Supporting Document 12.1.14
Essential Energy Network Delivery Plan
2019 - 2024

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1. Executive Summary

Essential Energy's Network Delivery Plan 2019-24 details the resourcing considerations and strategies for successful delivery of the network works portfolio for the 2019-24 Regulatory Control Period (RCP).

The scope of the network portfolio includes Standard Control capital and operating expenditure programs, as detailed within individual asset management and investment plans identified by Essential Energy's Asset Management and Engineering Division.

The proposed level of network investment (Standard Control and Alternative Control) for the regulatory control period is $1941m in operating and $1590m in capital program expenditure (real $18/19).

The forecasted network investment during this period represents network related operating expenditure levels relatively consistent in comparison with levels completed within the current 2014-19 RCP. Operating expenditure is forecast to reduce year on year across the regulatory period, largely driven by a reduction in vegetation expenditure. Network related capital expenditure is also forecast to reduce, with continuing focus to remain on replacement capital expenditure.

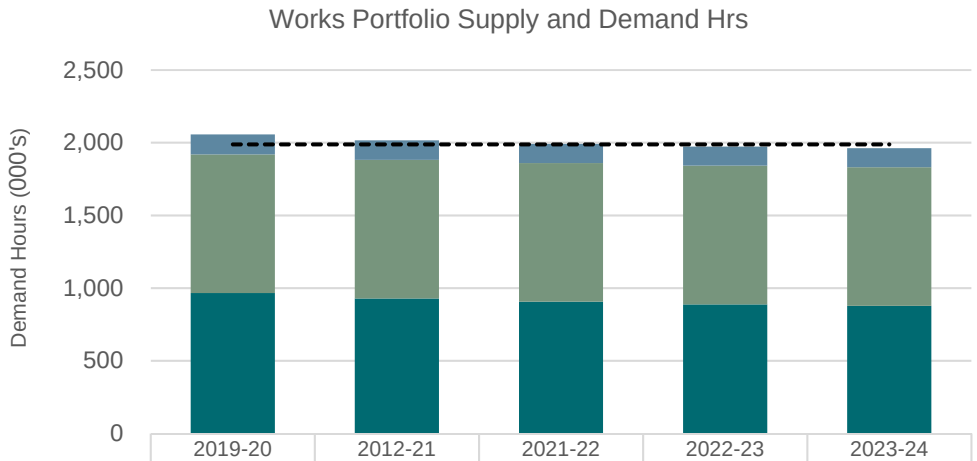
Alternative Control programs have also been considered within the works portfolio as the delivery of these programs forms part of the wider delivery portfolio as delivered by the Network Services Division.

As the network investment profile varies between the current and forthcoming regulatory period, a detailed assessment of the deliverability of the proposed portfolio is necessary. Essential Energy has reviewed the proposed works portfolio and conducted analysis on the resourcing requirements to deliver the consolidated works portfolio as contained within the Network Delivery Plan 2019-24.

This assessment has paid consideration to program level network investment, reviewed delivery constraints and examined delivery channels available to Essential Energy such as internal and external resourcing options.

Figure 1 below details the resource supply and demand hours required to deliver the works portfolio.

Figure 1 - Total Supply and Demand Hrs for Capex / Opex and ACS Programs



	2019-20	2012-21	2021-22	2022-23	2023-24
ACS	137,176	134,362	132,623	131,640	131,190
SCS OPEX	953,497	953,604	953,711	953,818	953,925
SCS CAPEX	965,632	928,173	905,834	888,046	877,254
Total Supply Hrs	1,988,531	1,988,531	1,988,531	1,988,531	1,988,531

Across the 2019-24 RCP, Essential Energy will continue to implement productivity and efficiency initiatives which will improve delivery performance, therefore reducing costs to electricity consumers. We will continue to look for further opportunities to revise and adjust delivery strategies to ensure program is delivered safely and efficiently.

Essential Energy has assessed the total network related works portfolio and is confident in ability to delivery on the consolidated works portfolio.

2. Introduction

Essential Energy manages and operates one of the largest distribution electricity networks in Australia, delivering electricity to over 840,000 customers across regional and rural NSW. As a network provider, the core business is to build, operate and maintain electricity infrastructure whilst providing safe and reliable electricity supply to residents and businesses across the network.

The role of the electricity network and services provided as a network provider will dynamically change over the coming decade. Essential Energy is committed to meeting the challenges associated with these changes, whilst providing network users a service that reflects customer needs and expectations. Throughout this period of change, the role of our network in facilitating the exchange of energy between points of generation and consumption will continue, meaning that ongoing maintenance and investment will be as important as ever. Ongoing improvements to how efficiently these maintenance and investment programs are delivered will continue to be an important strategic goal for us.

Essential Energy's customers are valued and are central to informing and shaping business decisions. As a result, the company's strategic direction has been fully informed by customer and stakeholder feedback on electricity affordability, and the role they see the electricity network will play meeting their needs, values and expectations.

"Essential Energy will deliver its services to customers safely, efficiently and sustainably at the lowest price possible and be a valuable participant in the electricity supply chain".

To achieve this outcome, Essential Energy has embarked on many strategic initiatives which actively address network prices and addressing current and future service needs of the consumer.

Essential Energy's 2019-24 Network Delivery Plan supports these initiatives by ensuring the work program is delivered safely and effectively. This entails assessing resource capacities and capabilities, prioritising and validating work programs and adopting delivery strategies to ensure work is delivered as efficiently as possible, providing the greatest value to customers.

The objective of this document is to detail assessments made by Essential Energy's for the 2019-24 Regulatory Control Period and outline the delivery framework to ensure the ability to deliver the works portfolio efficiently, safely and delivering value for the business and its customers.

3. Purpose

The Network Delivery Plan supports Essential Energy's 2019-2024 Regulatory Submission to the Australian Energy Regulator and should be reviewed in conjunction with the suite of supporting regulatory submission documents.

The Network Delivery Plan is based on the consolidated network related works programs. This includes Direct Control (Standard and Alternative Control) system capital and operating expenditure. Non-network expenditure is excluded within delivery plan and any associated resource analysis. The Plan utilises the portfolio of work programs proposed during the 2019-2024 RCP to identify delivery constraints and the delivery strategies required to ensure the supply of delivery resources matches the demand for them.

The Network Delivery Plan framework is structured around ensuring each works program is efficiently delivered, achieves safety excellence and is delivered to approved service standards and to expenditure and delivery milestones.

The key objectives of the Network Delivery Plan are to:

- Develop the consolidated network delivery work portfolio for the 2019-24 RCP;
- Forecast resource requirements to complete proposed work portfolio;
- Assess internal resource supply capacity and skill capabilities;
- Identify deliverability constraints and resourcing gaps;

- Support a more detailed, rolling two-year work program forecast;
- Align delivery and workforce resourcing strategies;
- Detail a delivery plan to successfully achieve the proposed works portfolio;

A robust delivery plan has been developed for the 2019-24 RCP taking these objectives into consideration as well as the forecast works volumes, whilst also allowing relative flexibility for unperceived changes within program delivery or resource requirements.

4. Overview

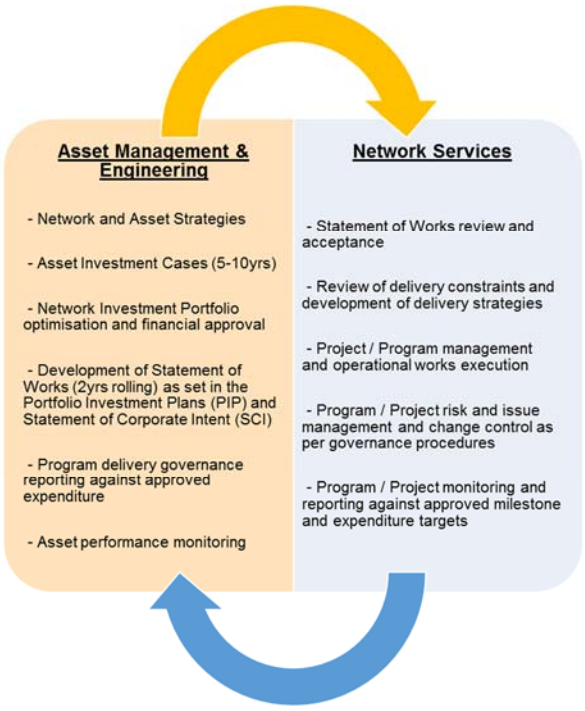
The development and delivery of Essential Energy's maintenance and capital projects and programs occurs is through a partnership of two key Divisions: Asset Management and Network Services. The Asset Management Division is accountable for developing sound investment programs and the delivery of those investment programs is the responsibility of the Network Services Division. The branch structure within Network Service includes internal and external delivery streams, as well as supporting functional divisions and is responsible for the day to day delivery operations and management of the network.

The main operational functions of Network Services include services such as program / project management, contract management and governance, work scheduling and packaging, operational performance reporting and construction across both transmission and distribution services.

Each financial year, an approved Statement of Works (SOW) for both capital and operating programs are formally agreed upon between the Asset Management and Network Service divisions, with delivery milestones, expenditure and accountabilities clearly defined.

The SOW includes a detailed list of defined programs and projects for completion within the financial year by Network Services. Network Services manages works delivery in-line with Essential Energy's governance framework (scope, time, cost, risk) as required to meet the network needs as set by the Asset Management division.

Figure 2 – Delivery Relationship Asset Management & Engineering / Network Services



5. Historical

The purpose of this section is to provide historical information that has informed the development of the Network Delivery Plan for 2019-24. This includes comparison between current and previous RCP's, organisational improvements, reforms and initiatives aimed at increasing efficiency of the delivery of the works portfolio.

Since 2012, Essential Energy has been on a journey of transformation to increase efficiency and productivity, which has substantially reduced both operating and capital network expenditure. This journey is ongoing, with further productivity improvements to be implemented during the 2019-24 RCP.

The current RCP (2014-19) works portfolio consists of a range of defined programs and projects which includes the utilisation of internal and external delivery resources across maintenance and capital programs. The deliverable portfolio includes repex and augex programs, biased toward the early years of the RCP (2014-15) which have been successfully delivered.

Further reductions of total network investment for the 2019-24 RCP are planned by the end of the RCP, with approx. investment levels forecasted to be 8 per cent lower by the end of the period compared to FY16-17. This value represents an approximate $100M ($FY18-19) reduction in network related expenditure.

Essential Energy's delivery performance across the current and prior regulatory periods demonstrates capability in delivering extensive programs of work. This performance along with implementation of delivery improvement initiatives provides a solid foundation and assurance on our ability to deliver the investment levels proposed for the forthcoming regulatory period.

6. Development of consolidated works program 2019-24

This section of the Delivery Plan explains the development of the 2019-24 consolidated work program.

The development of the consolidated works program involves linking together system investment and delivery resourcing requirements. Individual work programs, projects and network investment cases across maintenance and capital programs as well as alternative control services are used in this process to forecast resourcing requirements.

Alternative Control Services are included within the works program assessment to ensure the review reflects a holistic approach to works delivery, as the resources required to delivery these services are often the same as those required to deliver capex and maintenance programs for standard control services.

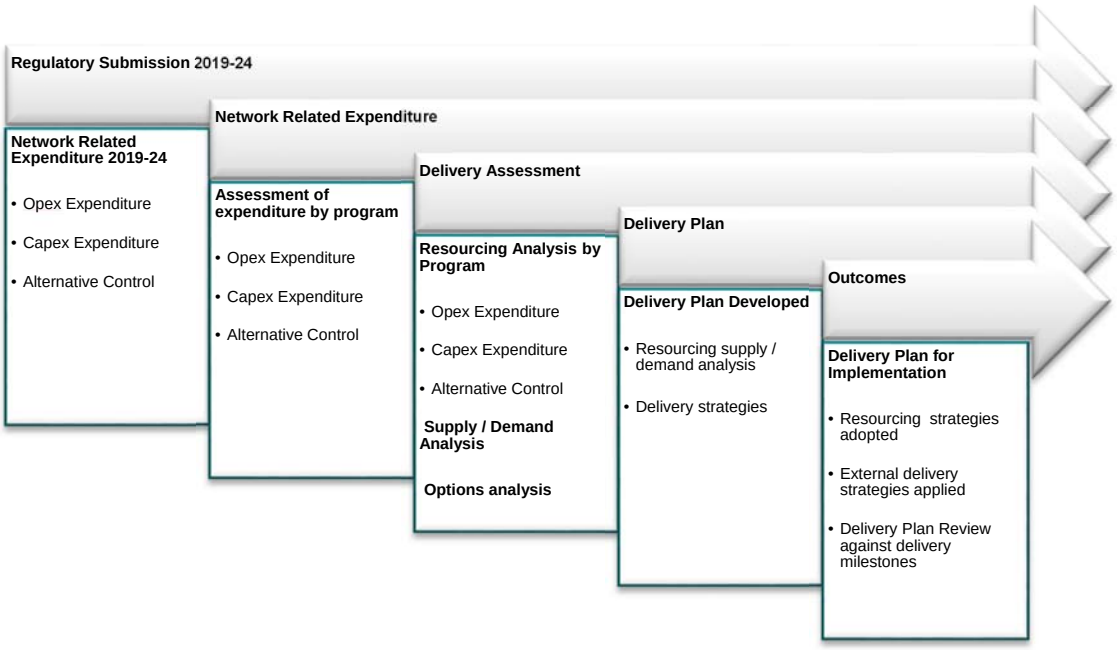
Each works program is reviewed annually or as changes occur to the proposed network investments and supports the ongoing development of the rolling two year works program.

Total resourcing demand for the work portfolio has been calculated based on labour allocations against each program investment, as recorded against historical unit rates. The consolidated works program analysis also provides feed-back and analysis to individual system investment cases and informing the development of delivery and workforce planning strategies.

Figure 3 below summarises the process applied to develop the Delivery Plan.

Figure 3 Network Delivery Plan Process

Essential Energy Network Delivery Plan Process Flow



7. Scope of the Maintenance and Capital Program 2019-24

This section provides an overview of Standard Control network capital and operating expenditure, including a comparison against historical and forecasted values. Costs detailed within this section are inclusive of materials, labour and plant.

Non-network expenditure has not been included in the development of the consolidated works program.

Further detail of inclusions within each stream can be referenced within the respective detailed chapters and individual investment cases within the Regulatory Proposal.

7.1 Network Maintenance Program 2019-24

The standard control operating expenditure forecast to decrease by $103M or 5.7% between the current and 2019-24 regulatory period. Figure 4 below provides an overview of this reduction.

Figure 4 Opex expenditure by Category 2004-2024 ($FY19 including OH's)

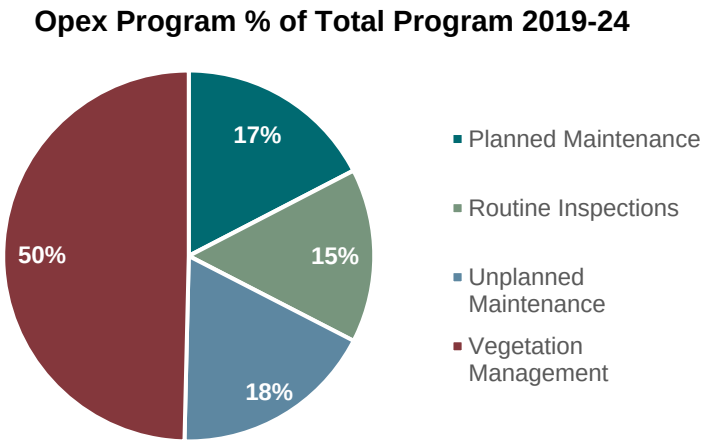
The opex expenditure in Figure 5 below is shown by program and provides the opex allocation across maintenance programs.

Vegetation management is the largest opex program and contributes to approximately 50% of all network related maintenance expenditure.

The vegetation program is delivered through a collaborative partnership between authorised contractors and Essential Energy.

Asset inspection and maintenance accounts for approximately 50% of opex programs and includes routine inspection, planned (corrective) and unplanned (emergency) programs.

Figure 5 Network Opex % by Category



7.2 Network Capital Program 2019-24

Essential Energy's capital expenditure for the regulatory period can be considered at program investment level and by delivery stream.

Figure 6 below provides a comparison of completed and forecast total standard control capital investment between 2004 and 2024 along with existing or proposed regulatory allowances.

The 2019-24 capital expenditure forecast includes reductions in augmentation and connection works (augex) across the proposed RCP compared to the current regulatory period.

The main driver for the 2019-24 proposed capital expenditure program is replacement capital (repex) works, with an increased focus on targeted asset replacement and refurbishment works such as distribution poles, substations and pole top equipment replacements.

Figure 6 Capex by Category 2004-2024 ($FY19 including OH's)

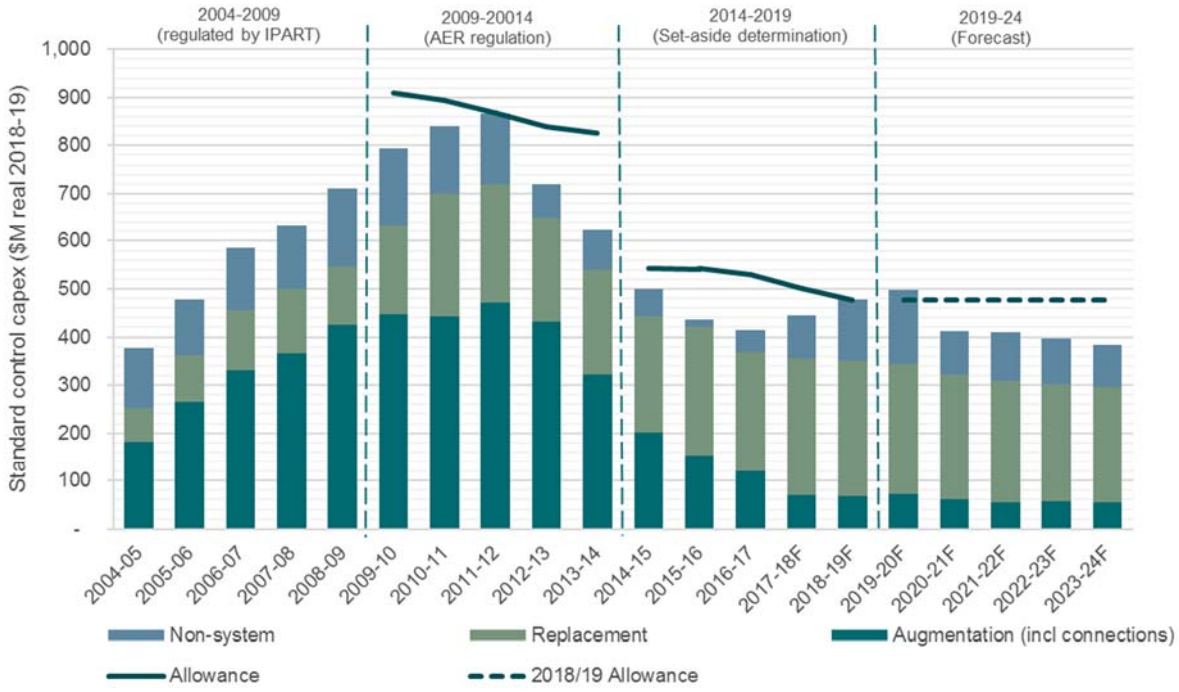
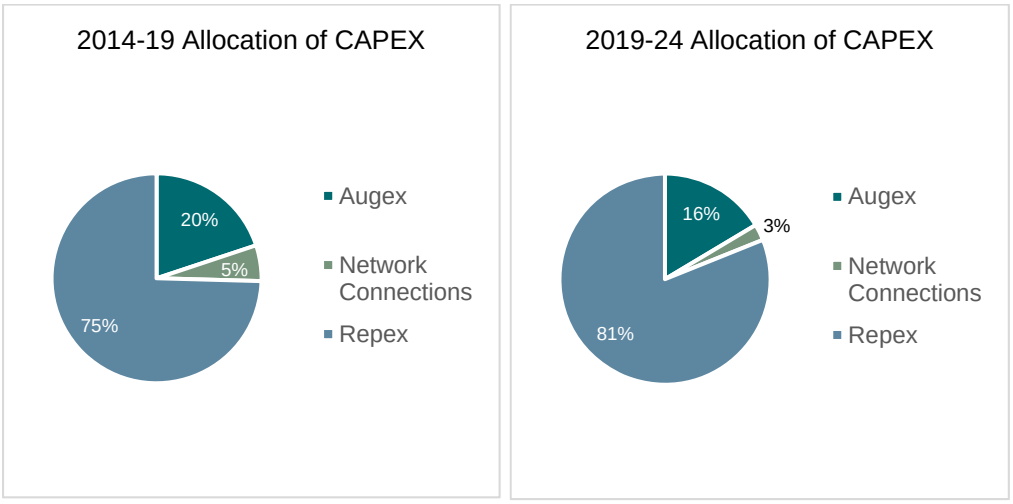


Figure 7 below provides a comparison of capex percentage allocation across the capital portfolio - albeit on a lower base in the 2019-24 period.

Augex expenditure accounts for load driven (growth) as well as non-load driven programs (safety and compliance).

Figure 7 Augex / Repex split 2014-19 and 2019-24



The network capital expenditure by program and delivery stream shown below in figure 8 and 9 details the allocation of capex expenditure between programs. More than 70% of network related capex expenditure is attributed to distribution programs of work, such as pole and pole equipment replacement works.

Several specific capex programs listed as outsourced programs are delivered by external service providers which support the strategic delivery objectives. These programs represent approx. 4-5% of the network capex investment work.

Figure 8 Capex Expenditure by Program 2014-24 ($FY19 including OH's)

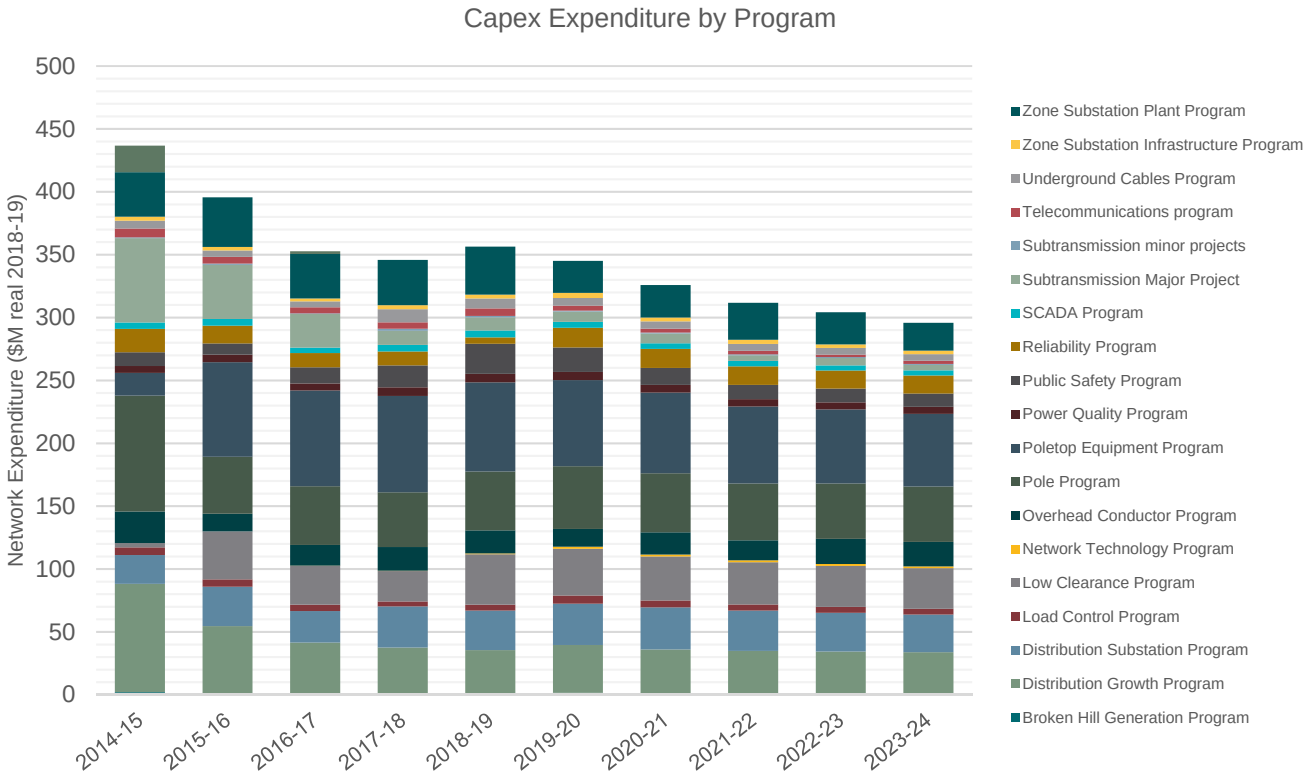
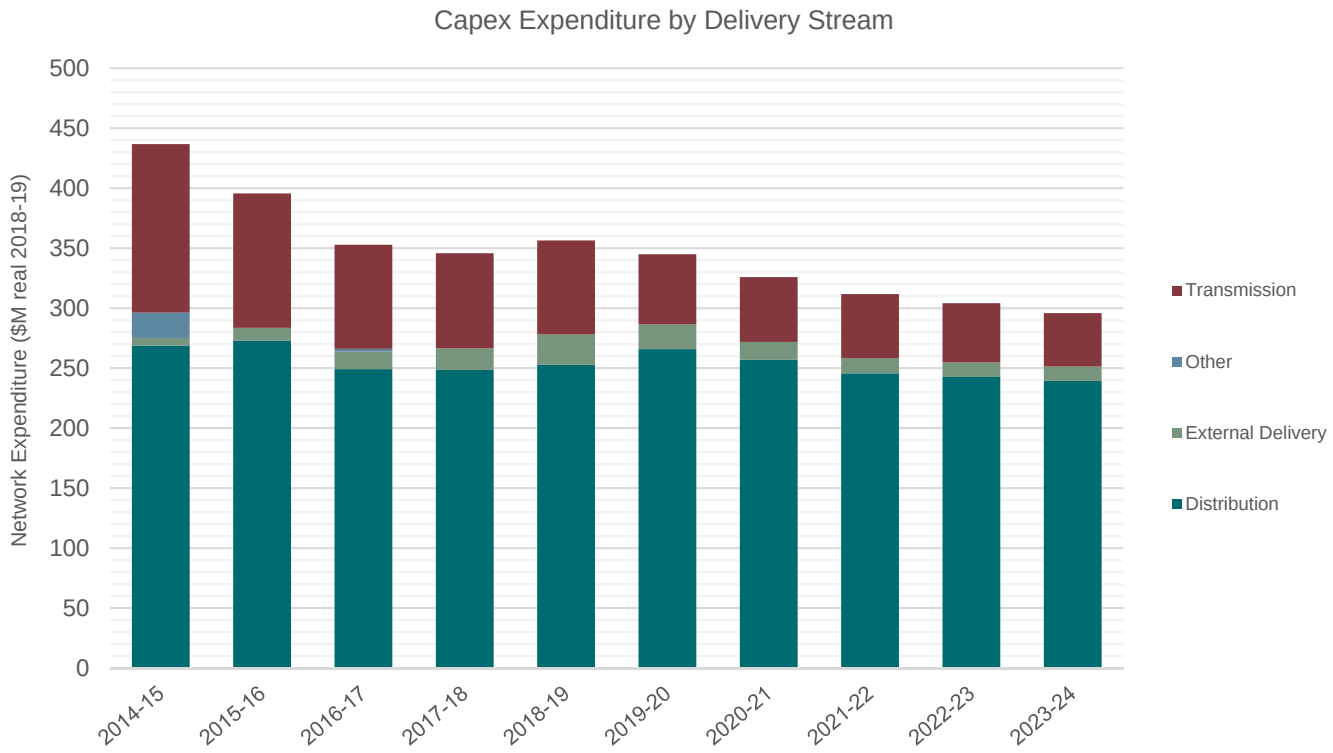


Figure 9 Capex by delivery stream ($FY19 including OH's)



8. Alternative Control Services 2019-24

Alternative Control Services (ACS) have been included within the deliverability assessment as the resourcing requirements for ACS's are drawn from the same resources delivering the maintenance and capital programs.

Projected volumes of work associated with Alternative Control Services for the RCP are expected to reduce in comparison with the current RCP 2014-19, based on the implementation of the AER's Ring Fencing requirements on contestable services and Power of Choice metering requirements.

The consolidated Alternative Control program accounts for approximately $35M per year across the RCP.

Alternative Control services included in the works programs are:

- Ancillary Services
- Metering Services
- Public Lighting Services

8.1 Ancillary Services

Ancillary network services are customer initiated works and are services that can be attributed to individual customers and are supplied on an "as needs basis".

Essential Energy's provides these services across network to facilitate customer needs. As these services are generated by customer demand, the forecasted volumes of these services are based on historical estimates rather than network investment. Typically, the resources required to delivery these services form part of the local resource pool of which are assigned across a variety of delivery tasks.

Examples of Ancillary Services include:

- Non-routine metering reading services;
- Accredited Service provider (ASP) Level 1 and 3 design and construction approval;
- ASP Authorisations;
- ASP Inspection and compliance;
- Outage facilitation and network commissioning for ASP Level 1 construction work.

For the forthcoming regulatory period the volume of work associated with ancillary services is estimated to $13M per year in operational costs and contribute to approximately 200,000 labour hours per year.

8.2 Metering Services

Metering services included within Alternative Control Services include maintenance and testing of customer metering equipment (type 5 and 6 meters).

Power of Choice (PoC) legislative changes to National Electricity Rules (NER) restricts Essential Energy from installing Type 5 and Type 6 (accumulation) meters. Under these changes retailers will facilitate the provision of metering services for new and replacement meters. This removes the need for metering capex expenditure and will reduce associated Opex metering expenditure over time.

Metering Services include:

- Meter inspection and testing – ensure meter accuracy over the life of the asset.
- Meter maintenance program
- Routine meter reading services

For the forthcoming regulatory period the volume of expenditure associated with metering services is approx. $11.5 per year.

8.3 Public Lighting Service

Public lighting services include bulk lamp replacement and maintenance programs. With public lighting customers typically include RMS and local councils but can also include other government organisations. Essential Energy streetlight population is approx. 160,000 public lighting assets.

Public lighting assets are expected to increase approx. 2,900 assets or 1.7% per annum. This increase in lighting population is due to new assets installed within customer funded land sub-divisions.

For the forthcoming regulatory period the volume of work associated with public lighting services is approx.

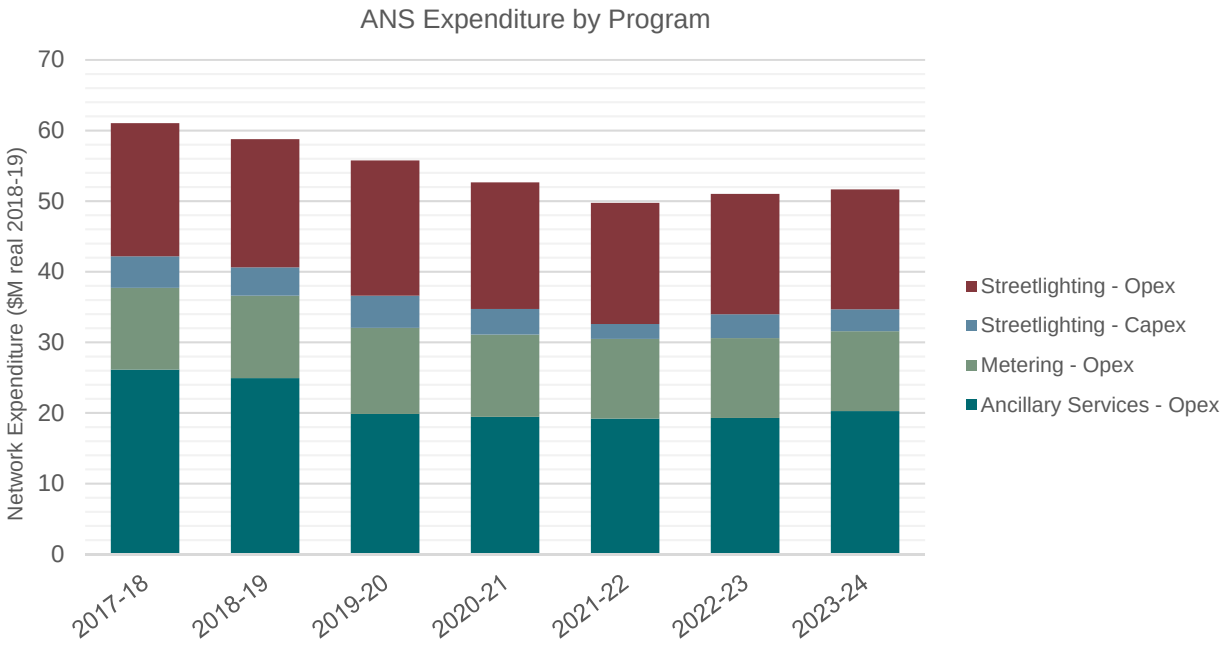
$10M / year and – S/L Maintenance accounts for approximately 50,000 labour hours per year.

Public Lighting Services include:

- Spot Luminaire Replacement – General maintenance replacement program
- Bulk Luminaire Replacement program – Capital investment replacement program
- S/L Bracket and Pole replacements;
- Council LED Program – Council driven LED replacement programs

Public Lighting programs such as bulk lamp replacements are typically delivered using external contractors as this work is categorised as low risk and there are added cost efficiencies using external delivery streams. This entails bulk replacement task being packaged and managed as an external works program across EE's footprint. With Essential Energy performing project and contractual management responsibilities. This allows internal resources to focus on public lighting maintenance and F/E repairs (spot replacement) which are completed on a "ad hoc" basis.

Figure 10 Total ACS Program Value ($FY19 including OH's)

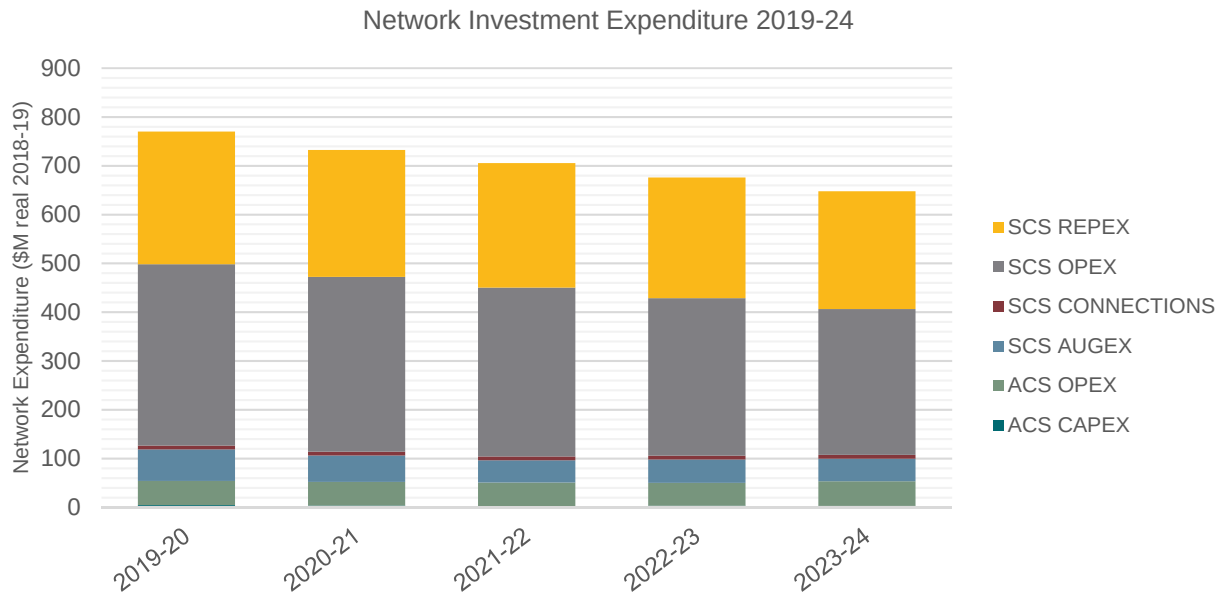


9. Consolidated Works Program 2019-24

The portfolio of network investment for the Regulatory Period 2019-24 is $3,531m ($FY18-19), with a yearly investment peak of $769m in 2019-20 and reducing to $648m in 2023-24. This represents an annual demand of approximately two million delivery hours of work.

The analysis of resource demand hours has focussed on the field delivery resourcing requirement to fulfil the proposed works portfolio. Figure 11 below shows the total Network Investment Expenditure split between investment categories in Standard Control Services (SCS) and Alternative Control Services (ACS).

Figure 11 – Network Investment Expenditure 2019-24 ($FY19 including OH's)



10. Delivery Strategies

Broadly, Essential Energy adopts a range of delivery strategies, which are tailored to meet specific needs of the project / program objectives. These strategies include:

- maximising internal resource utilisation and productivity gains through implementation of delivery initiatives and technology;
- increasing internal resource capacity through target usage of overtime;
- program levelling - managing areas of oversupply / undersupply (peaks and troughs) within delivery programs;
- developing capable and multi skilled resources that suit Essential Energy's diverse network delivery requirements and
- identifying and implementing productivity improvements through internal and external benchmarking.

Delivery strategies are developed to ensure the works programs is delivered effectively across the whole works portfolio.

Below is further detail of the delivery strategies employed by Essential Energy.

10.1 Multi Skilled – Experienced Internal Resources

Essential Energy's internal workforce are located across the company's large regional geographic network area, which is typically characterised as having a large volume of assets to low customer base. Resources are deployed within small, medium or large depots which are efficiently matched to service the local work programs and provide effective fault and emergency response.

Due to the nature of Essential Energy's geographically dispersed network, often employees within these depots perform a wide range of tasks across maintenance, capital (repex and augex) programs, along with fault emergency response, customer connections and service work (as per Ring Fencing). In many cases, internal employees are multiskilled acquiring a wider skill set well beyond specialised skillsets.

For example, Essential Energy's distribution powerline workers often perform a variety work tasks across variety of asset groups and disciplines such as sub-transmission and distribution augmentation or maintenance. This occurs across both overhead and underground networks and includes network switching and commissioning tasks as well as service connections and replacements. This increases flexibility, efficiency and utilisation in works delivery as resources can be redirected between programs of work to meet delivery needs.

Internal resources provide additional adaptability to meet peak workloads by mobilising within neighbouring depots and regions forming clusters of resources which can deliver for example, larger defined projects of fault or a focussed emergency response. This often takes place to complete larger maintenance or repex projects, where efficiencies are gained by pooling resources together achieving more work per planned outage, therefore reducing outage frequencies and impacts on customers.

In addition, internal resources provide flexibility through peak and troughs in delivery programs by mobilising teams out of area or region to areas to meet the peak workloads. An example of this would mobilising resources between regions or across programs for short term (1-2 months) packages of work which local resources cannot fulfil.

Increasing productivity and efficient utilisation use of internal resources is key delivery strategy of Essential Energy.

10.2 Contract Services

Essential Energy currently employs a combination of internal and external labour and services to deliver work projects and programs. The decision to engage external delivery services is assessed on a project / program level, based on specific delivery requirements and / or to meet the company's strategic objectives. The complexity of the work and safety risks are also key factors in determining suitability for external delivery or "outsourcing".

The use of external resources provides an increased flexibility and adaptability towards the delivery of the works program and minimises the risk of isolated resources as the work program varies by type or location. External delivery resources also add value to delivery streams by providing an additional delivery options and additional resource capacity to meet peak work-loads.

Several additional factors also influence the decision to engage external resources such as, external market maturity, procurement and contractor management arrangements, volume and consistency of work and the geographic spread of work across Essential Energy's network.

Therefore, outsourced programs are typically non-core programs of work, which are usually variable, low risk, high volume or require specialist services. Which are more effectively packaged and delivered in bulk allowing delivery programs to access competitive unit rates of external specialised contract suppliers.

External Resourcing Strategy is considered where:

- Utilisation of external resources where peak resourcing cannot be met using internal resources;
- Non-core specialised services are required;
- Value for money is demonstrated and programs or projects are low in risk or complexity;
- Contract delivery supports the company's strategic objectives.

Contract services are delivered under contractual arrangement models across Essential Energy. A strategic approach is applied to sourcing and procurement of external service suppliers to enhancing competition and providing greatest value for money.

10.3 Overtime

The targeted use of overtime across program delivery will be utilised where overtime provides the greatest value to delivery. The projects are assessed for suitable use of overtime as part of project design and establishment phases.

The targeted overtime essentially increases internal FTE capacity and provides flexibility in managing variations within works delivery requirements or addressing step change in local works programs. The use of targeted overtime can also provide increased productivity by minimising repetitive travel and project planning costs.

Where planned overtime is to be utilised, justification and approval process are followed to ensure overtime expenditure represents value for money.

10.4 Pre-qualified Supplier Panels

Pre-qualified supplier panel contractors are used by Essential Energy for the provision of goods and services as required over a specific period. The use of supplier panels stream-line the process of engaging external services increasing efficiencies by reducing administration time input and costs.

Pre-qualification panel suppliers must meet Essential Energy's mandatory requirements for insurances, WHS&E and technical specifications. This ensures suppliers engaged to complete are 'fit for purpose' reducing delivery and safety risks.

Outsourced programs or projects are packaged to maximise management and delivery efficiencies. For example – delivery tasks are packaged in groups of smaller tasks, such as frequency injection relay replacements (FIR) or single large projects such as design and construction of a zone substation.

Types of services provided under pre-qualified supplier arrangements:

- Design services – Transmission, Distribution & Optic Fibre;
- Project management services;
- Engineering – Civil and Electrical;
- Electrical Contracting – Transmission, Distribution & Service mains construction;
- Transmission services – Substation construction;
- Civil Works - Trenching & Under boring;
- Plant wet & dry hire;
- Surveying;
- Environmental services;
- Pole reinforcement;

- Asset Inspection and testing;
- Visual Aerial Inspections – Lidar;
- Traffic Management;
- Vegetation management;
- Bulk Streetlight replacements;
- Bulk service mains replacements;
- Load control relay replacements and
- Meter Reading Services – Routine and non-routine.

11. 2019-2024 Program Deliverability Assessment

Essential Energy has undertaken a review of the deliverability of the consolidated works program. This section identifies delivery demand and details the mitigation strategies for implementation for successful delivery of the 2019-24 consolidated work program.

The delivery plan has been developed by leveraging from lessons and experience obtained within current and previous regulatory periods, embracing productivity gains through using innovative technologies, application of best industry delivery practices and a commitment to continuous review and pursuit of improvement.

Essential Energy has demonstrated the ability to deliver large and complex network related opex and capex programs as demonstrated in the current regulatory period. Although this may be seen as a precursor to the successful delivery of the 2019-24 works portfolio, the forecast profile and levels of investment have changed and therefore require a sound assessment to determine future resourcing needs.

Resource modelling analysis has been completed to conduct resource capacity to demand assessments, which included modelling several delivery options to develop a resource profile which provides the greatest value.

Analysis of the resource modelling results confirm Essential Energy can deliver the network related works portfolio through application of the delivery strategies available to Essential Energy during the forthcoming RCP using both internal and external resources.

11.1 Network Resource Requirement

Essential Energy has carefully assessed the proposed network investment levels and completed detailed analysis of supply and demand delivery resourcing requirements. Delivery resources included within the assessment are the core delivery skills and roles associated with the works delivery within the Network Services Division.

The forecast resource modelling technique has analysed program investment levels (capex, opex and ACS) by delivery stream (distribution and transmission) and applied historical actual unit labour hours to determine average delivery hours associated with completing the work programs.

The assessment has also accounted for staff attrition rates, resource experience, utilisation rates and the use of multi skilled roles within programs. Efficiency initiatives are also considered as productivity gains are implemented and realised delivery resource demand will reduce.

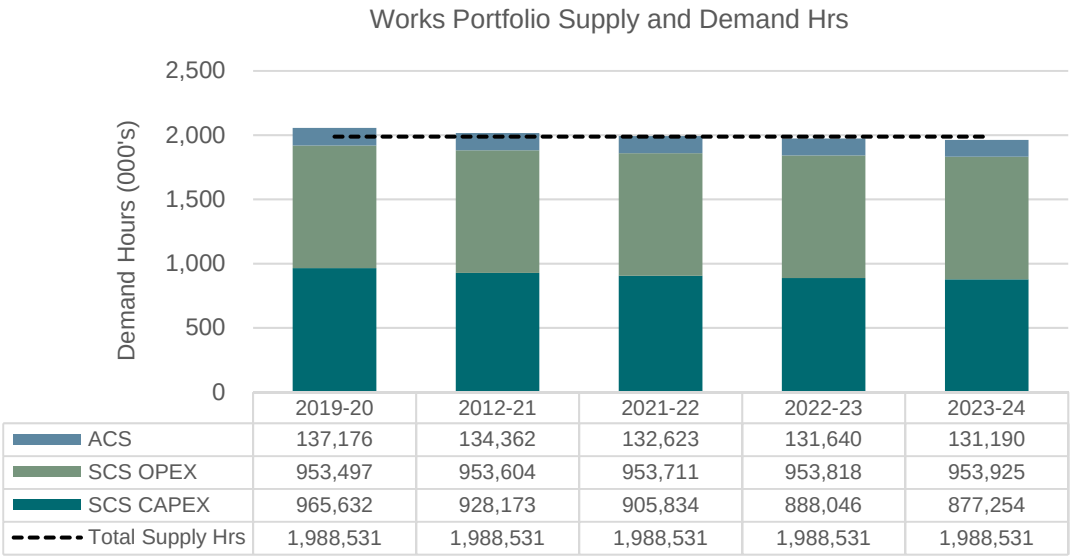
Resource supply and demand results were rigorously assessed as a critical component to ensuring the overall works program can be delivered successfully. As a result, the resource model developed an optimal resource profile to ensure the proposed works portfolio is achieved safely, efficiently and sustainably.

Outcomes of the forecast resourcing analysis have been incorporated and aligned with resourcing strategies and recruitment programs.

The consolidated network related program of work for the regulatory period represents a forecast average annual delivery resource requirement (demand) which is achievable and any potential shortfalls in supply can be managed utilising resourcing levels available and application of existing delivery strategies available to Essential Energy.

Figure 12 below shows the work portfolio of supply and demand in hours over the forthcoming RCP.

Figure 12 - Total Supply and Demand Hrs for Capex / Opex and ACS Programs



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Total Supply Hrs	1,988,531	1,988,531	1,988,531	1,988,531	1,988,531

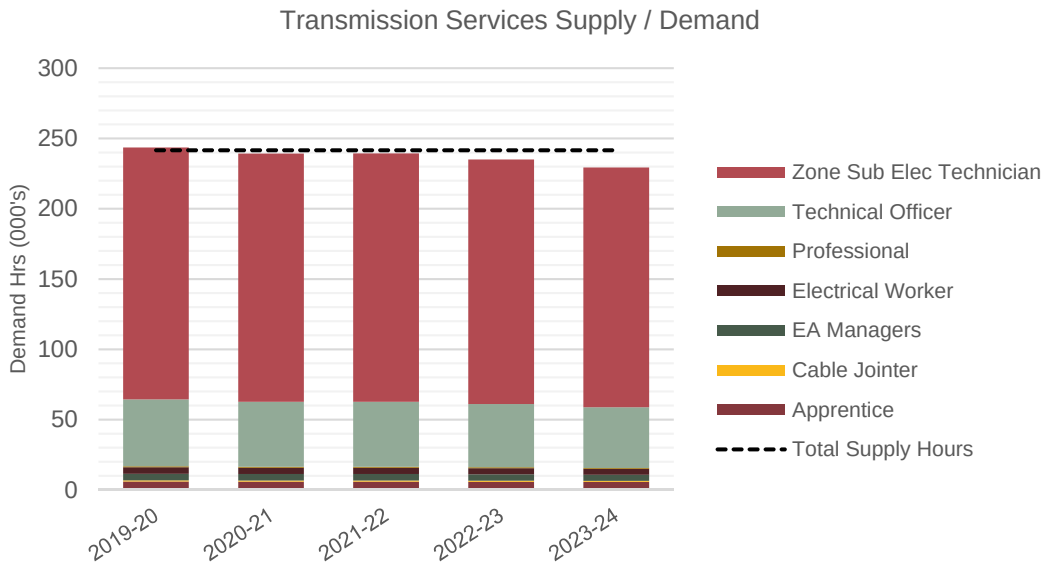
11.2 Transmission Services Supply / Demand

The Transmission Services delivery assessment forecasts show a moderate decrease in demand hours across the RCP, which is largely accounted to the reduction in proposed Transmission Capex expenditure. Customer driven projects, such as large-scale generation (renewable) projects have also been considered within the resource demand. As these projects require considerable allocation of resources to facilitate the connection of electrical equipment to the transmission or distribution networks.

The forecast indicates a year on year reduction of demand hours required across the RCP. Essential Energy's assessment of the demand requirements which can be managed by through reduced overtime allocation and resource attrition levels. Core resource attrition will be also accounted for as Transmission services apprentices move qualify and backfill key positions.

Figure 13 below shows the Transmission Services supply and demand in hours over the forthcoming RCP.

Figure 13 – Transmission Services Resource Hrs Demand 2019-24



11.3 Distribution Services Supply / Demand Analysis

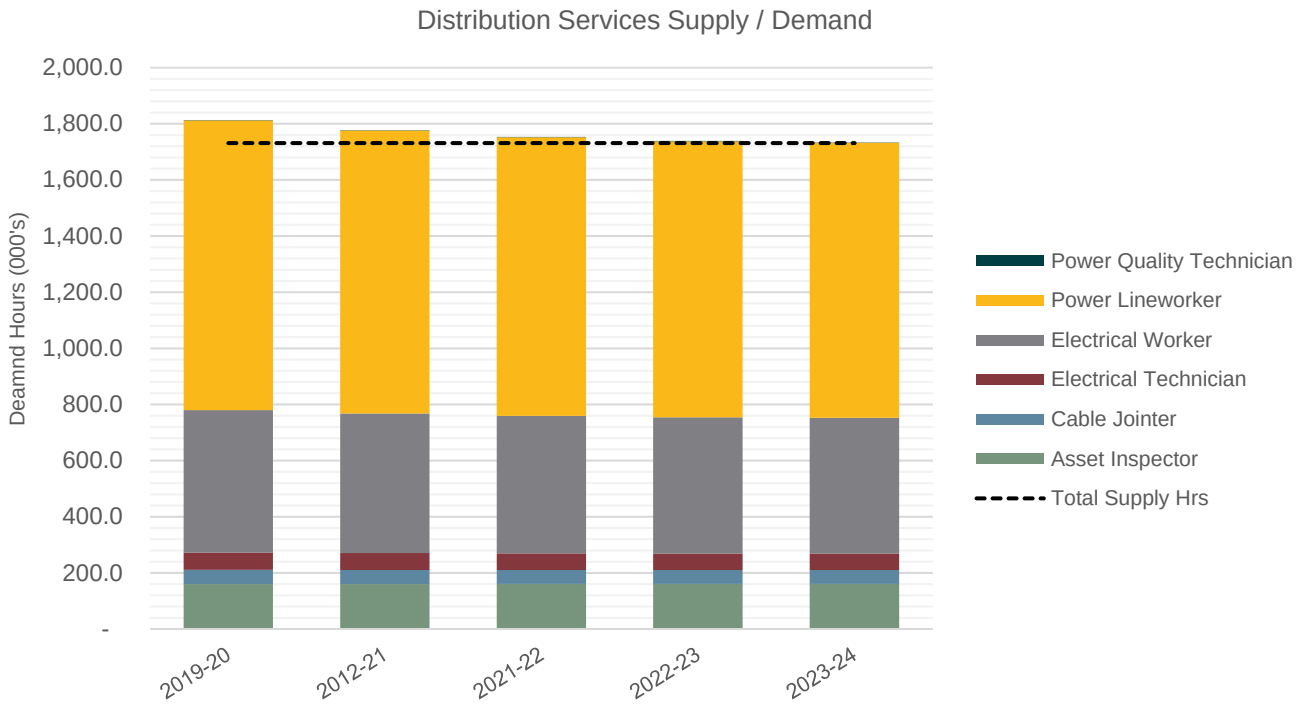
The total resource demand within Distribution Services remains constant for opex programs across the 2019-24 regulatory period, with capex demand levels reducing year on year across the RCP.

Whilst the distribution resource demand for 2019-20 is slightly above resource supply hours, the strategies outlined in Section 10 will be utilised to address this forecast imbalance.

Individual distribution level skill and trades have been assessed against supply and demand to highlight where supply shortfalls will occur. Powerline workers account for the biggest proportion of distribution resource demand at approx.60%, a critical resource group requiring a relatively consistent level of FTE's across the RCP to successfully deliver the distribution works program. Underground cable jointer supply will require careful management to meet demand levels associated with underground asset programs, particularly in repex expenditure.

Figure 14 below shows the Distribution Services supply and demand in hours over the forthcoming regulatory period.

Figure 14 – Distribution Services Resource Supply / Demand Hrs 2019-24



12. Works Resourcing Strategy

12.1 Internal Resourcing recruitment & development

Essential Energy's internal resource capacity of approximately 1.98M man hours per year is adequate to meet the needs of the network works portfolio. This will ensure delivery of core functions can be maintained with internal resources such as fault and emergency response, maintenance, construction and works management tasks.

Essential Energy will maintain an optimal internal resource capacity, fundamental to the safe and efficient delivery of critical programs of work. Where additional are required we will continue to develop core skillsets through targeted recruitment and apprenticeship programs as well providing multiskilling training to existing employees:

- **Apprenticeships** – Essential Energy's apprenticeship program develops core skills for future resourcing needs. Powerline worker apprenticeships represent the greatest number of apprentice intakes each year, as this is the largest single group of skilled trade and resource demand within Essential Energy.
- **Multi Skilling program** – development program aimed at multi skilling resource to obtain additional competencies such as providing underground network skills to overhead linesman and electricians acquiring powerline workers qualifications. This program will provide greater delivery flexibility to teams allowing resources to conduct a complete facet of electrical distribution related work activities.

12.2 External Resourcing

External resourcing arrangements will continue to be utilised to deliver non-core low risk programs or where the use of external delivery partnerships meet the company's strategic objectives.

The value of network investment expenditure delivered by external resources per year represents 4-5% of the total works portfolio (excluding vegetation), which varies as needed based on an assessment of program specific requirements.

The allocation of low risk delivery programs to external providers supports the delivery of the wider works portfolio as it allows internal resources to focus on delivery of core works programs and provides an increase internal resource availability to delivery core higher risk projects such as maintenance programs.

Outsourced programs or projects are to be issued in-line with Essential Energy's strategic procurements approach to optimise competitiveness and where practical engaged based on projected long-term volumes to promote sustainability to contract markets, and to maximise value for money.

Types of network investment programs and supporting services that will continue to be delivered by external providers include:

- Vegetation Management;
- Bulk Service Replacement Program;
- Bulk Streetlight LED Replacement Program;
- Traffic Control and
- Civil Works

Essential Energy will review delivery performance on an ongoing basis and identify further potential requirements for external delivery within the 2019-24 RCP.

13. Concluding comments

Essential Energy's Network Delivery Plan 2019-24 provides an overview of delivery strategies available for successful delivery of the level of investment proposed within the network works portfolio.

A systematic considered assessment has been undertaken of the total network related works portfolio delivered by Essential Energy's Network Services Division (Standard Control and Alternative Control), allowing for an all-inclusive approach to be applied across works delivery and the development of an optimal resourcing profile to safely and efficiently deliver the proposed network related works portfolio.

Essential Energy's delivery strategies provide flexibility to manage changes and can be adjusted as required to ensure the works portfolio is delivered efficiently. As an organisation on a path of reform, we will continue to implement efficiency initiatives to ensure our works delivered at the lowest cost to the consumer.

Essential Energy has considered the scope of the network works portfolio 2019-24 and is confident with the delivery plan put forward to efficiently complete the associated works.

14. Glossary

Term / Acronym	Definition
(2018-19 dollars)	$XXXXX ($2018-19), Real Dollars. This denotes the dollar terms as at 30 June 2019
2009-14 Regulatory Period	The regulatory control period commencing 1 July 2009 and ending 30 June 2014
2014-19 Regulatory Period	The regulatory control period commencing 1 July 2014 and ending 30 June 2019
2019-24 Regulatory Period	The regulatory control period commencing 1 July 2019 and ending 30 June 2024
ACS	Alternative Control Services: User-requested services
AER	Australian Energy Regulator
Augex	Augmentation Expenditure
AMP	Asset Management Plan
Capex	Capital Expenditure: Funds used to buy or upgrade physical assets
FTE	Full Time Equivalent: the paid hours worked by one full-time employee
LiDar	Light Detection and Ranging Technology: remote sensing method that uses pulsing laser light to measure distances between objects
Opex	Operating Expenditure
NER	National Electricity Rules
PoC	Power of Choice
RCP	Regulatory Control Period
Repex	Replacement Expenditure
SCS	Standard Control Services: Essential Energy's core activities when providing customers with access to electricity