED JAN19 PUBLIC (attachment 15.014) •)
10.12(b)	whether Energex 's forecast productivity changes capture the historic trend of cost increases due to changes in regulatory obligations or requirements and industry best practice; and	<p>As noted above, Energex is committed to pursuing further savings over the 2020-25 regulatory control period. Therefore, Energex is proposing a positive productivity saving based on the top-down management initiative of 10% total indirect cost savings, and other targeted cost reductions, which results in an overall productivity saving of 9% for SCS over the 2020-25 regulatory control period, or 1.72% per annum.</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
10.12(c)	whether Energex 's productivity measure includes productivity change compensated for by the labour price measure used by Energex to forecast the change in the price of labour.	As noted in response to 10.9(b), a labour cost escalator of 0.26% on average per year has been applied to reflect Energex management's commitment to improve the program of works delivery by 3% over the forecast period.
11	STEP CHANGES	
11.1	Provide the amount of total forecast opex attributable to opex step changes for standard control services opex and dual function assets opex in Workbook 1 – Regulatory determination, regulatory template 2.16, tables 2.16.1 and 2.16.3.	Energex has not proposed any step changes as part of the BST opex forecasts for either SCS or ACS.
11.2	Provide an explanation of why Energex considers:	
11.2(a)	the efficient costs of the step change are not provided by other components of Energex 's total forecast opex such as base opex, output growth changes, real price changes or productivity change;	Refer to response 11.1. Energex has not proposed any step changes in forecast expenditures.
11.2(b)	the total forecast opex will not allow Energex to achieve the objectives in clause 6.5.6(a) of the NER unless the step change is included; and	Refer to response 11.1. Energex has not proposed any step changes in forecast expenditures.
11.2(c)	the total forecast opex will not reasonably reflect the criteria in clause 6.5.6(c) of the NER unless the step change is included.	Refer to response 11.1. Energex has not proposed any step changes in forecast expenditures.
11.3	For all step changes in forecast expenditure provide:	
11.3(a)	In Workbook 1 – Regulatory determination, regulatory template 2.17 the quantum of the step changes :	Refer to response 11.1. Energex has not proposed any step changes in forecast expenditures.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
11.3(a)(i)	forecasts for each year of the forthcoming regulatory control period; and	Refer to response 11.1. Energex has not proposed any step changes in forecast expenditures.
11.3(a)(ii)	expected to be incurred, in the current regulatory control period;	Refer to response 11.1. Energex has not proposed any step changes in forecast expenditures.
11.3(b)	a description of the step change.	Refer to response 11.1. Energex has not proposed any step changes in forecast expenditures.
11.4	For each step change listed in response to paragraph 11.3, provide an explanation of:	
11.4(a)	when the change occurred, or is expected to occur;	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.4(b)	what the driver of the step change is;	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.4(c)	how the driver has changed or will change (for example, revised legislation may lead to a change in a regulatory obligation or requirement); and	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.4(d)	whether the step change is recurrent in nature.	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.5	For each step change listed in response to paragraph 11.3, provide justification for when, and how, the step change affected, or is expected to affect:	
11.5(a)	the relevant opex category;	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.5(b)	the relevant capex category;	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.5(c)	total opex; and	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.5(d)	total capex.	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
11.6	For each step change registered in response to paragraph 11.3, provide the process undertaken by Energex to identify and quantify the step change; provide cost benefit analysis that demonstrates Energex proposes to address the step change in a prudent and efficient manner, including:	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.6(a)	the timing of the step change; and	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.6(b)	if Energex considered a 'do nothing' option, evidence of how Energex assessed the risks of this option compared with other options.	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.7	For each step change listed in response to paragraph 11.3, where the step change is due to a change in a regulatory obligation or requirement provide:	
11.7(a)	any relevant variations or exemptions granted to Energex during the previous regulatory control period or the current regulatory control period; and	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.7(b)	any relevant compliance audits Energex conducted during the previous regulatory control period or the current regulatory control period.	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.8	For each step change registered in response to paragraph 11.7, provide, with reference to specific clauses of the relevant legislative instrument(s), the:	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.8(a)	previous regulatory obligation or requirement; and	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.
11.8(b)	how the changed regulatory obligation or requirement is driving the step change.	Refer to response 11.3. Energex has not proposed any step changes in forecast expenditures.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	Category specific opex	
11.9	Provide the amount of total forecast opex attributable to category specific opex in Workbook 1 – Regulatory determination, regulatory template 2.17, table 2.17.5. The amount of total opex attributable to category specific opex must correspond with the category specific opex reported in Workbook 1 – Regulatory determination, regulatory template 2.16, table 2.16.1.	Energex has completed Template 2.17, table 2.17.5 in accordance with the AER's instructions. Energex has populated this table using the Reset RIN population model (Attachment 17.065).
12	ECONOMIC BENCHMARKING	
12.1	Complete the Workbook 1 – Regulatory determination, regulatory templates 3.1 to 3.7 in accordance with:	Energex has completed regulatory templates 3.1 to 3.7 in Workbook 1 – Regulatory Determination (Attachment 17.046).
12.1(a)	the 'Economic Benchmarking RIN for distribution network service providers – Instructions and Definitions' issued to Energex on 28 November 2013, chapters 2 to 9;	Energex has completed regulatory templates 3.1 to 3.7 of Workbook 1 – Regulatory Determination (Attachment 17.046) in accordance with the 'Economic Benchmarking RIN for distribution network service providers – Instructions and Definitions' issued to Energex on 28 November 2013, chapters 2 to 9.
12.1(b)	paragraphs 12.2 to 12.10.	Refer response 12.2. Energex has completed regulatory templates 3.1 to 3.7 of Workbook 1 – Regulatory Determination (Attachment 17.046) in accordance with paragraphs 12.2 to 12.10 of the AER's Reset RIN.
12.2	The forecast revenue groupings in Workbook 1 – Regulatory determination, regulatory templates 3.1, tables 3.1.1 and 3.1.2 may be developed by trending forward actual historical revenue groupings in previous regulatory years. However:	
12.2(a)	Total revenues must equal the total forecast revenues proposed by Energex in its regulatory	Energex notes that forecast revenues in regulatory template 3.1 of Workbook 1 – Regulatory Determination (Attachment 17.046) are consistent with forecast revenues presented in the

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	proposal; and	Regulatory Proposal.
12.2(b)	Revenue groupings must reflect Energex's forecast demand for its services in the forthcoming regulatory control period in its regulatory proposal.	Energex has complied with the AER's instructions as the revenue groupings in regulatory template 3.1 in Workbook 1 – Regulatory Determination (Attachment 17.046) are consistent with forecast demand for services in the Regulatory Proposal.
12.3	Information provided in Workbook 1 – Regulatory determination, regulatory templates 3.2, tables 3.2.1 and 3.2.2 must reflect Energex's cost allocation method.	Energex has complied with the AER's instructions for regulatory template 3.2 in Workbook 1 – Regulatory Determination (Attachment 17.046), including that it reflects Energex's approved CAM.
12.4	RAB asset financial data in the Workbook 1 – Regulatory determination, regulatory template 3.3 must reconcile to that in Energex's regulatory proposal PTRM and RFM.	The regulatory asset base (RAB) asset financial data in regulatory template 3 of Workbook 1 – Regulatory Determination (Attachment 17.046) reconcile to that in the Regulatory Proposal PTRM-SCS (Attachment 8.003) and RFM-SCS (Attachment 8.007).
12.5	The definition of a tree must be applied when completing the variables "Average number of trees per urban and CBD vegetation maintenance span" (DOEF0208) and "Average number of trees per rural vegetation maintenance span" (DOEF0209)	Energex has applied the definition of a tree when completing variables DOEF0208 and DOEF0209 in Workbook 1 – Regulatory determination, regulatory template 3.7.
12.6	In calculating responses to the variables DOEF0202 to DOEF0205, spans in the network service area where Energex is not responsible for the vegetation management associated with the span are not to be counted.	In preparing Workbook 1 – Regulatory determination, regulatory template 3.7 Energex has not counted the spans in the network service areas where it is not responsible for the vegetation management associated with the span (variables DOEF0202 to DOEF0205).
12.7	"Total number of spans" (DOEF0205) does not include service line spans.	In preparing Workbook 1 – Regulatory determination, regulatory template 3.7, Energex confirms that the "Total number of spans" (DOEF0205) does not include service line spans.
12.8	Energex must report the route line length of feeders classified as either short rural or long rural divided by the total route feeder line length (this is the total feeder route line length for all CBD, urban, short	In preparing Workbook 1 – Regulatory determination, regulatory template 3.7, Energex has reported the route line length of feeders classified as either short rural or long rural divided by the total route feeder line length against "Rural proportion" (DOEF0201).

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	rural and long rural feeders) against “Rural proportion” (DOEF0201).	
12.9	For the purposes of calculating the “Route line length” variable (DOEF0301) or other variables measured in terms of route line length:	
12.9(a)	the length of service lines is not to be counted	In preparing Workbook 1 – Regulatory determination, regulatory template 3.7, the length of service lines has not been counted for the purposes of calculating the “Route line length” variable (DOEF0301) or other variables measured in terms of route line length.
12.9(b)	the length of a span that shares multiple voltage levels is only to be counted once	In preparing Workbook 1 – Regulatory determination, regulatory template 3.7 the length of a span that shares multiple voltage levels is only counted once for the purposes of calculating the “Route line length” variable (DOEF0301) or other variables measured in terms of route line length.
12.9(c)	the lengths of two sets of lines that run on different sets of poles (or towers) but share the same easement are counted separately	In preparing Workbook 1 – Regulatory determination, regulatory template 3.7, Energex confirms that lengths of two sets of lines that run on different sets of poles (or towers) but share that same easement are counted separately for the purposes of calculating the “Route line length” variable (DOEF0301) or other variables measured in terms of route line length.
12.10	All forecast variables in the Workbook 1 – Regulatory determination, regulatory templates 3.1 to 3.7 must align with those in Energex’s regulatory proposal. For the avoidance of doubt this includes forecast:	All forecast variables reported in templates 3.1 and 3.7 of Workbook 1 – Regulatory Determination (Attachment 17.046) are consistent with the documents submitted as part of the Regulatory Proposal.
12.10(a)	opex and capex;	Refer to response 12.10.
12.10(b)	maximum demand, energy delivery;	Refer to response 12.10.
12.10(c)	revenues;	Refer to response 12.10.
12.10(d)	quality of services variables including SAIDI and	Refer to response 12.10.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	SAIFI; and	
12.10(e)	quantities of physical assets.	Refer to response 12.10.
13	ALTERNATIVE CONTROL SERVICES	
13.1	The overheads relating to each alternative control service listed in paragraph 13.2 must be disclosed.	<p>For fee based and quoted ACS, Energex has outlined the overheads in the ACS – Fee based and quoted services model (Attachment 15.009).</p> <p>Metering and public lighting forecasts have been prepared using a limited building block approach. Opex has been forecast using the same BST approach used for SCS. Therefore overheads cannot be separately identified. However, capitalised overheads are set out in the following models:</p> <ul style="list-style-type: none"> • Capex forecast – ACS metering (Attachment 15.007) • Capex forecast – ASC public lighting conventional (Attachment 15.031); and • Capex forecast – ACS public lighting LED (Attachment 15.033).
13.2	Provide a list of all of the alternative control services that Energex intends to provide to customers and levy charges for in the forthcoming regulatory control period.	<p>Energex has provided a list of each ACS that we intend to provide customers in:</p> <ul style="list-style-type: none"> • Alternative Control Services (Attachment 15.005) • 2020-2025 Tariff Structure Statement (Attachment 14.001) and TSS Explanatory Notes (Attachment 14.003) • ACS metering pricing model (Attachment 15.028) • ACS public lighting LED and conventional pricing model (Attachment 15.029), and • Fee based and quoted services model - ACS (Attachment 15.009).
13.3	Provide a definition of each alternative control service listed in paragraphs 14, 15 and 16.	<p>Energex has provided a definition of each ACS that we intend to provide customers in:</p> <ul style="list-style-type: none"> • Alternative Control Services (Attachment 15.005) • 2020-2025 Tariff Structure Statement (Attachment 14.001) and TSS Explanatory Notes (Attachment 14.003), and

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<ul style="list-style-type: none"> • Fee based and quoted services model – ACS (Attachment 15.009).
13.4	<p>For each alternative control service (excluding quoted services) listed in paragraphs 14, 15 and 16, specify the charges applicable during each year of the current regulatory control period. Also include proposed charges for each year of the forthcoming regulatory control period.</p>	<p>Charges for the proposed ACS in the forthcoming regulatory control period have been developed in accordance with the methodology set in the 2020-2025 Tariff Structure Statement (Attachment14.001).</p> <p>The charges for the current regulatory control period have been developed in accordance with the formula set in the 2017-2020 Tariff Structure Statement, which was approved by the AER.</p> <p>Charges for fee based services for the current and forthcoming regulatory control periods are set out in Attachment 17.067.</p> <p>For public lighting and metering, charges for the current regulatory control period are set out in the relevant annual Pricing Proposal approved by the AER. These documents are available on the Energex website. The charges applicable for the forthcoming regulatory control period have been provided in:</p> <ul style="list-style-type: none"> • ACS metering pricing model (Attachment 15.028), and <p>ACS public lighting LED and conventional pricing model (Attachment 15.029).</p>
13.5	<p>For each alternative control service (excluding quoted services) listed in paragraphs 14, 15 and 16, specify the total revenue earned by Energex in each year of the current regulatory control period and forecast to be earned in the forthcoming regulatory control period.</p>	<p>Energex has outlined the total ACS revenue earned by Energex in each year of the current regulatory control period in ASC Supporting Information (Reset RIN Schedule 1 s13.5 - 13.6) document (Attachment 17.001).</p> <p>For the forthcoming regulatory control period information is provided in:</p> <ul style="list-style-type: none"> • Alternative Control Services (Attachment 15.005) • PTRM – ACS metering (Attachment 15.016) • PTRM – ACS public lighting conventional (Attachment 15.018) • PTRM – ACS public lighting LED (Attachment 15.020), and • Fee based and quoted services model – ACS (Attachment 15.009).
13.6	<p>For quoted services (in aggregate) specify the total revenue earned in each year of the current</p>	<p>Refer to 'ACS Supporting Information (Reset RIN Schedule 1 s13.5 - 13.6)' document (Attachment 17.001) for the total revenue earned for quoted services in each year of the</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	regulatory control period and forecast to be earned in the forthcoming regulatory control period.	current regulatory period and forecast to be earned in the forthcoming regulatory control period.
13.7	For each alternative control service listed in paragraphs 14, 15 and 16, provide the labour rate(s) used to calculate the charges for the current and forthcoming regulatory control periods:	Charges for public lighting and metering are based on a limited building block approach and therefore labour rates are not applicable. For fee and quoted services refer to 'ACS Supporting Information (Reset RIN Schedule 1 s13 and s14)' (Attachment 17.067).
13.7(a)	specify the labour classification level used to provide the services e.g. outsourced or internally provided and labourer type;	As noted above, charges for public lighting and metering are based on a limited building block approach and therefore labour classifications are not applicable. For fee based and quoted services refer to the Fee based and quoted services model – ACS (Attachment 15.009).
13.7(b)	register all direct costs, and their quantum, in the make-up of the labour rate(s).	As noted above, charges for public lighting and metering are based on a limited building block approach and therefore labour classifications are not applicable. For fee based and quoted services refer to Fee based and quoted services model – ACS (Attachment 15.009).
13.8	List each material category (e.g. meters, poles, brackets) required for the provision of alternative control services registered in the response to paragraphs 14, 15 and 16.	For public lighting, we have identified the light, bracket and pole as the material cost categories. Metering equipment is the only identified material costs for customer initiated metering services. For fee based and quoted services, the material cost is dependent on the activity performed, and therefore there is no set schedule of material costs.
13.8(a)	provide a description of each material category;	Light – being the identified costs associate with the luminaire, lamp and associated equipment that provide illumination. Bracket – the identified costs associated with the horizontal arm on which the light is attached. Pole – the identified costs associated with the vertical element on which the bracket is attached. Meter – identified costs relate to the meter and any consumables required for the installation.
13.8(b)	provide the average unit costs for each material category;	For metering refer to 'ACS Supporting Information (Reset RIN Schedule 1 s13 and s14)' (Attachment 17.067).

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		For public lighting refer to response to paragraph 16.2.
13.8(c)	register all direct costs included in the unit costs;	For metering refer to 'ACS Supporting Information (Reset RIN Schedule 1 s13 and s14)' (Attachment 17.067). For public lighting refer to response to paragraph 16.2.
13.8(d)	specify the calculation of the quantum of direct materials costs included in the unit cost of materials.	Only direct costs are included in the unit costs listed for each material category.
14	FEE BASED AND QUOTED ALTERNATIVE CONTROL SERVICES	
14.1	Provide a description of each fee based and quoted service, explaining the purpose of the service and list the activities which comprise each service. The list of fee based and quoted services should be consistent with those services listed in Energex's annual pricing proposals.	Ergon Energy has provided a description of each ACS that we intend to provide customers in our document, Alternative Control Services (Attachment 15.005).
14.1(a)	specify if the charges are for fee based and/or quoted alternative control services;	Refer to our document, Alternative Control Services (Attachment 15.005).
14.1(b)	explain the reasons for the different charge with reference to the costs incurred;	Fee based services are generally predictable in scope and do not vary greatly with the project. In contrast, quoted services depend on the scope of a customer's request. It is not practical to establish individual fees for quoted services as the costs vary significantly on a project-by-project basis.
14.1(c)	explain the method used to set the different charge; and	Energex applies the formulae specified in the 2020-25 Tariff Structure Statement (Attachment 14.001) to set the charges for fee based and quoted services. Energex's fee-based services use a bottom-up, input cost model to determine the efficient, cost-reflective charge for each individual service. Energex's quoted services are based on labour rates per hour (including on-costs and overheads) with materials, contractor and other costs reflecting the costs involved with the specific project.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
14.1(d)	provide the calculations underpinning the different charge.	Energex has provided the calculations for each ACS fee based service and an example of a quoted service in the Fee based and quoted services model - ACS (Attachment 15.009).
14.2	Identify the tasks involved in providing the service described in response to 14.1 including:	Energex has itemised cost components to complete the task in the in the Fee Based and Quoted services model - ACS (Attachment 15.009).
14.2(a)	map the class of labour required to provide the service;	Refer to response 14.2.
14.2(b)	the number of workers required to undertake the task and deliver the service;	Refer to response 14.2.
14.2(c)	the average time required to complete the task and deliver the service.	Refer to response 14.2.
14.3	If materials are required to provide the service, specify each material category.	Energex has itemised cost components to complete the task in the in the Fee Based and quoted services model- ACS (Attachment 15.009).
14.4	Provide all current and proposed charges for each fee based alternative control service in the current and forthcoming regulatory control periods.	Refer to the response to section 13.4.
15	METERING ALTERNATIVE CONTROL SERVICES	
15.1	For metering alternative control services for the current regulatory control period and the forthcoming regulatory control period, provide details of the:	In addressing Question 15 of Schedule 1 of the RIN, Energex has defined metering ACS consistent with the final Framework and Approach paper dated July 2018.
15.1(a)	direct materials and direct labour costs;	The direct material costs include the costs of the meter, and other equipment associated with the meter such as the modem, antenna and communications. Refer to 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' (Attachment

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>17.044).</p> <p>Please note that forecast metering opex applies a BST approach, and therefore we have used 2018-19 opex as a basis for our forecasts.</p>
15.1(b)	installation costs;	<p>For the current period, please refer 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' (Attachment 17.044).</p> <p>For the forthcoming period, please note that Energex does not forecast any installation costs due to Power of Choice reforms.</p>
15.1(c)	meter purchase costs;	<p>For the current and forthcoming period, please refer to 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' (Attachment 17.044).</p>
15.1(d)	volumes of work;	<p>For the current period, please refer to 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' (Attachment 17.044).</p> <p>For the forthcoming period, please refer to Template 4.2 in Workbook 1 Regulatory Determination (Attachment 17.046) for default metering services and Workbook 1 Regulatory Determination template 4.3 Fee based services for all fee based work volumes.</p> <p>Information for metering services is provided in the following categories:</p> <ul style="list-style-type: none"> • Meter Testing - (template 4.2 Default Metering) • Meter Investigation - (template 4.2 Default Metering) • Scheduled Meter Reading - (template 4.2 Default Metering) • Special Meter Reading – (template 4.3 Fee based services) • New Meter Installation - (template 4.3 Fee based services) • Meter Replacement - (template 4.3 Fee based services) • Meter Maintenance - (template 4.2 Template Default Metering), and • Other Metering – Meter Reconfiguration – (template 4.3 Fee based services)
15.1(e)	other costs associated with providing metering services;	<p>For the current period, refer to 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' - Table 3, (Attachment 17.044)</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		For the forthcoming period, Energex does not forecast any other costs.
15.1(f)	type of meters installed and forecast to be installed, separately for new meters and for replacement meters;	For the current period, refer to 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' (Attachment 17.044). Please note that Energex will no longer install any new or replacement meters for Types 1-6 metering installations due to Power of Choice (PoC) reforms that came into effect from 1 December 2017.
15.1(g)	the volume of meters by type set out in (f) and the revenue earned and forecast to be earned by each meter type; and	For the current period volumes, refer to 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' document (Attachment 17.044). For the forthcoming period volumes, please note that Energex will no longer install any new or replacement meters for Types 1-6 metering installations due to PoC reforms that came into effect from 1 December 2017. For the current and forthcoming regulatory period revenue refer to response 13.5 ,
15.1(h)	the total operating and maintenance costs incurred, and forecast to be incurred, for metering services.	For the current period, please refer 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' document (Attachment 17.044). For the forthcoming period please refer to Table 5 – Forecast Opex in our document, Alternative Control Services (Attachment 15.005).
15.2	For metering works, for each year of the current regulatory control period and forecasts for the forthcoming regulatory control period, provide a description of:	
15.2(a)	the type of work undertaken (e.g. meter reconfiguration, special meter read) including a description of the activities undertaken to provide the service;	The activities for the current and forthcoming regulatory control periods are of a similar nature and include the following: <ul style="list-style-type: none"> • Meter Purchases – the purchasing of meters and communications devices (such as modems and antennas) that meet the specifications required to provide a compliant metering service • Meter Testing – the testing of in-service meters and metering installations to confirm the metering installations accuracy and compliance

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<ul style="list-style-type: none"> • Meter Investigation – the investigation of in-service meters and metering installations to ensure metering installation accuracy and compliance • Scheduled Meter Reading – the scheduled reading of meters for accurate customer billing data • Special Meter Reading – the out of cycle reading of meter to support a customer billing or consumption request • New Meter Installation – This involves the installation of a purchased meter in the premise of a customer. The nature of this activity can vary with the type of installation and metering requirement • Meter Replacement – The replacement of an existing meter installed in the premise of a customer that has been identified as end of useful life • Meter Maintenance – the preventative or corrective maintenance of a meter or metering installation. The nature of this activity can vary depending on the type of installation and metering requirement, and • Other Metering – All activities not captured by the defined meter services categories including those activities relating to type 7 meters <p>Note that the service types New Meter Installations and Meter Replacement will not be required for the forthcoming periods as Energex is no longer required to install new or replacement meters for Types 1-6 metering installations as part of the PoC reforms that took effect on 1 December 2017.</p>
15.2(b)	the labour costs involved in providing the service, including any overheads;	The labour costs relate to meter testing, investigation, scheduled and special reading (excluding the data communication costs), replacement and maintenance as well as administration and training associated with these services. We also allocate overheads to metering services in accordance with the CAM, and some of this may relate to labour hours. This would include labour costs for administration and training, together with the labour costs of Information and Communication Technology. It should be noted that some of the labour costs relate to external providers.
15.2(c)	any materials costs involved in providing the	The material costs primarily relate to the purchase of the meter and communications devices

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	service;	(such as modems and antennas).
15.2(d)	the number (volume) of services provided and associated assumptions on which the volume of service was derived or estimated;	<p>For actual volumes in the current period please refer to 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' document, Table 6 (Attachment 17.044) and break down of service types.</p> <p>For forecast volumes refer to Template 4.2 in Workbook 1 Regulatory Determination.</p> <p>Assumptions have been made in the forecast volumes based on historical trending volumes and PoC impacts. Further details below:</p> <ul style="list-style-type: none"> • No new or replacement meters will be installed due to PoC primarily affecting service order categories of New Meter Installation, Meter Replacement and Meter Purchases • Meter population decline of 3% per annum based off trending since PoC implementation • Meter Testing to remain constant in line with the Australian Energy Market Operator's (AEMO) testing obligations and the Meter Asset Management Plan (Attachment 15.001), and • All other service volumes have been evaluated based off trending since PoC implementation.
15.2(e)	the charge per service; and	The charges for metering services are explained in the 2020-25 Tariff Structure Statement (14.001). Refer to the response 13.4 for information on the charges in the current and forthcoming regulatory control periods.
15.2(f)	the revenue earned by each service.	Refer to response 13.5.
15.3	For metering alternative control services, specify the number of customers in each year of the current regulatory control period, and forecasts for the forthcoming regulatory control period.	For the current and forthcoming periods, refer to the 'Metering ACS Supporting Information (Reset RIN Schedule 1 s15)' document (Attachment 17.044)
16	PUBLIC LIGHTING ALTERNATIVE CONTROL SERVICES	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
16.1	Specify which items are capex and operational expenditure for each year of the current regulatory control period and forecasts for the forthcoming regulatory control period.	Refer to: <ul style="list-style-type: none"> • Alternative Control Services (Attachment 15.005) • Opex forecast – ACS public lighting conventional (Attachment 15.012) • Opex forecast – ACS public lighting LED (Attachment 15.014) • Capex forecast – ACS public lighting conventional (Attachment 15.031) • Capex forecast – ACS public lighting LED (Attachment 15.033) • PTRM – ACS public lighting conventional (Attachment 15.018), and • PTRM – ACS public lighting LED (Attachment 15.020). •
16.2	Provide unit costs for the current regulatory control period and forecast for the forthcoming regulatory control period for:	
16.2(a)	luminaires;	Refer to Table 2 in this document
16.2(b)	dedicated street lighting poles;	Refer to response provided to 16.2(a).
16.2(c)	brackets;	Refer to response provided to 16.2(a).
16.2(d)	lamps;	Refer to response provided to 16.2(a).
16.2(e)	photoelectric cells;	Refer to response provided to 16.2(a).
16.2(f)	labour rate (per hour);	Refer to response provided to 13.7.
16.2(g)	miscellaneous materials.	Energex has not identified any miscellaneous materials costs in the provision of public lighting ACS.
16.3	Provide the depreciation period in years for each	Energex uses an average depreciation period of 20 years for all types of luminaires.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	type of luminaire.	
16.4	Provide the bulk change cycle in years for lamps and photoelectric cells.	Refer to the 'Asset Management Plan Public Lighting' document (Attachment 15.003)
16.5	Provide details of the average replacement age of each type of luminaire.	Refer to the 'Asset Management Plan Public Lighting' document (Attachment 15.003)
16.6	Provide the number of luminaires, by type, for the current and forthcoming regulatory control periods.	<p>For the current regulatory control period refer to Template 4.1 in the Annual Category Analysis RINs previously submitted to the AER.</p> <p>For the forthcoming regulatory control period refer to ACS Public lighting LED and Conventional Pricing model (Attachment 15.029).</p>
16.7	Provide the number of luminaires, poles and brackets replaced per year, for the current and forthcoming regulatory control periods.	<p>For the current period refer to Template 4.1 in the Annual Category Analysis RINs previously submitted to the AER.</p> <p>For the forthcoming period refer to Template 4.1 in Workbook 1 – Regulatory Determination.</p> <p>For further information refer to the 'Asset Management Plan Public Lighting' document (Attachment 15.003).</p>
16.8	Provide details, including assumptions used, for any other costs that are incurred for the provision of public lighting services.	For further information refer to the 'Asset Management Plan Public Lighting' document (Attachment 15.003)
16.9	Provide models and/or modelling that underpins proposed charges for the forthcoming regulatory control period and the reasons for the assumptions behind those forecasts.	<p>Refer to:</p> <ul style="list-style-type: none"> • PTRM – ACS public lighting conventional (Attachment 15.018) • PTRM – ACS public lighting LED (Attachment 15.020) • RFM – ACS public lighting conventional (Attachment 15.024) • RFM – ACS public lighting LED (Attachment 15.026), and • ACS Public lighting LED and Conventional Pricing model (Attachment 15.029). <p>For further information about the assumptions refer to the 'Asset Management Plan Public</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		Lighting' document (Attachment 15.003) and our document, Alternative Control Services (Attachment 15.005).
16.10	For public lighting alternative control services, specify the number of customers in each year of the current regulatory control period, and forecasts for the forthcoming regulatory control period.	Energex's customers for public lighting include the 12 local government authorities in Energex's area, the Department of Transport and Main Roads and Queensland Rail. The customer base will remain unchanged for the entire forthcoming regulatory control period.
17	DEMAND AND CONNECTIONS FORECASTS	
17.1	Provide and describe the methodology used to prepare the following forecasts for the forthcoming regulatory control period:	
17.1(a)	maximum demand; and	The methodology for maximum demand forecasts is detailed in the following documents: <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.1(b)	number of new connections.	Energex considers the number of new connections to refer to customer number forecasts. Refer to Chapter 5 of Energex's Regulatory Proposal.
17.2	Provide:	
17.2(a)	the model(s) Energex used to forecast new connections and maximum demand;	Energex has not provided models as most relevant information is embedded on our internal server. For further information refer to: <ul style="list-style-type: none"> • Chapter 5 of our Regulatory Proposal • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.2(b)	Where Energex's approach to weather correction has changed, provide historically consistent weather corrected maximum demand data, as per	Energex has provided this information in templates 3.4 to 5.4 of Workbook 1 – Regulatory Determination (Attachment 17.046).

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	the format in Workbook 1 – Regulatory determination, regulatory templates 3.4 and 5.4 using Energex’s current approach. If any of this data is unavailable, explain why;	<p>For further information refer to:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.2(c)	for new connections, volume expenditure data requested in Workbook 1 – Regulatory determination, regulatory template 2.5; and	Energex has provided this information in template 2.5 of Workbook 1 – Regulatory Determination (Attachment 17.046).
17.2(d)	any supporting information or calculations that illustrate how information extracted from Energex’s forecasting model(s) reconciles to, and explains any differences from, information provided in Workbook 1 – Regulatory determination, regulatory templates 2.5, 3.4 and 5.4.	Energex has no further supporting documentation.
17.3	For each of the methodologies provided and described in response to paragraph 17.1, and, where relevant, data requested under paragraphs 17.2(b) and 17.2(c), explain or provide (as appropriate):	
17.3(a)	the models used;	<p>Energex has not provided models as most relevant information is embedded on our internal servers. For further information refer to:</p> <ul style="list-style-type: none"> • Chapter 5 of our Regulatory Proposal • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(b)	a global (top-down) and spatial (bottom-up) demand forecast;	<p>These demand forecasts are explained in:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001)

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
17.3(c)	the inputs and assumptions used in the models (including in relation to economic growth, connections numbers and policy changes and provide any associated models or data relevant to justifying these inputs and assumptions);	<p>The inputs and assumptions used in the modelling for customer connections, energy forecasts, regional demand forecasts and zone substation maximum demand forecasts are set out in chapter 5 of our Regulatory Proposal and:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042) • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001)
17.3(d)	the weather correction methodology, how weather data has been used, and how Energex 's approach to weather correction has changed over time;	<p>The weather correction methodology used for our demand forecasts is outlined in:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042) • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001)
17.3(e)	an outline of the treatment of block loads, transfers and switching within the forecasting process;	<p>Energex applied block loads, transfers, and switching periods in the forecast if they were categorised as committed. These were applied as post-model adjustments to the zone substation maximum demand forecasts. Typically, these changes were in units of MVA, and were therefore converted to MW using a power factor obtained from historical data. The block loads, transfers, and switching included in the forecasts are summarised in:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(f)	each appliance model used, where used, or assumptions relating to average customer energy usage (by customer type);	<p>Energex's energy forecasting process did not apply an appliance model approach. Our approach for deriving energy forecasts is explained in the chapter 5 of our Regulatory Proposal and in the ACIL Allen document referenced below.</p> <p>In summary we used a weather-based regression model built from daily system consumption data, correlated against weather data from weather stations near demand centres. This model was then used to create a 'base year' forecast. The base forecast year assumes median weather data to capture seasonal effects in electricity consumption.</p> <p>The forecast was then grown on an annual basis, applying both positive (such as connections growth) and negative demand drivers (such as rooftop PV). Further information is provided in:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
17.3(g)	how the forecasting methodology used is consistent with, and takes into account, historical observations (where appropriate), including any calibration processes undertaken within the model (specifically whether the load forecast is matched against actual historical load on the system and substations);	<p>The following documents explain how the historical observations of energy, customer connections and maximum demand form the basis of Energex’s modelling approach.</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(h)	how the resulting forecast data is consistent across forecasts provided for each network element identified in Workbook 1 – Regulatory determination, regulatory template 5.4 and system wide forecasts;	<p>Energex’s approach has sought to reconcile forecasts between, zone substations, sub-transmission substations and connection points. This is explained in:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(i)	how the forecasts resulting from these methods and assumptions have been used in determining the following:	
17.3(i)(i)	capex forecasts; and	<p>The maximum demand forecasts have been a key input to developing our capital expenditure programs. Specifically, Energex has used spatial demand forecasts to determine whether there may be a constraint on the network because of forecast peak demand or where retirement of an asset is required. For further information refer to:</p> <ul style="list-style-type: none"> • EQL Customer Reliability Strategy (Attachment 7.048), and • the DAPR (Attachment 7.049).
17.3(i)(ii)	operating and maintenance expenditure forecasts.	<p>Energex’s Opex BST model applies a “rate of change” forecast to determine Opex in each regulatory year of the forthcoming period. The rate of change calculation uses customer number growth and maximum (ratcheted) demand forecasts. For further information refer to chapter 6 of our Regulatory Proposal.</p> <ul style="list-style-type: none"> •
17.3(j)	whether Energex used the forecasting model(s) it used in the joint planning process for the purposes	<p>For further information refer to:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	of its regulatory proposal;	<ul style="list-style-type: none"> ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(k)	whether Energex forecasts both coincident and non-coincident maximum demand at the feeder, connection point, sub-transmission substation and zone substation level, and how these forecasts reconcile with the system level forecasts (including how various assumptions that are allowed for at the system level relate to the network level forecasts);	<p>Energex only forecasts non-coincident maximum demand at the feeder level. We forecast both non-coincident and coincident maximum demand at the connection point, sub-transmission substation and zone substations levels.</p> <p>Energex has explained the way they have reconciled to system level forecasts in:</p> <ul style="list-style-type: none"> Load Forecasting Spatial Maximum Demand (Attachment 17.042), and ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001). <p>In summary, the non-coincident zone substation forecasts were reconciled to the relevant regional maximum demand forecast for each year in the 10-year forecast period. The reconciliation process also produced coincident zone substation forecasts in MW, starting from an unreconciled estimate of coincident demand. This was based on diversity factors representing the ratio of coincident-to-non-coincident maximum demand at the zone substation.</p> <ul style="list-style-type: none">
17.3(l)	whether Energex records historic maximum demand in MW, MVA or both;	<p>Energex records MW and MVA at connection points, sub-transmission, and zone substations. Energex only record amps for high voltage feeders; as we do not record voltage or power factor correction at this level of the network. For high voltage feeders we assume normal voltage to provide and estimated MVA value.</p> <ul style="list-style-type: none"> Load Forecasting Spatial Maximum Demand (Attachment 17.042), and ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(m)	the probability of exceedance that Energex uses in network planning;	<p>Energex uses 50% POE forecast to plan the network to cater for a single contingency. The 10% POE forecast is used to plan the network for system normal configuration.</p> <p>For further information refer to our DAPR. (Attachment 7.049)</p>
17.3(n)	the contingency planning process, in particular the process used to assess high system demand;	Refer to response in 17.3(m)

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
17.3(o)	how risk is managed across the network, particularly in relation to load sharing across network elements and non-network solutions to peak demand events;	Network limitations are identified using the Demand Forecast as one input. Refer to our DAPR (Attachment 7.049) for further information.
17.3(p)	whether and how the maximum demand forecasts underlying the regulatory proposal reconcile with any demand information or related planning statements published by AEMO, as well as forecasts produced by any transmission network service providers connected to Energex's network;	Please also refer to: <ul style="list-style-type: none"> • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001), and • Load Forecasting Spatial Maximum Demand (Attachment 17.042).
17.3(q)	how the normal and emergency ratings are used in determining capacity for individual zone substations and sub-transmission lines;	Energex uses emergency ratings to plan the network to cater for a single contingency. The normal ratings are used to plan the network for system normal configuration. The Plant Rating Manual articulates how these are determined. For further information refer to our DAPR (Attachment 7.049).
17.3(r)	where Energex proposes to commence or continue a demand-related capex project or program during the forthcoming regulatory control period on a HV feeder:	
17.3(r)(i)	for each feeder from the zone substation that is the connecting zone substation for the relevant HV feeder, and any other feeders that the relevant HV feeder can transfer load to or from:	
17.3(r)(i)(A)	assumed future load transfers between feeders;	Planned future load transfers are captured in planning systems and tools and are documented in the Energex DAPR. Energex considers load transfers as one of the options to address an identified limitation. For further information refer to our DAPR (Attachment 7.049).
17.3(r)(i)(B)	assumed feeder underlying load growth rates	Our system and tools identify an underlying feeder growth rate exclusive of transfers and

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	(exclusive of transfers and specific customer developments); and	customer developments (i.e. block loads).
17.3(r)(i)(C)	assumed block loads, and associated demand assumptions;	As discussed above, block loads are considered as part of the demand forecast procedure. For further information refer to: <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(r)(ii)	existing embedded generation capacity, and associated assumptions on the impact on demand levels;	This is captured through actual demand. For further information refer to: <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(r)(iii)	assumed future embedded generation capacity, and associated assumptions on the impact on demand levels;	Energex's demand forecast process incorporates forecasts of household PV generation growth, and considers the likely load injected into our network from potential embedded generation. We use a probabilistic approach to determine the likely capacity. <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(r)(iv)	existing non-network solutions, and the associated assumptions on the impact on demand levels;	Demand or generation responses procured for network support are captured in Energex's planning processes to ensure future network limitations are accurately assessed. Further information on planning philosophy can be found in the Energex DAPR (Attachment 7.049).
17.3(r)(v)	assumed future non-network solutions, and associated assumptions on the impact on demand levels; and	Demand or generation responses that could be procured for future network support will be identified the planning phase for future network limitations and captured in Energex planning processes. Further information on Energex's planning philosophy can be found in the Distribution Annual Planning Report.
17.3(r)(vi)	the diversity between feeders.	Sections 5.3.4, 6.4.3, 6.5.3 and 6.11.5 of our 2018 DAPR (Attachment 7.049) and Strategic Proposal Distribution Augmentation (Attachment 7.091) document details the assumptions and methodologies used to commence or continue a demand-related capex project or program during the forthcoming regulatory control period on a HV feeder.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
17.3(s)	where Energex proposes to commence or continue a demand-related capex project or program during the forthcoming regulatory control period on a zone substation (or relevant substations for a sub-transmission line):	
17.3(s)(i)	assumed future load transfers between related substations;	<p>In discussion with Network Planners, Energex determine the constraints on our zone substations, substations, and sub-transmission lines. This includes consideration of future load transfers proposed to treat identified constraints, and these are captured in the load forecast. For further information refer to:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(s)(ii)	assumed underlying load growth rates (exclusive of transfers and specific customer developments);	<p>Underlying growth rates, exclusive of transfers and specific customer developments, are determined in SIFT. Refer to:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(s)(iii)	assumed specific customer developments, and associated demand assumptions;	<p>Customer developments and associated demand assumptions are considered in SIFT. Further information can be found in:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(s)(iv)	existing embedded generation capacity, and associated assumptions on the impact on demand levels;	<p>Energex's demand forecasts also incorporate existing embedded generation capacity. Further information can be found in:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL Allen Demand Review Energy Queensland (Attachment 5.001).
17.3(s)(v)	assumed future embedded generation capacity, and associated assumptions on the impact on	<p>Energex's demand forecasts also incorporate specific customer developments. Further information can be found in:</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	demand levels;	<ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.3(s)(vi)	existing non-network solutions, and the associated assumptions on the impact on demand levels;	Consistent with Energex's demand management policy, Energex assesses whether there are any viable and efficient non-network solutions to address the constraint on the network. Demand or generation responses procured for network support are captured in Energex's planning processes to ensure future network limitations are accurately assessed. Further information on Energex's planning philosophy can be found in the DAPR (Attachment 7.049).
17.3(s)(vii)	assumed future non-network solutions, and associated assumptions on the impact on demand levels; and	Demand or generation responses that could be procured for future network support will be identified the planning phase for future network limitations and captured in Energex planning processes. Further information on Energex's planning philosophy can be found in the DAPR (Attachment 7.049).
17.3(s)(viii)	diversity with related substations.	<p>As part of the forecasting process we record maximum demand on each feeder, and we may be able to see diversity in the commercial and residential feeder. For further information refer to:</p> <ul style="list-style-type: none"> • Load Forecasting Spatial Maximum Demand (Attachment 17.042), and • ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.4	Provide:	
17.4(a)	evidence that any independent verifier engaged by Energex has examined the reasonableness of the method, processes and assumptions in determining the forecasts and has sufficiently capable expertise in undertaking a verification of forecasts; and	Independent review of the forecast was undertaken for this submission by ACIL Allen Consulting. This is explained in ACIL ALLEN Demand Review Energy Queensland (Attachment 5.001).
17.4(b)	all documentation, analysis and models evidencing the results of the independent verification.	Energex has submitted all relevant documents available from ACIL Allen. Refer to response provided in 17.4(a).
18	EFFICIENCY BENEFIT SHARING SCHEME	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
18.1	For the purposes of applying the efficiency benefit sharing scheme:	
18.1(a)	identify all cost categories proposed to be excluded from the operation of the efficiency benefit sharing scheme;	Refer to document "Application of Incentives Schemes" (Attachment 11.001)
18.1(b)	explain for each cost category identified in the response to paragraph 18.1(a) the reasons for the proposed exclusion.	Refer to document "Application of Incentives Schemes" (Attachment 11.001)
19	SERVICE TARGET PERFORMANCE INCENTIVE SCHEME	
19.1	Provide Energex's detailed methodology for calculating the following parameters used in the STPIS;	
19.1(a)	the SAIDI, SAIFI and MAIFI targets for each supply reliability area;	Refer to documents "Application of Incentives Schemes" (Attachment 11.001) and STPIS Targets and Incentive rates (Attachment 11.007).
19.1(b)	the customer service parameters and targets;	Refer to document "Application of Incentives Schemes" (Attachment 11.001)
19.1(c)	daily SAIDI, SAIFI and MAIFI and customer service performance derived from the individual interruption data under paragraph 19.3;	Refer to document "Application of Incentives Schemes" (Attachment 11.001)
19.1(d)	the MED threshold derived from the daily SAIDI data;	Refer to document "Application of Incentives Schemes" (Attachment 11.001)
19.1(e)	The incentive rates to apply to each supply reliability area.	Refer to document "Application of Incentives Schemes" (Attachment 11.001)

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	<p>Note: All calculations must be made in accordance with the STPIS and using data which complies with the STPIS definitions. Energex must provide their SAIDI, SAIFI and MAIFI targets for each supply reliability area and not its forecasted SAIDI, SAIFI and MAIFI for each supply reliability area.</p>	
19.2	<p>If Energex proposes adjustments to the STPIS targets away from those based upon raw historical data Energex must provide, in respect of each adjustment:</p>	
19.2(a)	<p>the reasons for the adjustment;</p>	<p>Refer to document “Application of Incentives Schemes” (Attachment 11.001)</p>
19.2(b)	<p>the quantum of the adjustment, and the effect of the adjustment on the targets for each of the supply reliability areas; and</p>	<p>Refer to document “Application of Incentives Schemes” (Attachment 11.001)</p>
19.2(c)	<p>the method, basis and empirical data used as justification for the adjustment.</p>	<p>Refer to document “Application of Incentives Schemes” (Attachment 11.001)</p>
19.3	<p>Provide the data required in Workbook 1 – Regulatory determination, regulatory templates 6.1 and 6.2.</p>	<p>The data required by the AER has been have provided in “Workbook 1 – Regulatory determination” (Attachment 17.046).</p>
20	PROPOSED CONTINGENT PROJECTS	
20.1	<p>For each contingent project proposed in the regulatory proposal, provide:</p>	<p>Energex has not proposed any contingent projects in our forecast capex. None of Energex’s forecast capex meets the criteria or threshold for a contingent project.</p>
20.1(a)	<p>a description of the proposed contingent project, including reasons why Energex considers the project should be accepted as a contingent project for the forthcoming regulatory control period;</p>	<p>Refer to response to 20.1. Energex is not proposing any contingent projects.</p>

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
20.1(b)	the proposed contingent capex which Energex considers is reasonably required for the purpose of undertaking the proposed contingent project;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.1(c)	the methodology used for developing that forecast and the key assumptions that underlie it;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.1(d)	information that demonstrates that the undertaking of the proposed contingent project is reasonably required to meet one or more of the objectives referred to in clause 6.6A.1(b)(1) of the NER;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.1(e)	a demonstration that the proposed contingent capex for each proposed contingent project:	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.1(e)(i)	is not included (either in part or in whole) in Energex's proposed total forecast capex for the forthcoming regulatory control period;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.1(e)(ii)	reasonably reflects the capex criteria, taking into account the capex factors, in the context of the proposed contingent project; and	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.1(e)(iii)	exceeds either \$30 million (\$nominal) or 5 per cent of Energex's proposed annual revenue requirement for the first year of the forthcoming regulatory control period, whichever is larger amount.	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.1(f)	the proposed trigger events relating to the proposed contingent project.	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.2	For each proposed trigger event relating to the proposed contingent project referred to in	Refer to response to 20.1. Energex is not proposing any contingent projects.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	paragraph 20.1(f), demonstrate:	
20.2(a)	the proposed trigger event is reasonably specific and capable of objective verification;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.2(b)	the occurrence of the proposed trigger event makes the undertaking of the proposed contingent project reasonably necessary in order to achieve any of the capex objectives;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.2(c)	the proposed trigger event generates increased costs or categories of costs that relate to a specific location rather than a condition or event that affects the distribution network as a whole;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.2(d)	the proposed trigger event is described in such terms that the occurrence of that event or condition is all that is required for the distribution determination to be amended under clause 6.6A.2 of the NER;	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.2(e)	the proposed trigger event is a condition or event, the occurrence of which is probable during the forthcoming regulatory control period, but the inclusion of capex in relation to the proposed trigger event under clause 6.5.7 of the NER is not appropriate because:	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.2(e)(i)	it is not sufficiently certain that the event or condition will occur during the forthcoming regulatory control period or if it may occur after that regulatory control period or not at all; or	Refer to response to 20.1. Energex is not proposing any contingent projects.
20.2(e)(ii)	the costs associated with the event or condition are	Refer to response to 20.1. Energex is not proposing any contingent projects.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	not sufficiently certain.	
20.3	Provide a summary of Energex’s proposed contingent projects for the forthcoming regulatory control period, including the proposed contingent capex and trigger events for each proposed contingent project in the Workbook 1 – Regulatory determination, regulatory template 7.2.	Refer to response to 20.1. Energex is not proposing any contingent projects.
21	REVENUES FOR STANDARD CONTROL SERVICES	
21.1	Provide Energex’s calculation of the unsmoothed and smoothed revenues for each year of the forthcoming regulatory control period using the AER’s post-tax revenue model, which is to be submitted as part of Energex’s regulatory proposal.	The calculation of forecast unsmoothed and smoothed revenue for SCS is provided in PTRM–SCS (Attachment 8.003).
21.2	Provide details of any departure from the AER’s post-tax revenue model for the calculations referred to in paragraph 21.1 and the reasons for that departure.	Energex has departed from the AER’s post-tax revenue model by using the year-on-year tracking method to forecast depreciation of existing assets. This is explained in Chapter 8 of Energex’s Regulatory Proposal.
22	INDICATIVE IMPACT ON ANNUAL ELECTRICITY BILLS	
22.1	For the purposes of calculating the impact of Energex’s regulatory proposal on the annual electricity bill of typical residential and business customers in Energex, provide the data/information required in Workbook 7 – Indicative Bill Impact, regulatory template 7.6. Provide the data source for each input used for the calculation.	Energex has provided the information required in Template 7.6 in “Workbook 7 – Indicative Bill Impact” (Attachment 17.052). The data source for the information is provided below: <ul style="list-style-type: none"> The source data for the annual usage per customer in Table A of 7.6.1.1 for the flat tariff is based on the average residential customer or small business customer in Energex’s region, consistent with the definition use for customer impact analysis in the 2020-25 Tariff Structure Statement (Attachment 14.001) and in the Regulatory

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>Proposal. For the TOU tariff, this annual usage per customer has been aligned with the energy usage data for a residential and small business customer on a time of use (TOU) energy tariff, as provided to the Queensland Competition Authority (QCA) and set out in the QCA's Final determination - Regulated retail electricity prices for 2018–19 (May 2018).</p> <ul style="list-style-type: none"> • Note that Energex's residential TOU energy tariff T8900 has a peak, shoulder and off-peak charging parameter. Energex's small business TOU energy tariff T8900 only has a peak and off-peak charging parameter. For the small business TOU tariff, it has been assumed that 10.1% of consumption occurs during peak time, with the remainder in off peak (which is consistent with the peak and off-peak consumption split in the QCA's Final determination - Regulated retail electricity prices for 2018–19 (May 2018) for Tariff 22A). For the residential TOU tariff, it has been assumed that 11% of consumption occurs during peak time (which is consistent with the QCA's Final Determination for Tariff 12A), 60% of consumption occurs during off-peak time with the remainder in off peak. This is because the QCA's Final Determination does not provide a split between off peak and shoulder periods for residential tariff 12A • The source data for the annual usage per customer in Table B of 7.6.1.1 is calculated based on the QCA's notified retail price calculations as per the QCA's Final determination - Regulated retail electricity prices for 2018–19 (May 2018). This approach is as per agreement with the AER. Specifically: <ul style="list-style-type: none"> ○ The retail bill has been calculated based on an "N+R" approach whereby ○ For the flat tariff, the "N" is based on the Energex T8400 network tariff for residential customers, and the Energex T8500 network tariff for small business customers. For the TOU tariff, the "N" is based on the Energex T8900 network tariff for residential customers, and the Energex T8800 network tariff for small business customers ○ For the flat tariff, the "R" is calculated using the QCA's approach and the retail, wholesale and other cost components that comprise the "R" consistent with the values and approach set out in the QCA's Final determination - Regulated retail electricity prices for 2018–19 (May 2018) for "Tariff 11" (residential) and "Tariff 20" (small business). Similarly for the TOU tariff, the "R" is calculated using the QCA's approach and the retail, wholesale and other cost components that comprise the "R" consistent with the values and approach set

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		<p>out in the QCA's Final determination - Regulated retail electricity prices for 2018–19 (May 2018) for “Tariff 12A” (residential) and “Tariff 22A” (small business).</p> <ul style="list-style-type: none"> • The source data for the distribution costs as a proportion of a typical customer's electricity in Table C of 7.6.1.1 is calculated based on the following calculation: <ul style="list-style-type: none"> ○ The network bill calculated using the Energex “N” (For the flat tariff, the T8400 network tariff for residential customers, and the Energex T8500 network tariff for small business customers, and for the TOU tariff, the T8900 network tariff for residential customers, and the Energex T8800 network tariff for small business customers) is divided by ○ The total retail bill calculated and set out in Table B of 7.6.1.1 • The source data for the smoothed nominal and real revenues in table 7.6.1.2 was obtained from the Energex PTRM (Attachment 8.003) submitted as part of the Regulatory Proposal • The source data for the energy delivered forecast in table 7.6.1.2 is aligned with the energy delivered data set out in the 2020-25 Reset RIN Template 3.4.1 DOPE01 • Energex notes an error in rows 61, 62, 70 and 71 whereby the real regulated tariff and real annual change calculations are incorrectly referring to the nominal regulated tariff values. These errors have been corrected in the template for Workbook 7 submitted to the AER
22.2	The data/information required in Workbook 7 – Indicative Bill Impact, regulatory template 7.6 is to be provided for the distribution costs of Energex and does not include any data/information in relation to any applicable transmission or jurisdictional scheme pass through costs.	Energex confirms that the data provided in Workbook 7 – Indicative Bill Impact, regulatory template 7.6 is provided for the distribution costs of Energex and does not include any data/information in relation to any applicable transmission or jurisdictional scheme pass through costs.
23	PROPOSED TARIFF STRUCTURE STATEMENT	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
23.1	Provide the model(s) used to calculate the long run marginal cost estimates in Energex's proposed tariff structure statement provided in accordance with the requirements of clauses 6.18.1A(a)(5) and 6.18.5(f) of the NER.	Refer to the 2020-25 LRMC Model (Attachment 14.008).
23.2	Provide and describe the methodology and assumptions used to prepare the long run marginal cost estimates in paragraph 23.1.	Refer to section 6.2 of Energex's TSS Explanatory Notes (Attachment 14.003).
23.3	Describe the relationship between the expenditure, demand and other inputs (as appropriate) used in the model provided under paragraph 23.1 and the expenditure, demand and other forecasts (as appropriate) provided as part of the building block proposal for the forthcoming regulatory control period.	<p>Energex's approach to calculating long run marginal cost (LRMC) does not involve the inclusion of forecast expenditure or demand values that are used in developing the building block proposal.</p> <p>For details on how the cost estimates used in the LRMC calculation approach are aligned with those used in the building block proposed, refer to section 6.2 of Energex's TSS Explanatory Notes (Attachment 14.003).</p>
24.	RATE OF RETURN FOR THE PROJECTED CAPITAL BASE	
24.1	The Rate of Return Guideline sets out:	
24.1(a)	the AER's proposed positions on the elements for assessing the rate of return including the return on equity and return on debt;	
24.1(b)	the estimation methods, financial models, market data and other evidence that the AER proposes to take into account when estimating the allowed rate of return;	
24.1(c)	the way in which the AER proposes to take into account the estimation methods, financial models,	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	market data or other evidence.	
24.2	If Energex proposes any departures from the methods, etc. referenced in subsections 24.1(a) or (b), provide the reasons for this departure, and also provide;	Energex is not proposing any departures from the methods set out in the AER's Rate of Return Guideline.
24.2(c), (d)	a description of Energex's actual debt and equity raising costs; and an explanation of the methodology which Energex is proposing for the expenditure required to compensate for debt and equity raising costs.	Refer to Chapter 9 of Energex's Regulatory Proposal.
	<p>Note: If the binding rate of return legislation is passed prior to the final RIN being completed and returned to the AER by Energex, the above sections (24.1 and 24.2) should be deleted and replaced by the following drafting (and followed):</p> <p>24.1 The Rate of Return Guideline sets out how the rate of return will be calculated.</p>	
25	REGULATORY ASSET BASE	
25.1	Provide Energex 's calculation of the regulatory asset base for the relevant distribution system in respect of standard control services for each regulatory year of current regulatory control period using the AER's roll forward model, which is to be submitted as part of the regulatory proposal.	<p>Energex has provided the calculation of the RAB for SCS in each year of the regulatory control period in RFM – SCS (Attachment 8.007). Energex has also used the AER's roll forward model (RFM) to calculate the RAB for ACS metering and public lighting. These calculations are set out in:</p> <ul style="list-style-type: none"> • RFM – ACS metering (Attachment 15.022) • RFM – ACS public lighting conventional (Attachment 15.024), and • RFM - public lighting LED (Attachment 15.026).
25.2	Provide details of each departure from the underlying methods in the AER's roll forward model	Energex is not proposing departures from the underlying methods in the AER's RFM.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	for the calculation referred to in paragraph 25.1 and the reasons for that departure.	
25.3	If the value of the regulatory asset base as at the start of the forthcoming regulatory control period is proposed to be adjusted because of changes to asset service classification, provide details including relevant supporting information used to calculate that adjustment value.	An explanation of how the roll-forward of the RAB is calculated is provided in Chapter 8 of the Regulatory Proposal (Attachment 1.003). The actual values are shown in RFM – SCS (Attachment 8.007).
25.4	Provide details of any departure in the allocation of actual capex, asset disposal and customer contribution values across asset classes in the roll forward model from those reported in the Annual Reporting RIN for the relevant regulatory years and the reasons for that departure.	Energex is not proposing any departures in the allocation of values across asset classes in the RFM from those reported in the Annual Reporting RIN.
26	DEPRECIATION SCHEDULES	
26.1	Provide Energex’s calculation of the depreciation amounts for the relevant distribution system in respect of standard control services for each regulatory year of:	
26.1(a)	the current regulatory control period using the AER’s roll forward model, which is to be submitted as part of the regulatory proposal	The calculation of depreciation amounts for the current regulatory period is provided in the following models: <ul style="list-style-type: none"> • RFM – SCS (Attachment 8.007) • RFM – ACS metering (Attachment 15.022) • RFM – ACS public lighting conventional (Attachment 15.024), and .RFM – ACS public lighting LED (Attachment 15.026).
26.1(b)	the forthcoming regulatory control period using the AER’s post-tax revenue model, which is to be	The calculation of depreciation amounts for the forthcoming regulatory period is provided in the

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	submitted as part of the regulatory proposal.	<p>following models:</p> <ul style="list-style-type: none"> • PTRM – SCS (Attachment 8.003) • PTRM – ACS metering (Attachment 15.016), and • PTRM – ACS public lighting conventional (Attachment 15.018), and <p>PTRM – ACS public lighting LED (Attachment 15.020).</p>
26.2	Provide details of any departure from the underlying methods in the AER's roll forward model and post-tax revenue model for the calculations referred to in paragraph 26.1 and the reasons for that departure.	<p>As noted in response to 25.2, Energex is not proposing any departure to the underlying methods in the RFM to the extent that they apply to the roll-forward of the RAB.</p> <p>As noted in response to 21.2, Energex has departed from the AER's PTRM by using the year-on-year tracking method to forecast depreciation of existing assets. This is explained this further in Chapter 8 of the Regulatory Proposal.</p>
26.3	Identify any changes to standard asset lives for existing asset classes from the previous determination. Explain the reason(s) for each change and provide relevant supporting information.	Chapter 8 of the Regulatory Proposal provides Energex's standard asset lives. These are consistent with the previous determination.
26.4	Identify any changes to new asset classes from the previous determination. Explain the reason(s) for using these new asset classes and provide relevant supporting information on their proposed standard asset lives.	Energex is proposing an additional asset class for legacy ICT assets as set out in Chapter 8 of the Regulatory Proposal.
26.5	If any existing asset classes from the previous determination are proposed to be removed and their residual values to be reallocated to other asset classes, explain the reason(s) for the change and provide relevant supporting information. This should include a demonstration of the materiality of the change on the forecast depreciation allowance.	Energex is not proposing to remove any asset class.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
26.6	Describe the method used to depreciate existing asset classes as at 1 July 2020 (the start of the forthcoming regulatory control period) and provide supporting calculations, if the approach differs from that in the roll forward model.	As noted in response to 21.2 and 26.2, Energex is proposing to adopt the year on year tracking method to depreciate existing assets as at 1 July 2020.
27	CORPORATE TAX ALLOWANCE	
27.1	Provide Energex 's calculation of the estimated cost of corporate income tax for the forthcoming regulatory control period using the AER's post-tax revenue model, which is to be submitted as part of the regulatory proposal.	<p>Energex's corporate income tax forecast is provided in:</p> <ul style="list-style-type: none"> • PTRM – SCS (Attachment 8.003) • PTRM – ACS metering (Attachment 15.016) • PTRM – ACS public lighting conventional (Attachment 15.018), and • PTRM – ACS public lighting LED (Attachment 15.020). <p>Relevant calculations are explained in Chapter 10 of Energex's Regulatory Proposal.</p>
27.2	Provide details of each departure from the AER's post-tax revenue model for the calculations referred to in paragraph 27.1 and the reasons for that departure.	Energex is proposing no departures to how the cost of corporate income tax is calculated in the AER's PTRM (Attachment 8.003).
27.3	Identify each change to standard tax asset lives for existing asset classes from the previous determination. Explain the reason(s) for the change and provide relevant supporting information, including Commonwealth tax laws governing depreciation for tax purposes.	Chapter 10 of the Regulatory Proposal provides Energex's standard tax asset lives and explains any changes from previous determination
27.4	Describe the method used to depreciate existing asset classes as at 1 July 2020 (the start of the forthcoming regulatory control period) for tax purposes and provide supporting calculations, if the	These are identified and explained Chapter 8 of Energex's Regulatory Proposal.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	approach differs from that in the roll forward model.	
27.5	Provide Energex's calculation of the tax asset base for the relevant system in respect of standard control services for each regulatory year of the current regulatory control period using the AER's roll forward model, which is to be submitted as part of the regulatory proposal.	Energex has provided the calculation in the AER's RFM (Attachment 8.007)).
27.6	Provide details of each departure from the underlying methods in the AER's roll forward model for the calculation referred to in paragraph 27.5 and the reasons for that departure.	Energex is proposing no departures to how the cost of corporate income tax is calculated in the AER's PTRM.
27.7	Identify each difference in the capitalisation of expenditure for regulatory accounting purposes and tax accounting purposes. Provide reasons and supporting calculations to reconcile any differences between the two forms of accounts.	Energex has interpreted this question as asking for any differences between how we have treated expenditure in our proposed RAB and tax asset base. Adopting this interpretation, the only difference is in the treatment of capital contributions – which are removed from the RAB, but not the tax asset base. This difference in treatment is reflected in the AER's PTRM and the AER's RFM.
28	RELATED PARTY TRANSACTIONS	
28.1	Identify and describe all entities which:	
28.1(a)	are a related party to Energex and contribute to the provision of distribution services by Energex; or	All related parties to Energex are identified in EQL Corporate Structure document (Attachment 17.020). Energy Queensland Limited (Energex's parent entity) provides corporate support services supporting the provision of distribution services.
28.1(b)	have the capacity to determine the outcome of decisions about Energex's financial and operating policies.	Energy Queensland Limited provides the strategic oversight of Energex. For further information refer to the following documents: <ul style="list-style-type: none"> • 'EQL Corporate Structure - Governance and Delegations' document, (Attachment 17.021), and

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
		'EQL Corporate Structure -Subsidiary Board reporting and approvals' (Attachment 17.022).
28.2	Provide a diagram of the organisational structure depicting the relationships between all the entities identified in the response to paragraph 28.1.	This is provided in 'EQL Corporate Structure document' (Attachment 17.020).
28.3	Identify:	
28.3(a)	all arrangements or contracts between Energex and any of the other entities identified in the response to paragraph 28.1 currently in place or expected to be in place during the period 2018-19 to 2024-25 which relate directly or indirectly to the provision of distribution services; and	<p>Energy Queensland Limited has entered into the following agreements with Energex:</p> <ul style="list-style-type: none"> • EQL Treasury Management Agreement (Attachment 17.031), under which Energy Queensland provides central treasury management services for the Energy Queensland Limited Corporate Group (including Ergon Energy and Energex), in order to operate its treasury operations prudently and effectively. • EQL Framework Agreement for Services (Attachment 17.027), which establishes a framework for the provision of resources and services between entities in the Energy Queensland Limited Corporate Group. Energy Queensland Limited and its subsidiaries (including Ergon Energy and Energex) entered into a service schedule on 3 October 2018 that documents the provision of employees by EQL (Attachment 17.003). <p>[Note: These attachments are subject to a claim of confidentiality]</p> <p>We anticipate that further schedules to the Framework Agreement will continue to be developed.</p> <p>No new contracts or arrangements are expected to be in place during the period 2018-19 to 2024-25 which relate directly or indirectly to the provision of distribution services.</p>
28.3(b)	the service or services that are the subject of each arrangement or contract.	Refer to response 28.3(a).
28.4	For each service identified in the response to paragraph 28.3(b):	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
28.4(a)	provide:	
28.4(a)(i)	a description of the process used to procure the service; and	The services that are the subject of the EQL Treasury Management Agreement and EQL Framework Agreement for Services relate to overall management functions performed by Energy Queensland Limited as the parent entity of the Energy Queensland Limited corporate group,. They are provided in support of the efficient operation of the Energy Queensland Limited group of companies in response to the Queensland Government's merger of the Energex and Ergon Energy businesses in 2016. They do not relate to the procurement of services generally offered by external providers.
28.4(a)(ii)	supporting documentation including, but not limited to, requests for tender, tender submissions, internal committee papers evaluating the tenders, contracts between Energex and the relevant provider.	These contracts are provided in EQL Treasury Management Agreement and EQL Framework Agreement for Services.
28.4(b)	explain:	
28.4(b)(i)	why that service is the subject of an arrangement or contract (i.e. why it is outsourced) instead of being undertaken by Energex itself;	The services that are the subject of the EQL Treasury Management Agreement and EQL Framework Agreement for Services relate to overall management functions performed by Energy Queensland Limited as the parent entity of the Energy Queensland Limited corporate group. They are provided in support of the efficient operation of the Energy Queensland Limited group of companies in response to the Queensland Government's merger of the Energex and Ergon Energy businesses in 2016. They do not relate to the procurement of services generally offered by external providers. The Treasury Management Agreement and Framework Agreement for Services are based on a cost recovery; therefore Energy Queensland Limited does not make a profit from these agreements.
28.4(b)(ii)	whether the services procured were provided under a standalone contract or provided as part of a broader operational agreement (or similar);	Refer to response 28.4(b)(i).
28.4(b)(iii)	whether the services were procured on a genuinely	Refer to response 28.4(b)(i).

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	competitive basis and if not, why; and	
28.4(b)(iv)	whether the service (or any component thereof) was further outsourced to another provider.	Refer to response 28.4(b)(i).
29	VEGETATION MANAGEMENT COMPLIANCE	
29.1	Provide compliance audits of vegetation management work conducted by Energex during the current regulatory control period.	Refer to the 'Vegetation Audit Summary' document (Attachment 17.064).
30	CORPORATE STRUCTURE	
30.1	Provide charts that set out:	
30.1(a)	the group corporate structure of which Energex is a part; and	Refer to section 6 of CAM (Attachment 6.004). Energex'
30.1(b)	the organisational structure of Energex.	Refer to section 7 of Energex's CAM (Attachment 6.004).
31	FORECAST MAP OF DISTRIBUTION SYSTEM	
31.1	Provide a forecast map of Energex's distribution system for the forthcoming regulatory control period. This map, together with any appropriate accompanying notes, should also indicate the location of new major network assets proposed to be constructed over the forthcoming regulatory control period.	Refer to the 'Forecast Map of distribution system' (Attachment 17.038).
32	TRANSITIONAL ISSUES	
32.1	Provide information on transitional issues (expressly identified in the NER or otherwise) which Energex expects will have a material impact on it and should	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	be considered by the AER in making its distribution determination. For each issue, set out the following information:	
32.1(a)	the transitional issue;	Energex has not identified any transitional issues.
32.1(b)	what has caused the transitional issue;	Refer to response 32.1(a) noting Energex has not identified any transitional issues.
32.1(c)	how the transitional issue impacts on Energex; and	Refer to response 32.1(a) noting Energex has not identified any transitional issues.
32.1(d)	how Energex considers the transitional issue could be addressed.	Refer to response 32.1(a) noting Energex has not identified any transitional issues.
33	AUDIT OPINION REPORTS AND REVIEW CONCLUSION STATEMENTS	
33.1	Provide the audit opinion report and review conclusion statements as applicable, prepared in accordance with the requirements set out in Appendix C.	Energex has provided the audit report and review reports as required in Attachment 17.003)
33.2	Provide all reports from the auditor to Energex's management regarding the review conclusion statements and/or auditors' opinions report or assessment.	Energex has provided the audit report and review reports as required in Attachment 17.003)
34	CONFIDENTIAL INFORMATION	
34.1	This clause applies to any information Energex provides:	
34.1(a)	in response to Schedule 1;	
34.1(b)	in a regulatory proposal for the forthcoming	

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
	regulatory control period (a Proposal)	
34.1(c)	in a revision or amendment to a Proposal; and	
34.1(d)	in a submission Energex makes regarding a Proposal or a revised or amended Proposal; (together, Energex's Information).	
34.2	If Energex wishes to make a claim for confidentiality over any of Energex's Information, provide the details of that claim in accordance with the requirements of the AER's Confidentiality Guideline, as if it extended and applied to that claim for confidentiality.	Refer to Energex's 'Confidentiality template' (Attachment 16.001)
34.3	Provide any details of a claim for confidentiality in response to paragraph 34.2 at the same time as making the claim for confidentiality.	Refer to Energex's 'Confidentiality template' (Attachment 16.001).
35	COMPLIANCE WITH SECTION 71YA OF THE NEL	
35.1	Provide a statement attesting that:	
35.1(a)	Where any expenditure or cost is has been incurred or is forecast to be incurred by Energex, as a result of or incidental to a review under Division 3A – Merits review and other non-judicial review – of the NEL:	Energex has not applied for a review under Division 3A - Merits review and other non-judicial review – of the NEL and accordingly there are no expenditures or costs that have been incurred nor forecast as a result.
35.1(a)(i)	Energex has not included any of that expenditure or cost, or any part of that expenditure or cost, in its forecast capital or operating expenditures for a network revenue or pricing determination; and	Refer to response 35.1(a) - Energex has not applied for a review under Division 3A - Merits review and other non-judicial review – of the NEL.

RIN Reference	Requirement	Response / Cross reference to material provided by Energex
35.1(a)(ii)	Energex has not recovered any of that expenditure or cost, or any part of that expenditure or cost, from end users; and	Refer to response 35.1(a) - Energex has not applied for a review under Division 3A - Merits review and other non-judicial review – of the NEL.
35.1(a)(iii)	Energex has not sought to pass through any of that expenditure or cost, or any part of that expenditure or cost, to end users; or	Refer to response 35.1(a) - Energex has not applied for a review under Division 3A - Merits review and other non-judicial review – of the NEL.
35.1(b)	Where no expenditure or cost has been incurred or is forecast to be incurred by Energex, as a result of or incidental to a review under Division 3A – Merits review and other non-judicial review – of the NEL:	Refer response to 35.1(a) - Energex has not applied for a review under Division 3A - Merits review and other non-judicial review – of the NEL.
35.1(b)(i)	No such expenditure or cost has been incurred or is forecast to be incurred.	Refer to response 35.1(a) - Energex has not applied for a review under Division 3A - Merits review and other non-judicial review – of the NEL.
36	IDENTIFICATION OF CERTAIN COSTS IN ACTUAL CAPITAL AND OPERATING EXPENDITURE	
36.1	For any actual capex or opex reported in response to this notice, identify any part of that expenditure which can be attributed to any expenditure or cost that Energex has incurred as a result of, or incidental to, a review under Division 3A – Merits review and other non-judicial review – of the NEL.	Refer to response 35.1(a) - Energex has not applied for a review under Division 3A - Merits review and other non-judicial review – of the NEL and accordingly there is no associated capex or opex reported in response to this notice to be identified.

Response to Section 16, Clause 16.2

Table 2: Public lighting ACS - Unit costs for current regulatory period and forecast regulatory period (\$2018-19)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Public Lighting Brackets;Major Road	\$261.59	\$265.45	\$270.52	\$275.25	\$281.44	\$287.78	\$287.78	\$294.74	\$301.87	\$309.18
Public Lighting Brackets;Minor Road	\$239.46	\$243.00	\$247.64	\$251.97	\$257.64	\$263.44	\$263.44	\$269.81	\$276.34	\$283.03
Public Lighting Lamps;Major Road	\$148.90	\$151.10	\$153.99	\$156.68	\$160.21	\$163.81	\$163.81	\$167.77	\$171.83	\$175.99
Public Lighting Lamps;Minor Road	\$395.69	\$401.53	\$409.20	\$416.36	\$425.73	\$435.31	\$435.31	\$445.84	\$456.63	\$467.68
Public Lighting Luminaires;Major Road	\$337.05	\$342.02	\$348.55	\$354.65	\$362.63	\$370.79	\$370.79	\$379.76	\$388.95	\$398.36
Public Lighting Luminaires;Minor Road	\$561.16	\$569.44	\$580.31	\$590.47	\$603.76	\$617.34	\$617.34	\$632.28	\$647.58	\$663.25
Public Lighting Poles/Columns;Major Road	\$1,193.48	\$1,211.10	\$1,234.22	\$1,255.82	\$1,284.08	\$1,312.97	\$1,312.97	\$1,344.74	\$1,377.28	\$1,410.61
Public Lighting Poles/Columns;Minor Road	\$364.98	\$370.36	\$377.43	\$384.04	\$392.68	\$401.52	\$401.52	\$411.23	\$421.18	\$431.38
Photoelectric Cell	\$8.29	\$8.41	\$8.57	\$8.72	\$8.92	\$9.12	\$9.12	\$9.34	\$9.56	\$9.79

3 Material Assumptions

All material assumptions relied upon by Energex for the purposes of preparing the Regulatory Proposal have been disclosed in Table 3 below.

Table 3 provides responses to the following Schedule 1 requirement in the Reset RIN:

- 1.4(b) Provide all material assumptions
- 1.5(a) Provide the source or basis of each material assumption
- 1.5(b) If applicable, provide the assumption's quantum
- 1.5(c) Whether and how the assumption has been applied and was taken into account, and
- 1.5(d) The effect or impact of the assumption on the capital and operating expenditure forecasts in the forthcoming regulatory control period taking into account:
 - (i) The actual expenditure incurred during the current regulatory control period, and
 - (ii) The sensitivity of the forecast expenditure to the assumption.

Table 3: Material Assumptions

Issue	Assumption	Rationale for “reasonableness”	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Structure and ownership	Our forecasts are based on our current company structure and ownership arrangements.	Our forecasts reflect merger savings arising from our recent restructuring. A further restructuring or change of ownership could mean these savings are not achieved and may require changes to the CAM, and therefore the attribution or allocation of costs in our forecasts.	Our structure and ownership arrangements are set out in the CAM which has been approved by the AER.	Not necessary, because we are assuming that our current arrangements will continue.	Not able to be quantified because depends on organisational structure and its implications on allocation of shared costs.	Capex and opex	We have not undertaken sensitivity analysis, as counter-factual scenarios difficult to reasonably estimate.
Legislative and regulatory obligations	Our capex and opex forecasts are based on our current legislative and regulatory obligations and our Distribution Authority.	Our capex and opex forecasts reflect our compliance with our current obligations. Different obligations could materially change our costs.	Refer to our response provided in Workbook 1- Regulatory determination, regulatory template 7.3.	Not necessary, because we are assuming that our current obligations will not change materially.	Unable to be quantified - depends on the degree of any future legislative and regulatory changes.	Capex and opex	We have not undertaken sensitivity analysis, as counter-factual scenarios difficult to reasonably estimate.

Issue	Assumption	Rationale for “reasonableness”	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Service classification and ring-fencing	We will apply the service classification in the AER’s Framework and Approach paper and the current ring-fencing arrangements will not change materially.	A different service classification could change our capex and opex forecast for SCS. A change in the ring-fencing arrangements could affect how we can provide our distribution services, which could potentially also change our capex and opex.	AER’s Framework and Approach paper – see also chapter 4 of our Regulatory Proposal.	Not necessary, because we are applying the AER’s Framework and Approach paper.	Not able to be quantified because would depend on which services would move between classifications.	Capex and opex	Not able to be estimated
Customer preferences and expectations	The preferences and expectations of participants revealed through our stakeholder engagement program accurately reflect those of our customers generally.	We have engaged effectively with a broad range of stakeholders on a broad range of matters. It is reasonable to expect that their preferences and expectations are representative of those of our broader customer base.	Refer to our customer engagement overview document and to chapter 2 of our Regulatory Proposal.	We have assessed the preferences and expectations of participants through our stakeholder engagement program and have had regard for these in preparing our Regulatory Proposal.	Unable to be quantified because customers’ views have been incorporated into our forecasts – an alternative forecast has not been prepared.	Capex and opex	Not able to be estimated

Issue	Assumption	Rationale for "reasonableness"	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Addressing customer concerns about affordability	Our forecasts have particular regard for the affordability of electricity supply and appropriately respond to our customers' concerns.	The National Electricity Rules (NER) require us to address the concerns of consumers in developing our forecasts.	Refer to our customer engagement overview document and to chapter 2 of our Regulatory Proposal.	We have assessed the preferences and expectations of participants through our stakeholder engagement program. They have identified affordability as a key concern. We have had regard for this in preparing our Regulatory Proposal.	See chapter 14 of our Regulatory Proposal for indicative price and bill impacts.	Capex and opex	See chapter 14 of our Regulatory Proposal for indicative price and bill impacts.
Service outcomes	We will maintain, but not improve, our average system-wide service outcomes, consistent with clause 6.5.6(a) and 6.5.7(a) of the NER. We will seek to improve outcomes on our worst performing feeders consistent with our regulatory obligations.	The NER does not allow the AER to approve expenditure that improves service outcomes, unless it is required by a regulatory obligation. Our expenditure forecasts reflect this requirement.	Refer to chapters 6 and 7 of our Regulatory Proposal.	Not necessary, because we are reflecting the requirements of the NER.	Unable to be quantified because have not prepared counter-factual.	Capex and opex	We have not undertaken sensitivity analysis, as counter-factual scenarios difficult to reasonably estimate.

Issue	Assumption	Rationale for “reasonableness”	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Forecast capex and opex	Our capex and opex forecasts are required to deliver the safety, reliability and customer outcomes set out in our Regulatory Proposal.	Achieving our stated safety, reliability and customer outcomes depends on us delivering our proposed capex and opex program, which in turn relies upon the AER approving our forecast Annual Revenue Requirements.	Refer to chapters 6 and 7 of our Regulatory Proposal.	Our Regulatory Proposal justifies each component of our forecast Annual Revenue Requirements, including our forecast capex and opex.	See chapters 6 and 7 of our Regulatory Proposals.	Capex and opex	We have not undertaken sensitivity analysis, as counter-factual scenarios difficult to reasonably estimate.
Demand	Our base case network peak demand forecast provides an appropriate basis for our network augmentation forecast.	Our peak demand and energy forecasts have been prepared consistent with good industry practice, with independent input and verification. They provide the best view of “expected demand” for the purposes of clauses 6.5.6(a)(1) and 6.5.7(a)(1) of the NER.	Refer to chapter 5 of our Regulatory Proposal.	We engaged ACIL Allen to provide updated independent advice and recommendations on our forecasting methodology based on Industry best practice for system maximum demand, energy and customer number forecasts.	See chapter 5 of our Regulatory Proposals.	Capex and opex	Not able to be estimated.

Issue	Assumption	Rationale for "reasonableness"	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Customer numbers	Our base case customer number forecast provides an appropriate approach for our connections capex forecast and the customer numbers component of our opex rate of change.	Our customer number forecasts have been prepared using independently verified methodology and recommendations.	Refer to chapter 5 of our Regulatory Proposals.	We engaged ACIL Allen to provide updated independent advice and recommendations on our forecasting methodology based on Industry best practice for system maximum demand, energy and customer number forecasts.	See chapter 5 of our Regulatory Proposals.	Capex and opex	Not able to be estimated.
Cost allocation	Our CAM provides an appropriate basis for attributing and allocating costs to, and between, our distribution services.	Our CAM has been approved by the AER in accordance with the requirements of clause 6.15 of the NER, the AER's Cost Allocation Guideline.	Refer to our approved CAM and clause 6.15 of the NER, the AER's Cost Allocation Guideline and the AER's Ring-fencing Guideline.	Not necessary, because our CAM has been approved by the AER. We have applied this Method in forecasting our Annual Revenue Requirements and capex and opex.	Unable to be quantified because have not prepared counter-factual.	Capex and opex	We have not undertaken sensitivity analysis, due to difficulty in quantifying reasonable maximum and minimum.

Issue	Assumption	Rationale for "reasonableness"	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Unit rates/standard estimates	Unit rates/standard estimates are used in the development of our bottom up forecasts where appropriate.	Our unit rates/standard estimates provide the best view of the actual costs that we will incur.	Refer to GHD External Unit Rates Review Report (Attachment 7.003).	We have engaged GHD, an independent expert to provide advice on, and to review, our unit rates to ensure these are reasonable and reflect prudent and efficient operations.	We have not prepared any forecasts other than on the basis of our proposed CAM. For this reason, we are not in a position to identify an alternative.	Capex	Not able to be estimated
Real cost escalations for capex	Our real cost escalations used for our capex forecasts are reasonable and reflect prudent and efficient costs.	These escalations have been prepared consistent with good industry practice, with independent input and verification. They provide the best view of the actual costs that we will incur after the application of our objectives.	Refer to Attachments 6.005 and 6.006.	We engaged BIS Oxford to provide advice and recommendations regarding appropriate escalation rates, and used the average of these and those calculated by the AER's consultant Deloitte.	Refer to Attachments 6.005 and 6.006.	Capex	We have not undertaken sensitivity analysis, due to difficulty in quantifying reasonable maximum and minimum.

Issue	Assumption	Rationale for "reasonableness"	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Inflation	Our forecast inflation is reasonable and reflects the inflation-related costs that we will incur.	<p>Our inflation forecast reflects the AER's preferred approach to forecasting inflation, by taking the geometric mean of:</p> <ul style="list-style-type: none"> • two years of forecast inflation published by the RBA in its most recent statement of monetary policy, and • eight years of forecast inflation at the midpoint of the RBA's inflation 2–3% target, of 2.5%. 	Refer to section 9.4 of our Regulatory Proposal.	Not necessary, because we are applying the AER's preferred approach to estimating forecast inflation.	See section 9.4 of our Regulatory Proposal.	Capex and opex	We have not undertaken sensitivity analysis, due to difficulty in quantifying reasonable maximum and minimum.

Issue	Assumption	Rationale for "reasonableness"	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Current period capex	We will deliver our forecast capex in the remainder of the current period, which will provide an appropriate basis for our capex program in the next period. Our forecast capex is less than our capex allowance for the current regulatory period.	What we spend in the next period in part depends on what we spend in the current period.	Refer to chapter 7 of our Regulatory Proposal.	Not necessary, because this reflects our assumption about what will be spent in the remainder of the current regulatory control period.	See chapter 7 of our Regulatory Proposal.	Capex	We have not undertaken sensitivity analysis, as counter-factual scenarios difficult to reasonably estimate.
New Connection Policy	We will apply our new Connection Policy.	Our Connection Policy has changed. The Connection Capex forecast reflects this new policy.	Refer to section 7.9 of our Regulatory Proposal and Attachment 7.147 for our Connection Policy.	We have assessed the preferences and expectations of participants through our stakeholder engagement program and have had regard for these in preparing new Connection Policy.	See section 7.9 of our Regulatory Proposal.	Capex	We have not undertaken sensitivity analysis, due to difficulty in quantifying reasonable estimates.

Issue	Assumption	Rationale for "reasonableness"	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Opex base year	The financial year 2018-19 is an appropriate base year for our opex forecast and, subject to our proposed adjustments, is reasonably representative of our recurrent prudent and efficient future opex requirements.	This reflects the AER's preferred approach to forecasting opex.	Refer to chapter 6 of our Regulatory Proposal.	Not necessary, but we have undertaken benchmarking and other assessments to demonstrate the efficiency of our 2018-19 base year.	See chapter 6 of our Regulatory Proposal.	Opex	We have not undertaken sensitivity analysis, as counter-factual scenarios difficult to reasonably estimate.
Opex trend assumptions	Our forecast changes in input costs, output growth and productivity are reasonable and appropriately reflect the trend in our future opex, given our (adjusted) opex base year.	We are applying the AER's preferred framework to forecast these trends.	Refer to chapter 6 of our Regulatory Proposal.	Not necessary, because we used the AER's preferred framework to forecast each component of the opex trend.	See chapter 6 of our Regulatory Proposal.	Opex	We have not undertaken sensitivity analysis, as counter-factual scenarios difficult to reasonably estimate.

Issue	Assumption	Rationale for "reasonableness"	Source/Basis	Assurance Review	Quantum	Application	Impact sensitivity
Cost pass throughs and contingent projects	The AER will approve our nominated pass through events and we will not have any contingent projects.	<p>We have nominated several pass through events (in addition to the prescribed pass through events in the NER) and have not proposed any contingent projects.</p> <p>If the AER decides not to accept our nominated events, and/or decides to create one or more contingent projects, then our capex and opex forecasts would potentially need to change.</p>	See chapter 12 of our Regulatory Proposal.	Not necessary, because any change in our capex and opex forecasts would depend on which (if any) nominated events the AER rejects and what (if any) contingent project it determines.	Unable to be quantified because depends on nature of future events.	Capex and opex	Not able to be estimated.