

ATTACHMENT 6.11

DELIVERABILITY

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1. PURPOSE

The purpose of this paper is to present to the Australian Energy Regulator (AER) Essential Energy's response to the issues raised by the AER in the Draft decision Essential Energy distribution determination (2015-16 to 2018-19) – Attachment 6: Capital Expenditure, in particular, those issues related to the deliverability of the replacement expenditure (repex) program proposed by Essential Energy in its 2014-19 Regulatory Proposal.

This report does not respond in detail to the following issues identified by the AER:

- > Investment Governance Framework (Attachment 6.2 – Capital Governance)
- > Justification of Repex Expenditure (Attachment 6.6 – Response to AER Draft Determination of Replacement Expenditure)
- > Efficiency of Labour Costs (Attachment 7.5 – Response to Deloitte Access Economics Report on NSW DNSP Labour Analysis)
- > Productivity (Attachment 7.6 – Productivity Paper)

2. SUMMARY

The following table 2-1 summarises the issues raised by the AER about the deliverability of the forecast work program, together with Essential Energy's response.

Table 2-1: AER Issues and Essential Energy's Response

AER issue	Summary of AERs reasons and findings	Essential Energy's response
The deliverability of the larger repex program has not been demonstrated	<p>The increase in repex volume indicates a move towards a larger volume of smaller projects</p> <p>The impacts of moving from 'greenfield' work programs to 'brownfield' work programs</p>	<ul style="list-style-type: none"> > While repex has increased, augex has decreased. Essential Energy has a multi-skilled internal work force that readily works across replacement and augmentation activities. > Contractors are also multi-skilled and currently work across augmentation and replacement activities. > As the total work forecast for the 2014-19 regulatory control period is less than that delivered in the 2009-14 period, no deliverability issues are anticipated. > The move from greenfield work to brownfield work has no impact on the volume or size of projects in the distribution work group area as all work, whether augex, repex or customer connections, are small projects with the same skill requirements and work type > An overall increase in the number of (smaller) projects in the transmission work group area due to the move towards Brownfield type work is well within the capability of the service delivery system due to the much larger drop in augex work for this group.
Deliverability issues have occurred in the regulatory control period	A shortfall in work delivered from the forecast has occurred in the 2009-14 regulatory control period. Issues experienced in the 2009-14 period are associated with resource constraints	<ul style="list-style-type: none"> > The total volume of work forecast for the 2014-19 regulatory control period is less than that actually delivered in the 2009-14 period. No further significant issues are anticipated.
Lack of a Strategic Delivery Plan for the repex program		<ul style="list-style-type: none"> > A resource demand model has been developed as the first step in the development of a Strategic Delivery Plan. As the work to date has not indicated any issues, the plan will be developed after the AER final decision to take account of that decision.

3. BACKGROUND

In its regulatory submission, Essential Energy forecast expenditure of \$863M to replace assets that have reached the end of life. EMCa noted in their report for the AER that this forecast is 24 per cent higher than the replacement expenditure (repex) undertaken in the 2009-14 regulatory control period (RCP).

The AER in its draft decision has raised concerns around the ability of Essential Energy to deliver the larger Repex program and has criticised Essential Energy for the lack of a Strategic Delivery Plan.

The key issues raised by the AER and its consultants EMCa are:

- > The increase in repex volume indicating a move towards a larger volume of smaller projects
- > The impacts of moving from 'greenfield' work programs to 'brownfield' work programs
- > The resource challenges of the 2009-14 RCP and what this implies for the 2014-19 RCP
- > Essential Energy's lack of a Strategic Delivery Plan.

Essential Energy also notes that revised RIN data provided to the AER on 1st August 2014 was not taken into account in the AER's review.

4. DISCUSSION

In this section, the following is discussed:

- > the impact of the revised RIN information on repex
- > the effect of the increase in repex on the ability of Essential Energy to deliver its forecast works program
- > the AER's comments regarding the apparent move from 'greenfield' work programs to 'brownfield' work programs
- > deliverability issues in the 2009-14 RCP and the impacts of this on the 2014-19 RCP
- > strategic delivery planning.

We conclude that the forecast works program, including the program for replacements, can be delivered.

4.1 Essential Energy's Updated RIN

The AER's consultant EMCa discussed the significant increase in repex proposed by Essential Energy for the 2014-19 RCP. The EMCa report contained a table (repeated below at table 4-1) showing the proposed repex by asset group for the 2014-19 RCP compared with the 2009-14 RCP expenditure:

Table 4-1: Proposed Repex by Asset Group – EMCa Report

ASSET GROUP	2009-14 RCP	2014-2019 RCP					Total	%
	Total	2014/15	2015/16	2016/17	2017/18	2018/19		
OVERHEAD CONDUCTORS	65,739	15,779	15,779	15,779	15,779	15,779	78,895	20%
POLE & POLE TOP STRUCTURES	266,115	58,178	60,960	63,806	66,723	69,693	319,360	20%
SCADA	18,324	7,040	5,604	6,339	4,667	4,726	28,376	55%
SERVICE LINES	25,963	3,116	6,232	7,270	7,270	7,270	31,158	20%
SWITCHGEAR	175,685	30,085	35,867	35,641	27,504	25,696	154,793	-12%
TRANSFORMERS	89,226	12,786	14,353	18,122	15,648	16,193	77,102	-14%
UNDERGROUND CABLES	24,358	5,016	6,905	7,535	7,535	6,915	33,906	39%
SUBTRANS BALANCING	-	7,203	7,559	7,364	13,176	10,468	45,770	100%
DIST LINES BALANCING	-	2,437	4,670	8,484	8,916	12,402	36,909	100%
OTHER	31,978	13,098	8,304	11,197	11,482	12,502	56,583	77%
TOTAL	697,388	154,738	166,233	181,537	178,700	181,644	862,852	24%

However, an updated RIN was subsequently submitted to the AER by Essential Energy following the work done by EMCa. The same table updated for the information in the new RIN is presented in table 4-2 below:

Table 4-2: Proposed Repex by Asset Group – Updated Essential Energy RIN

ASSET GROUP	2009-14 RCP	2014-2019 RCP					Total	%
	Total	2014/15	2015/16	2016/17	2017/18	2018/19		
OVERHEAD CONDUCTORS	62,764	16,895	17,785	18,370	19,880	18,765	91,695	46%
POLE & POLE TOP STRUCTURES	254,070	67,638	66,035	73,669	78,413	84,836	370,592	46%
SCADA	17,309	7,040	5,604	6,339	4,667	4,726	28,375	64%
SERVICE LINES	24,788	3,190	6,472	7,662	7,768	7,866	32,957	33%
SWITCHGEAR	186,398	36,238	43,296	44,196	36,183	35,275	195,188	5%
TRANSFORMERS	67,174	16,914	17,731	20,092	19,203	21,448	95,388	42%
UNDERGROUND CABLES	22,929	5,664	8,137	10,012	11,364	7,481	42,658	86%
SUBTRANS BALANCING								
DIST LINES BALANCING								
OTHER	29,163	3,383	3,483	3,583	3,684	3,790	17,923	-39%
TOTAL	664,596	156,962	168,543	183,923	181,163	184,186	874,777	32%

As can be seen from the above tables, there have been some significant changes to the RIN data – notably:

- > The balancing line items, and some of the costs in the ‘Other’ category have been reallocated back across the asset groups;
- > Public lighting costs have been included, increasing the total repex in the 2014-19 RCP (however, when public lighting is removed the data in the two tables matches); and
- > Repex spend in the 2009-14 RCP has decreased by \$33M following adjustments made to the RIN at the AER’s request in order to meet their reporting guidelines (these adjustments resulted in a reallocation of prior spend across different RIN segments).

These changes have impacted on the change in repex between periods. As a result, the increase in repex has now moved from 24 per cent to 32 per cent, with increases across all asset categories

4.2 Impact of the Increase in Repex Volume

EMCa and the AER stated they were concerned the increase in proposed repex in the 2014-19 RCP, when compared to the 2009-14 RCP, indicated a larger volume of low value projects and that Essential Energy had not indicated they had plans in place to meet this challenge. We note that in making this assessment, the AER considered only Essential Energy’s asset replacement program and did not consider the overall volume of work to be delivered or the multi-skilled nature of Essential Energy’s internal and external contract workforce.

In this section, we will show the forecast repex program can be delivered. This is evidenced by:

- > a multi-skilled workforce that can readily accommodate a mixture of work activities, particularly across replacement and augmentation activities
- > maintenance (excluding vegetation management which is a specific outsourced activity) is forecast at similar levels to 2012/13, a program of work that was delivered
- > the total repex and augex works program is less than the peak workload delivered in 2011/12 and subsequent years.

We will also discuss the work programs delivered by each of the major work groups to show that no deliverability issues are evident at a disaggregated level as follows:

- > Transmission – zone substation programs (augex and repex) including transformers, switchgear within zone substations, SCADA, telecommunications and managing the delivery of greenfield subtransmission lines by external resources;
- > Distribution – HV and LV feeders, distribution substations, switchgear outside zone substations, service lines and subtransmission line refurbishment (which is partially outsourced).

Multi-Skilling at Essential Energy

The delivery strategy adopted by Essential Energy is based on a multi-skilled work force to suit the large geographical area serviced by Essential Energy’s network which is characterised by low customer density and large volumes of assets between customer connection points. In this section, we will discuss how the multi-skilled nature of the work force allows resources to be readily applied to maintenance, replacement and augmentation activities.

The Essential Energy workforce model is based around small, medium and large depots spaced geographically across NSW. Most of these depots have significant distances between the large depots to the smaller depots –e.g. Cobar (small depot) is 300km from Dubbo (large depot) and 460km from Broken Hill (large depot). To provide an efficient delivery strategy and to respond to fault and emergency situations, the work force allocated to these depots is required to maintain an underpinning core competency combined with a variety of other competencies to align to the work requirements. When work is required to be performed on the network, multiple “work packs” are scheduled to be completed at the same time resulting in a combination of replacement and augmentation works being performed at the same time.

Employees often acquire skills beyond that assumed in a standard position description due to lack of access to specialised services. For example, the employee may work to a lineworker position description but may be capable of carrying out the local area cable jointing or operation of large plant.

Regionally based field-facing employees may also be multi-skilled with pools of resources delivering work in the areas of distribution trades, transmission trades and field support. As such, Essential Energy’s resource groups reflect the diverse skill requirement and capability of regional employees. Workforce challenges, driving the need for a multi-skilled workforce include:

- > Location of project work, including forecast program locations
- > Geographic dispersion of employees
- > Cost of employees being mobilised
- > Requirement to ensure skills retention to deliver critical functions where support from the nearest alternative depot is often a significant distance away.

As a result, employees within these resource groups work across maintenance, repex, customer connections and augex. Hence, the increase in repex cannot be viewed as undeliverable without viewing the proposed changes to maintenance, customer connections and augex and the impact of these changes on the workload for these groups in the 2014-19 RCP.

Maintenance Activities

Many maintenance activities are currently performed by Essential Energy’s multi-skilled workforce, making use of generic skills. Some maintenance activities such as inspections, however, require specific or specialist skills. In this section, we will show that the level of maintenance work remains consistent with previous years and hence no deliverability issues are anticipated.

As depicted in figure 4-1 below, the proposed maintenance requirements (excluding vegetation management which is outsourced) for the 2009-14 RCP have been maintained at the same levels as the 2013/14 year throughout 2015-2019, with only CPI growth.

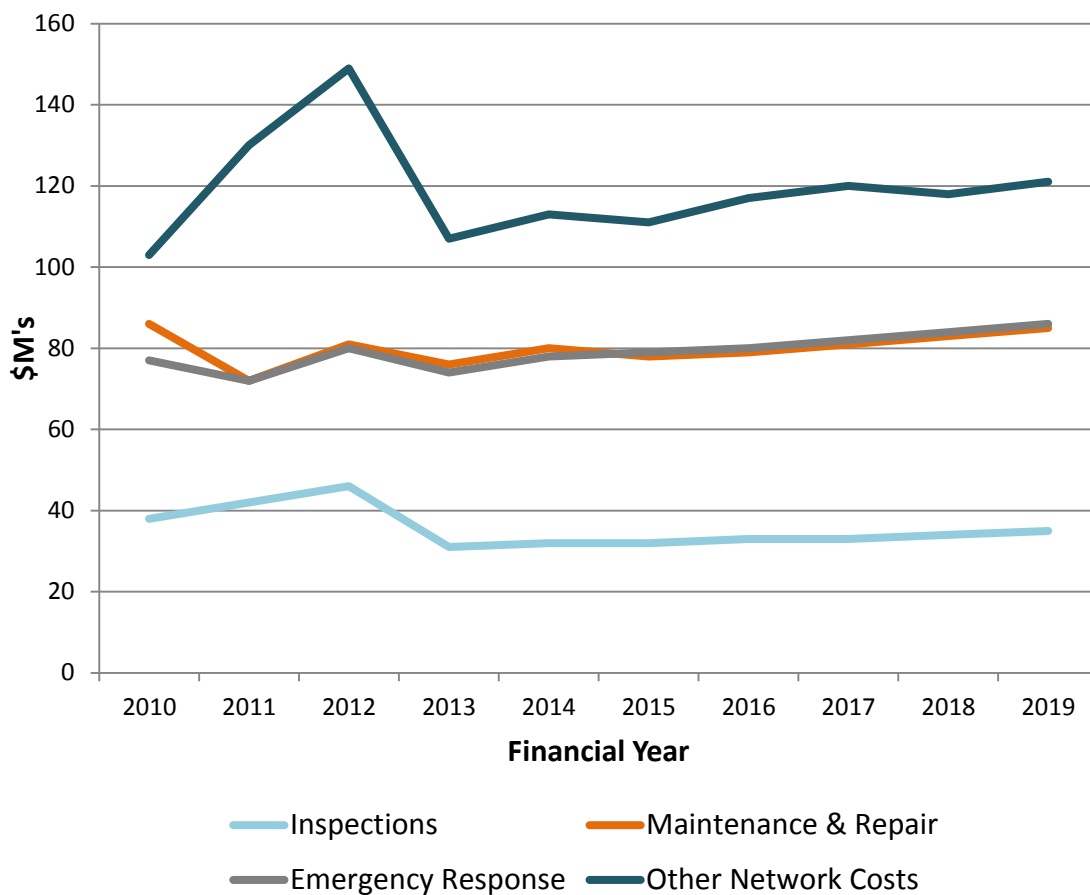


Figure 4-1: 2009/10 to 2018/19 Actual and Proposed Maintenance Programs

The majority of maintenance works is undertaken by the distribution work group although there is some maintenance undertaken by the transmission work group as well. Figure 4-1 indicates that the leveling of maintenance activity holds true at the sub-category level as well. As a result, the maintenance requirements for both the distribution and transmission groups remains constant across both RCP's and hence has no impact on deliverability.

Replacement and augmentation activities

The majority of replacement and augmentation activities can be undertaken by our multi-skilled workforce, with only a small portion of replacement activities requiring specialist services, such as the complex in situ replacements of protection equipment that occurs from time to time. In this section, we show the overall capex program is lower than that delivered in the 2009-14 RCP and hence no deliverability issues are anticipated.

As can be seen in figure 4-2 below total delivered capex for replacement and augmentation expenditure peaked at around \$500M in 2011/12 before declining over the final two years of the 2009-14 RCP. The graph also shows that total capex proposed for the 2014-19 RCP is flat when compared to the final years of the 2009-14 RCP.

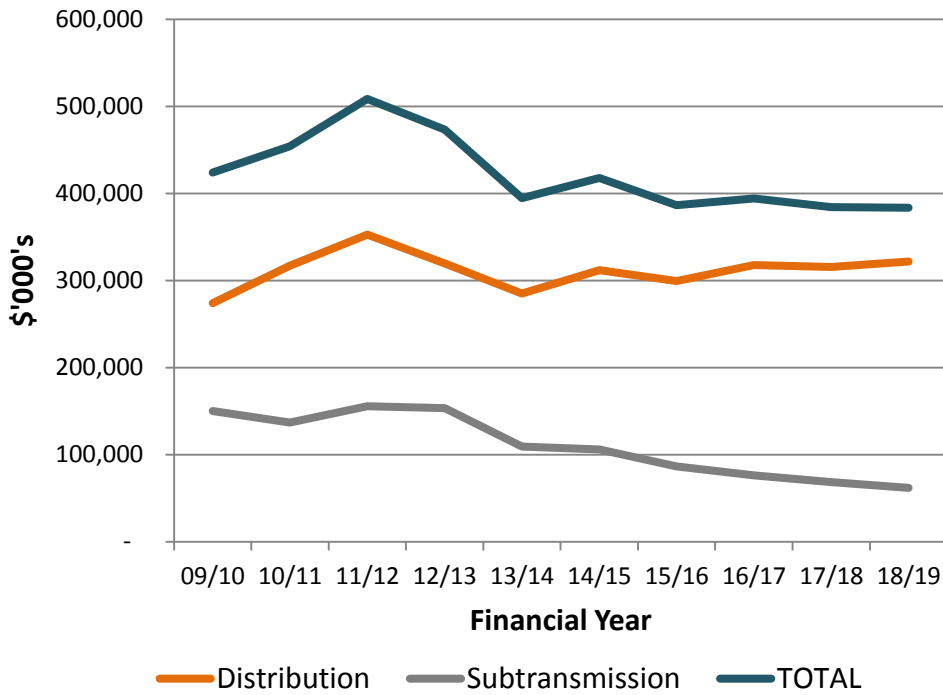


Figure 4-2: 2009/10 to 2018/19 Actual and Proposed Total Capex Programs

However, this flat trend in capex masks the underlying profiles of the volume of work proposed for the transmission and distribution work groups:

- > Transmission – significant falls in total work volume throughout the 2014-19 RCP; and
- > Distribution – slight increase year on year throughout the 2014-19 RCP.

Figure 4-3 below highlights the change in total capital, as well as augex and repex, for the transmission resource group across the 2009-14 RCP and the 2014-19 RCP.

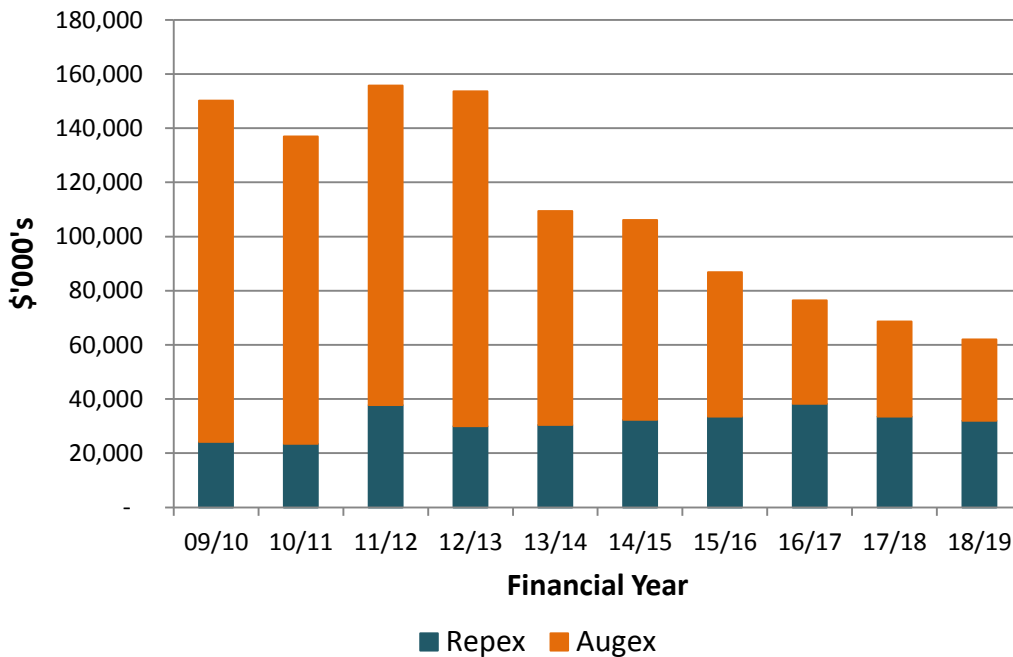


Figure 4-3: 2009/10 to 2018/19 Actual and Proposed Transmission Work Group Capex Programs

As can be seen there is a modest increase in proposed repex requirements in the 2014-19 RCP, which is more than offset by the significant decline in augex work.

Figure 4-4 below shows the capex for the distribution resource group. It shows a small increase in year on year expenditure across the 2014-19 RCP. This small increase is within the variation that occurred year on year in the 2009-14 RCP, and is significantly below the peak delivered in 2011-2012, and will not impact on the ability of Essential Energy to deliver the works program.

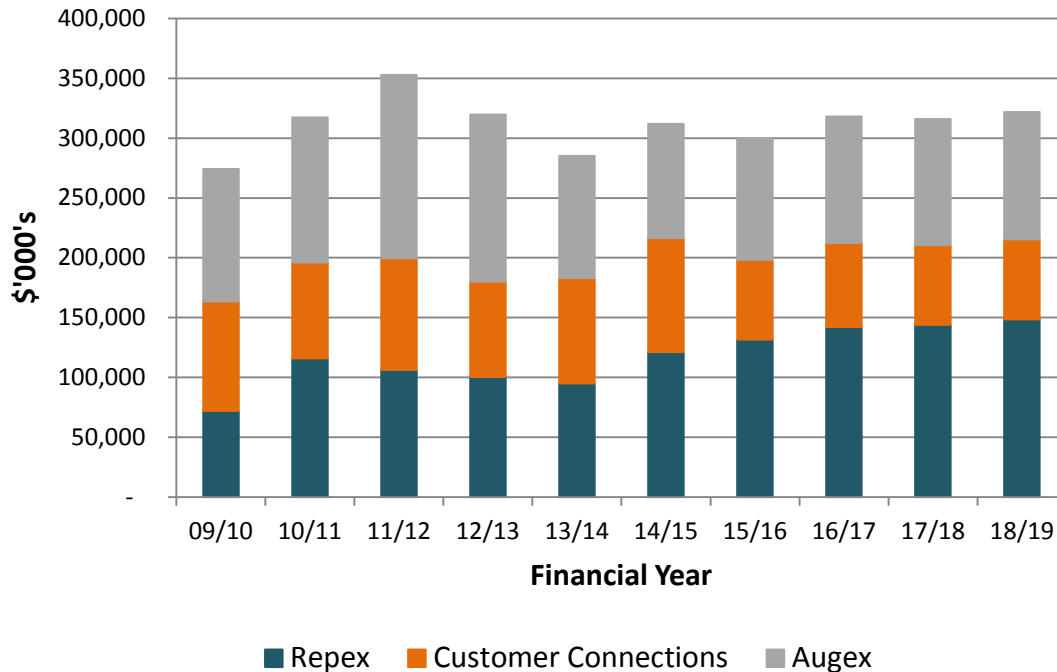


Figure 4-4: 2009/10 to 2018/19 Actual and Proposed Distribution Work Group Capex Programs

4.3 Moving from 'Greenfield' to 'Brownfield' work programs

EMCa has indicated the change in repex volumes indicates a move 'from greenfield capex to brownfield capex' and therefore a higher volume of smaller projects. This is not necessarily the case. Deliverability needs to be viewed in terms of the overall work programs and the differing work groups that deliver these programs as work groups cross over multiple work programs.

This section will review the proposed changes to capital across the 2009-14 and 2014-19 RCP's and the impact of this on deliverability and show that sufficient internal and external resources are available to deliver the work program.

Capital Program Delivered by the Transmission Resource Group

Table 4-3 below shows the breakdown of work volumes for each of the transmission work categories. It shows that:

- > overall the work volume for the transmission resource group has dropped by 43%, with a 59% drop in augex work partly offset by a 7% increase in repex work; and
- > increases are forecast in SCADA, Network Control and Protection and in Transformers and Other categories. Decreases are forecast in all other categories.

Table 4-3: Transmission Work Group Program Volumes Comparison – 2009-14 RCP to 2014-19 RCP

TRANSMISSION WORK GROUP PROGRAM VOLUMES	Driver	2009-14 RCP	2014-19 RCP	Change	Change %
Subtransmission Substations, Switching Stations, Zone Substations	Augex	213,005	84,271	(128,734)	-60%
Subtransmission Lines	Augex	262,695	83,769	(178,926)	-68%
HV Feeders - Land Purchases and Easements	Augex	47,282	6,490	(40,792)	-86%
Other Assets	Augex	37,068	55,807	18,738	51%
Total Augex		560,050	230,336	(329,714)	-59%
SCADA, Network Control and Protection Systems	Repex	17,309	28,375	11,066	64%
Switchgear	Repex	99,762	97,572	(2,191)	-2%
Transformers	Repex	28,828	38,453	9,624	33%
Underground Cables	Repex	-	5,245	5,245	
Other (Public Lighting, Metering - Last RCP)	Repex	29,163	17,923	(11,240)	-39%
Total Repex		175,063	187,568	12,505	7%
TOTAL TRANSMISSION WORK GROUP		735,113	417,904	(317,209)	-43%

Within the transmission trades area of work, the change from augex to repex does represent an increase in the volume of smaller projects. However, the resources freed up by the drop in augex work more than adequately covers this increase in repex work. In addition, large segments of both the augex and repex work are outsourced and therefore the impact on internal resources is further reduced (see Appendix A for further details on subtransmission delivery models). The greater number of smaller projects is well within the capability of Essential Energy's service delivery system.

The major impact on resourcing from the change in repex volume for the transmission work group is on the availability of external contractors. However, despite the increased brownfield work being inherently more complex and more labour intensive, the sheer size of the drop in greenfield work more than compensates. The external contractors doing augex in the 2009-14 RCP in the most part have transferable skills (as the work requires the same trade qualification) and are easily able to pick up the extra volume in repex as the market capacity has not diminished. Note these contractors were already delivering repex work in the 2009-14 RCP and so they have the experience and skills required. It is an increase in volume that needs to be met in the 2014-19 RCP and the significant fall in augex work provides the resources for these contractors to deliver the increased repex volume.

Capital Program Delivered by the Distribution Resource Group

Table 4-4 below shows the breakdown of work volumes for each of the distribution work categories. It shows that significant increases are forecast in Substations, Overhead Conductors, Pole Top Structures, Poles, Service Lines, Transformers and Underground cables, with a small change in Switchgear.

Table 4-4: Distribution Work Group Program Volumes Comparison – 2009-14 RCP to 2014-19 RCP

DISTRIBUTION WORK GROUP PROGRAM VOLUMES	Driver	2009-14 RCP	2014-19 RCP	Change	Change %
HV Feeder - Overhead Lines	Augex	424,927	354,988	(69,939)	-16%
HV Feeder - Underground Cables	Augex	71,582	50,668	(20,914)	-29%
Distribution Substations	Augex	22,529	47,367	24,837	110%
LV Feeder - Overhead Lines	Augex	96,373	52,948	(43,425)	-45%
LV Feeder - Underground Cables	Augex	11,772	8,334	(3,438)	-29%
Total Augex		627,184	514,305	(112,879)	-18%
Customer Connections	Customer Connections	432,829	366,079	(66,750)	-15%
Overhead Conductors	Repex	62,764	91,695	28,932	46%
Pole Top Structures	Repex	29,710	58,973	29,262	98%
Poles	Repex	224,360	311,619	87,260	39%
Service Lines	Repex	24,788	32,957	8,169	33%
Switchgear	Repex	86,636	97,616	10,980	13%
Transformers	Repex	38,346	56,935	18,589	48%
Underground Cables	Repex	22,929	37,413	14,484	63%
Total Repex		489,533	687,209	197,675	40%
TOTAL DISTRIBUTION WORK GROUP		1,549,547	1,567,593	18,046	1%

The table above highlights that whilst there is a significant increase in repex work for the distribution work group there are also substantial falls in the workload from customer connections and augex. Unlike the transmission program, a move from augex to repex in this area does not signify a move towards a larger volume of smaller, more complex projects. In a majority of cases augex projects consist of an upgrade to an existing line to allow for increased growth – this is exactly the same type of work, with the same complexities and skill types required, as repex work.

In addition, the nature of the entire work program for the distribution work group is one consisting of a large number of small projects – the augex projects and repex projects are of a similar size and labour requirement. This was the case for the 2009-14 RCP and will be the case for the 2014-19 RCP. This can be

evidenced in table 4-5 below which highlights the average number of man hours per project across the different RIN capex categories. These projects represent the majority¹ of the projects in the Distribution work group's FY15 program:

Table 4-5: Comparison of Average Project Size in Man Hours Across RIN Capex Categories

Capex Program	No. of Projects	Total Man Hours	Average Man Hours
Augex	335	119,814	358
Customer Connections	397	80,307	202
Repex	425	146,080	344
TOTAL	1,157	346,201	299

Table 4-5 highlights that a move away from augex and to repex, based on the FY15 average man hours per project, may actually require less man hours to deliver rather than more man hours.

As a result the change in program mix for the distribution work group poses no deliverability issue as the overall capex workload is flat for the 2014-19 RCP versus the 2009-14 RCP and the skill type requirements are the same.

4.4 Resource Challenges from the 2009-14 Regulatory Control Period

In its draft decision the AER advised that it was 'most concerned' about the ability of Essential Energy to deliver the program for the 2014-19 RCP, as one of the reasons given for the shortfall in delivery in the 2009-14 RCP was resourcing issues. In this section, we will show that the actual work program delivered was greater than that forecast for the 2014-19 RCP and hence that no deliverability issues are anticipated.

Figure 4-5 below shows the actual capex delivered and the proposed work volumes in Essential Energy's regulatory proposal for the 2014-19 RCP. The graph highlights that the requested capex allowances are well within what Essential Energy has proved it can deliver. No significant resourcing issues beyond those already resolved for the 2009-14 period are anticipated.

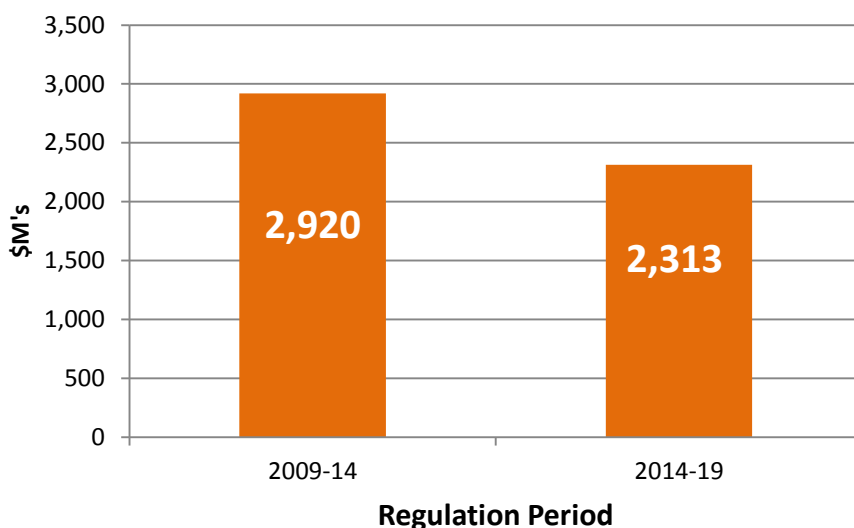


Figure 4-5: Total Actual Capex Delivered 2009-14 vs Total Proposed Capex 2014-19

¹ Note: those projects included in the sample are solely related to one of the RIN capex categories – those not included in the sample are a mix of two or all three RIN capex categories

4.5 Strategic Delivery Planning

The AER indicated its concerns at the lack of a Strategic Delivery Plan being in place for the delivery of the 2014/19 repex program. In this section we will discuss why a delivery plan was not developed and not provided with the Regulatory Proposal.

As demonstrated in this paper, the total program of works required to be delivered in the 2014-19 RCP in less than that actually delivered in the 2009-14 RCP. Recognising this, Essential Energy continued with its business as usual planning cycle.

The development of a Strategic Delivery Plan is underway with the plan to be produced by the end of the financial year to coincide with the release of the AER's final 2014-19 Determination for Essential Energy. The first step to the production of the plan has been the development of a resource demand model, which is nearing final completion. This modelling work to date indicates that the resource demand will be within the capabilities of the current internal and external resources available and that under delivery is a low risk. The resource demand model will be finalised to reflect the outcomes of the revenue review process.

Following the completion of the first Strategic Delivery Plan Essential Energy will then fall into the annual resource planning cycle depicted in Figure 4-6 below.

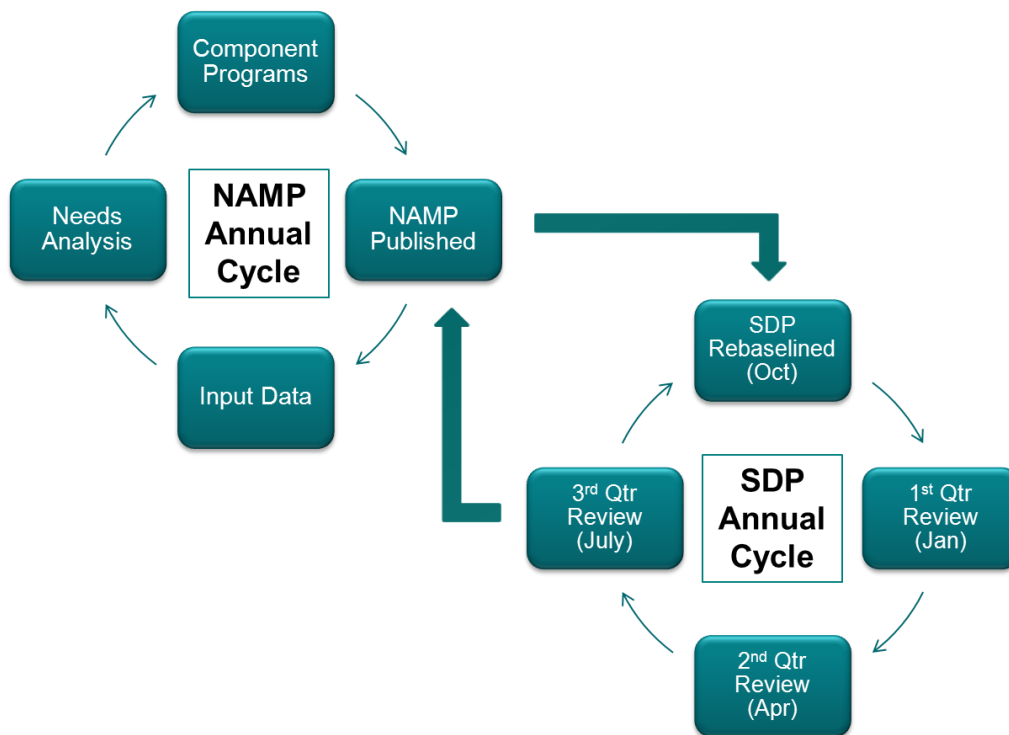


Figure 4-6: Network Asset Management Plan and Strategic Delivery Plan (SDP) Planning Cycle

The timing of the SDP annual update and quarterly reviews, and the purpose of each review, will be as indicated in table 4-6 below:

Table 4-6: SDP Review Cycle

Month	Purpose
October	Annual update – alignment with NAMP and provide input into the Network Workforce Plan
January	Quarterly review – alignment with next financial year's proposed Network capital, operating and maintenance programs (and budget)
April	Quarterly review – the program for the following financial year is agreed, detailed delivery planning is underway and current financial year end forecast is available
July	Quarterly review – all set to commence delivery at the start of the new financial year

APPENDIX A: SUBTRANSMISSION DELIVERY MODELS

The following points highlight the delivery models employed by Essential Energy across some of these key sub-categories of work delivered by the transmission resource group:

PROGRAM	DELIVERY MODEL
Sub-transmission transformer replacement	Delivered via external contract to supply, deliver and install the transformers to site. Internal resources are only required to do final connections and commissioning
Sub-transmission transformer refurbishment	Delivered via an external contract. Internal resources are only required to complete the transformer install/removal and final connections and commissioning
Brownfield substation civil works	A civil sub-contractor panel has been in place throughout the 2009-14 RCP to complete all civil works in substations and will be maintained throughout the 2014-19 RCP - internal resource is only required for supervision
Switchboard replacement program	Existing buildings are used where possible for this program. However, some projects replace the switchboard in a new built building on site whilst some projects are new switchboards in a pre-fabricated building. For the new building built on site all civil works are fully outsourced with the switchboard supplier supplying and installing the switchboard. For the switchboards in pre-fabricated buildings the switchboard and building is contracted out to supply and install. The efficiencies of the switchboards being supply and install are achieved by the manufacturer completing pre assembly and install using labour subject to market rates. This method for switchboard supply and install applies to both greenfield substations and brownfield switchboard replacements. Internal resources only do the final connections and commissioning. The volume of work proposed for the 2014-19 RCP is well within Essential Energy's resource capability - as the switchboard replacement program increases the number of greenfield substations decrease. Therefore the resources that had been used in connecting and commissioning the greenfield new substations will be utilised to connect and commission the brownfield replacements
Substation control panels	Supply and install of control panels is fully outsourced. Essential Energy issues control and protection relays to the control panel manufacturer who completes the manufacture at their workshop before delivery to site. The efficiencies realised due to the construction and wiring of the panels in a workshop using labour subject to market rates rather than internal labour. Internal resources do the final connections and commissioning
Sub-transmission substation construction	New greenfield substation construction is outsourced. The outsourced work includes all the civil construction and erection of the electrical infrastructure. Major equipment is provided by supply and install contracts. Internal resources complete the final connections and commissioning.
Sub-transmission overhead line works	Delivered externally via the overhead line sub-transmission construction panel. Over the 2009-14 RCP there had been a significant number of new 'greenfield' powerlines constructed. That new construction work has now come to an end. As a result, there are sufficient external resources in the market to complete the 'brownfield' refurbishment work. Internal lineworkers will assist with construction via live line techniques and commissioning. The resources required for project managing the lower volume of refurbishment work is the same for the higher volume of new line construction in the 2009-14 RCP
Design Resources	A blended delivery model for design was utilised during the 2009-14 RCP to assist in delivering our Sub-transmission major projects capital program and will be utilised to assist to deliver the repex program in the 2014-19 RCP. The design contractors are engaged under a panel arrangement and assist with design delivery and specialised expertise for individual projects or portions of work for both Sub-transmission Mains & Zone Substations.

SCADA program	There is an increase in repex for the SCADA program RTU replacement in 'brownfield' substations. This program is to replace the existing fleet of RTU's as they come to end of life. This will be delivered utilizing the internal resources that had been completing the 'greenfield' SCADA/RTU installations in the 2009-14 RCP and therefore there is no impact on deliverability.
Communications program: RF Infrastructure Refurbishment program	This program is to refurbish the radio tower assets across the State and a tender is about to be released to the market to complete these works. Internal resources will be required to manage the project and support the external resource during works that may interface with internal works
Communications program: Mobile Two Way Radio Replacement	This project is a one off radio frequency change project mandated by Australia's Communication and Media Authority and is due for completion by June 2015. There is a significant investment on base station radio equipment which will be installed by external resource. Internal resource will be required to tune the radio equipment in Essential Energy's mobile fleet
Communications program: Ancillary Radio Asset Replacement program	This program is for the replacement of time expired mobile radios. The dominant costs are materials and internal resource will be used to complete the installations
Communications program: Data Network Asset Hardware Replacement program	This program replaces the data network asset hardware at the Essential Energy properties across the state. The program will be delivered by a blended model where an external contractor will supply and install the new hardware and internal resources will assist with the testing and commissioning