# Jemena Electricity Networks (Vic) Ltd

## 2016-20 Electricity Distribution Price Review Regulatory Proposal

Attachment 7-8

JEN EDPR16 Delivery Plan

Public

30 April 2015

# Jemena Asset Management Pty Ltd

## JEN EDPR16 Delivery Plan

CY16 to CY20 Program of Works

Public

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JEN EDPR16 Delivery Plan



**Authorisation**

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# 1. GENERAL

## 1.1 PURPOSE

The purpose of this Jemena Electricity Networks (VIC) Ltd (**JEN**) Electricity Distribution Price Review 2016 to 2020 (**EDPR16**) Delivery Plan is to ensure that the proposed Program of Works (**PoW**) can be delivered as planned, without exposing JEN to resource constraints and additional costs. This Delivery Plan incorporates the following information and analysis:

- A brief summary of the PoW for the 5 year period, focusing particularly on planned increases in work requirements compared to current levels;
- An overview of the framework strategy, which is Jemena's internal processes and organisational arrangements to enable work to be managed and delivered efficiently;
- A description of our delivery framework, which is Jemena's approach for managing internal and external resources to deliver programs of work efficiently; and
- The delivery strategy and assessment for the EDPR16, which analyses whether the delivery framework is able to deliver the PoW as planned.

This Delivery Plan confirms that Jemena's Service Delivery department is able to deliver the PoW for the EDPR16.

## 1.2 SCOPE

This Delivery Plan addresses the resource requirements for JEN's PoW for the EDPR16, inclusive of Standard and Non-Standard control services.

The Delivery Plan has been developed with input from key internal and external stakeholders, including external service providers and material vendors. In addition, Jemena's Asset Investment Department considered the resourcing implications in finalising the PoW. In effect, therefore, the PoW and Delivery Plan have been developed through an iterative process. As a 'business as usual' document, it should be updated if the proposed works are revised, and particularly if the resource requirements increase in one or more years.

While the PoW includes IT related expenditures, SCADA and non-network expenditure, these works are outside the scope of this Delivery Plan.

The cost information presented in this report includes materials, labour and plant. The costs are escalated and are inclusive of overheads in real 2015 dollars ($2015).

### 1.2.1 ASSUMPTIONS

The following modelling assumptions have been adopted in preparing this Delivery Plan:

- Resource modelling has been derived from forecast volumes over the nominated period and compared to historic volumes and labour requirements;
- The labour requirements for non-routine works (project works) have been derived from a bottom up cost estimate based on individual scope of works documents;

- Resource requirements for Customer Initiated Capex are based on actual labour hours incurred by activity type in 2013 and 2014 and then applied to the same activities in the future period;
- Based on historical data, project and construction management resource requirements are estimated by applying the following percentages to total project cost and then converting the costs to hours of work, using average hourly labour rates:
  - Total direct project cost <$1M = 10%;
  - Total direct project cost >$1M=7%;
  - Total direct project cost >$5M=5%; and
  - Total direct project cost >$10M 3%.

The above assumptions are regarded as reasonable for the purpose of this Delivery Plan.

# 2. JEN PROGRAM OF WORKS

This section describes the capital and operating expenditure required to deliver JEN's PoW for the EDPR16 for each expenditure category. The information presented in this section provides historical context for the PoW.

## 2.1 PROGRAM OF WORKS

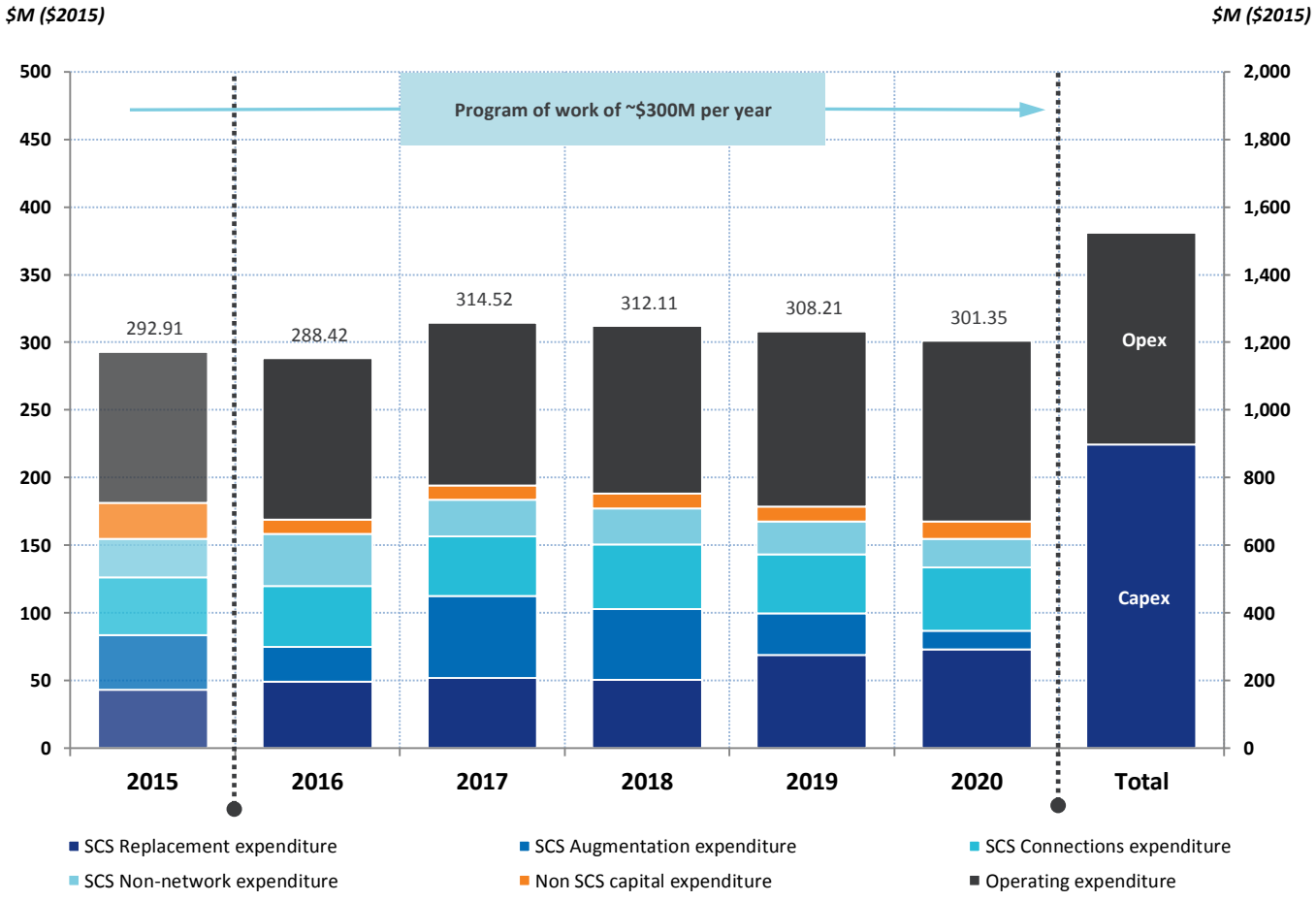
The JEN EDPR16 PoW consists of the following categories:

- Standard Control Services;
  - Replacement (**Repex**);
  - Augmentation (**Augex**);
  - Connections; and
  - Non Network (Opex and Capex);
- Non Standard Control; and
- Operating Expenditure for Standard Control Services and Non Standard Control.

Figure 2–1 shows the EDPR16 PoW, its breakdown into categories and a comparison with 2015. The capital PoW over the 5 year period is $841.2M for Standard Control Services and $82.5M for Non Standard Control[1]. As already noted, this Delivery Plan does not include non-network expenditure, and this expenditure category is not discussed further in this report.

[1] Non-standard control services refer to services provided to local councils, VicRoads, telecommunications organisations, local councils and consumers that include public lighting, facilities access and unmetered supplies. It also comprise other services requested by retailers on behalf of customers include meter installation testing, service vehicle visits, field officer visits and temporary supplies.

**Figure 2–1: EDPR16 PoW**




In general EDPR16 capital and operational PoW are higher than the previous regulatory period. The greatest contributor to the increase in expenditure is in asset replacement.

In terms of the annual profile, 2017 and 2018 are higher in comparison to the other years. A significant increase in planned augmentation activities during these two years account for this rise.

# 3. FRAMEWORK STRATEGY

## 3.1 INTRODUCTION

This section describes Jemena's framework strategy, which provides the internal processes and organisational arrangements to ensure that work is managed and delivered efficiently. This section provides the following background information:

- A brief overview of project management, including scope definition, scheduling and governance;
- A description of Jemena's functional and organisational arrangements;
- A brief explanation of how Jemena manages its internal and external resources, including:
  - Human resources;
  - Contractor management; and
  - Procurement management.

As a description of current arrangements, this section will be subject to periodic updates to reflect changes in the framework strategy.

## 3.2 PROJECT SCOPE, ESTIMATING, SCHEDULING AND GOVERNANCE

### 3.2.1 SCOPE DEFINITION

As with all long-term planning processes, the success of a project is enhanced through the systematic development of the scope during initial phases within the lifecycle of the project. Jemena's Project Management Methodology (**PMM**) applies a bottom up approach, which involves preparing Opportunity Briefs (**OB**) to be considered in the Asset Management Plan (**AMP**). Once a project is considered viable to be included in the PoW a Project Mandate will be developed.

### 3.2.2 ESTIMATING

The cost estimating framework for all projects and programs of work for JEN is set out in document (ELE PR 0020). It explains how the cost estimation framework uses the best available information to develop project estimates, depending on the nature and proposed timing of the expenditure. Documenting the project estimation process reinforces the importance of applying the framework consistently to achieve the objective of developing accurate project estimates.

### 3.2.3 SCHEDULING

For the purpose of assessing deliverability of the EDPR16 program, the capital program has been analysed to ensure that the spread of the projects across the period are optimised for efficient delivery in accordance with network requirements. As the scope of projects are refined through the early stages of the projects' lifecycle (across the portfolio of works), the delivery plan for the program will be adjusted accordingly as a rolling program of works.

### 3.2.4 PROJECT GOVERNANCE

Effective project governance is an essential component to achieving effective and efficient project and program outcomes. Within Jemena, project governance is used to promote project and program management oversight in order to ensure timely and transparent decision-making. Project governance also needs to ensure that there is alignment and consistency with Jemena's corporate policies and procedures. An overview of Jemena's approach to project governance framework, is provided in the Project Estimation Methodology document.

## 3.3 FUNCTIONAL AND ORGANISATIONAL ARRANGEMENTS

Jemena functional and organisational arrangements are focused on facilitating efficient works delivery. The overall objective is to drive continuous improvement by bringing together people who perform similar functions or execute similar processes. This approach increases collaboration across the business and enables scalability. The key components include:

- co-ordinated policies, business rules, process & systems;
- standardised processes and documentation to be utilised across all assets;
- a centralised Contracts and Procurement Team to provide more depth across the full range of Jemena assets;
- high and moderate complexity teams to better focus and specialise resources on particular projects; and
- a Portfolio and Planning and Asset Investment Department to oversee and manage the 24 month rolling program of works.

## 3.4 HUMAN RESOURCE MANAGEMENT

To ensure that Jemena adapts to changing resourcing requirements, it has adopted the following initiatives to improve the responsiveness of HR management across the business and drive cost efficiencies where possible. These include:

- the re-contracting of 'Preferred Supplier Agreements', which provides a panel of specialist employment agencies with agreed terms and conditions, briefed to Jemena's requirements (including technical, corporate culture and commercial);
- allocation of specific positions within HR to manage the identification, employment and 'on-boarding' of employees; and
- electronic lodging of resource requests, reducing the processing time and ensuring faster approval for vacancies.

## 3.5 CONTRACTOR MANAGEMENT

Jemena has implemented a Contractor Management Procedure (JEM PR 0170) which details:

- how contractors are divided into categories based on common types of services and risks;
- the roles and responsibilities of personnel involved in the supply chain process;

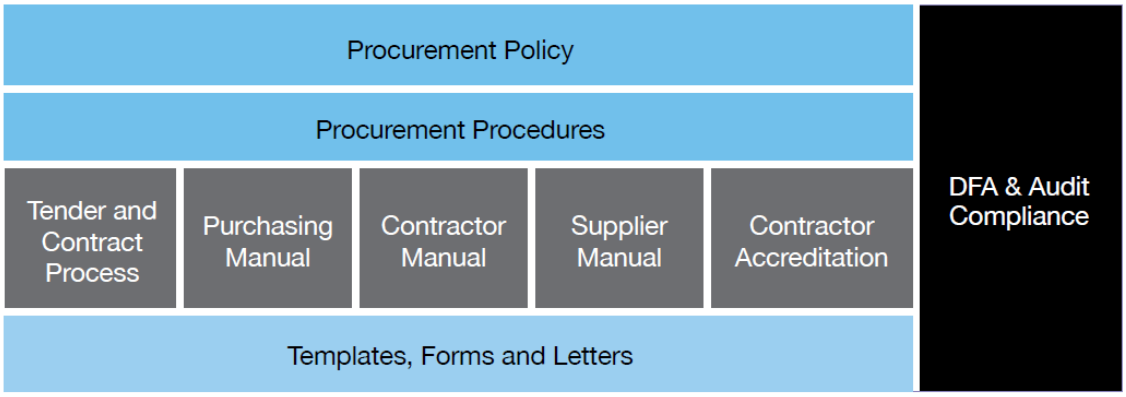
- the steps in the supply chain process, including:
  - how the Contractor Manager allocates the contractor to a particular service/risk category;
  - the importance of defining the contractor's obligations before commencing the procurement steps;
  - the procurement steps, noting items specific to the Contractor Manager, including key activities to be completed at each step of the process;
  - guidance to improve the management and monitoring of contractor performance; and
  - Audits and inspections guidance relating to contractors.

Jemena expects the new contractor management procedure to drive service delivery improvements.

## 3.6 PROCUREMENT MANAGEMENT

Procurement is structured centrally but delivered regionally to provide a focused but flexible support to the various delivery teams, including the JEN focused delivery teams. Jemena adopts a Strategic Procurement Framework, which is a proven method for managing large-scale, medium to long-term procurement activities. The structure of documentation and activities employed by Jemena's Strategic Procurement group is presented below.

**Figure 3–1: Strategic Procurement Framework**




Strategic procurement has been applied in developing, establishing and managing all strategic sourcing and procurement contracts, and other significant procurement projects that would benefit from a strategic procurement approach. This includes projects (typically high complexity, high risk purchases over $250,000) for which strategic procurement would be more beneficial than an alternative planning and purchasing methodology. The procurement team is responsible for identifying procurement opportunities across the business that drive benefits through the aggregation of demand and the standardisation of ordering and logistics processes.

Jemena's procurement team is engaged in the preparation of the PoW. Through this engagement process, the procurement team consults with key suppliers (primarily with the standard materials class suppliers and, to a lesser extent, specialist material class suppliers) to ensure suppliers understand the demand for materials and services. This process confirms the availability of the materials required to deliver the PoW. The procurement teams also provide feedback to internal stakeholders with any market intelligence that may improve the delivery of the PoW.

# 4. DELIVERY FRAMEWORK

## 4.1 OBJECTIVES

The primary objective of the Delivery Framework is to ensure that Jemena has appropriate mechanisms in place to manage internal and external resources to deliver the EDPR16 PoW efficiently. In broad terms, an effective Delivery Framework requires an efficient and robust approach to:

- optimise the PoW and works delivery;
- planning function and control;
- resourcing; and
- risk analysis, management and mitigation.

Each of these matters is discussed in turn in the following sections.

## 4.2 OPTIMISATION PROCESS

Projects and programs of work are targeted for completion to deliver the best outcomes for the business and its customers, for example:

- replacement expenditure for critical assets is timed efficiently to manage the risk of asset failure;
- augmentation projects are typically delivered prior to critical summer loading period in order to reduce the risk of unserved energy; and
- related works are combined to maximise the opportunity for productive efficiency.

In broad terms, therefore, Jemena's PoW and Delivery Strategy must be optimised to ensure that an appropriate balance is struck between the needs of the network and its customers on the one hand, and the costs of delivery. The optimisation process therefore takes into account the following key factors:

- Alignment of projects at the same location and with other distribution or transmission business requirements;
- Optimise seasonal variations in project delivery, for example by identifying those projects that must be commissioned prior to summer;
- Project lead time, including:
  - The network reliability implications for projects with long lead times; and
  - Timely identification and acquisition of land and easement requirements.

## 4.3 PLANNING FUNCTION AND CONTROL

Jemena's portfolio and planning model is facilitated by a centralised program planning function. This team optimises activity scheduling, resource planning, and material demand planning. Jemena uses Microsoft management tools to support the program management function in-house. Under Jemena's Project

Management Methodology, Jemena adopts a continuous improvement approach to ensuring best practice project planning and controls to underpin the management of the PoW.

## 4.4 EFFICIENT RESOURCING

Ensuring resourcing is efficient is a key component of the Delivery Framework. This section discusses the following aspects of the resourcing approach for EDPR16:

- internal and external resourcing;
- competitive tendering;
- materials procurement; and
- category management.

Each of these elements is discussed briefly in turn.

### 4.4.1 INTERNAL AND EXTERNAL RESOURCING

Jemena assigns internal resources to targeted augmentation and replacement works coupled with routine works to ensure the efficiency and balance of the internal resourcing capability and capacity. Works not allocated internally are issued to key contractors, panels and tenders. This model enables Jemena to efficiently allocate internal resources to the program requirements and utilise external resourcing where balancing of the program of works is required.

### 4.4.2 COMPETITIVE TENDERING

Jemena employs competitive tendering for the delivery of the major components of significant zone substation or distribution projects. The competitive tendering process achieves optimal project cost control by engaging the market to ensure the most commercially and technically acceptable solution is implemented.

Jemena also establishes competitively tendered panels of contractors for the delivery of defined scopes of work.

### 4.4.3 MATERIALS PROCUREMENT

Jemena will continue with existing material supply arrangements, which have successfully supported the delivery of previous programs, which includes long term contracts to source high volume materials from a number of suppliers (including both local and international manufacturers). Jemena also explores opportunities to seek cost efficiencies by working with Select Solutions, ZNX and Zinfra on the material purchases.

### 4.4.4 CATEGORY MANAGEMENT

The Category Management group supports the business in the development and implementation of contracts and service level agreements.

Following standardisation of equipment specifications and tendering, period contracts have now been established for major plant items such as cables (underground and overhead), transformers and kiosks, electrical conduits and cover slabs, protective clothing, electricity meters, RM6 switchgear, switchboards, insulators, gas switches and high voltage fuses. The establishment of the period contracts provides confidence that the increased volume of materials for EDPR16 can be delivered at an efficient cost.

## 4.5 RISK ANALYSIS, MANAGEMENT AND MITIGATION

The effective management of risk is an important aspect of the Delivery Strategy. Jemena's Risk Management Policy establishes a best practice approach to risk management, in accordance with Australian standards. The policy recognises that the complete elimination of risks is neither practical nor gives the best outcome to the business. However, all credible risks should be identified, evaluated and appropriately managed.

Jemena's policy and procedures ensures that a consistent approach to risk management is adopted through standardised procedures. These procedures are utilised for conducting risk assessments across all Jemena's functional groups. It provides asset management and delivery personnel with the tools to balance the right mixture of risk aversion and risk taking to maximise long term value creation and realisation. In relation to the PoW, risk is managed through all stages of a project, for example:

- Program risks are assessed by asset management and delivery personnel through workshops using risk criteria tables.
- Risk Action Plans are developed by the nominated risk owner to plan, monitor and report on the implementation of identified treatment actions.
- Risk management is applied to contractor management and assessment.
- Field based activities completed by contractors are monitored through targeted, risk-based audits.

A delivery risk library has been developed to ensure that risks are recorded communicated across the business. The risk library provides a further discipline for the effective management of risk. The key risks in relation to the PoW for EDPR16 are categorised as follows:

- budget;
- time;
- scope;
- health, safety and environment;
- network and statutory compliance; and
- brand, reputation and stakeholders.

The following processes facilitate the development of risk mitigation strategies:

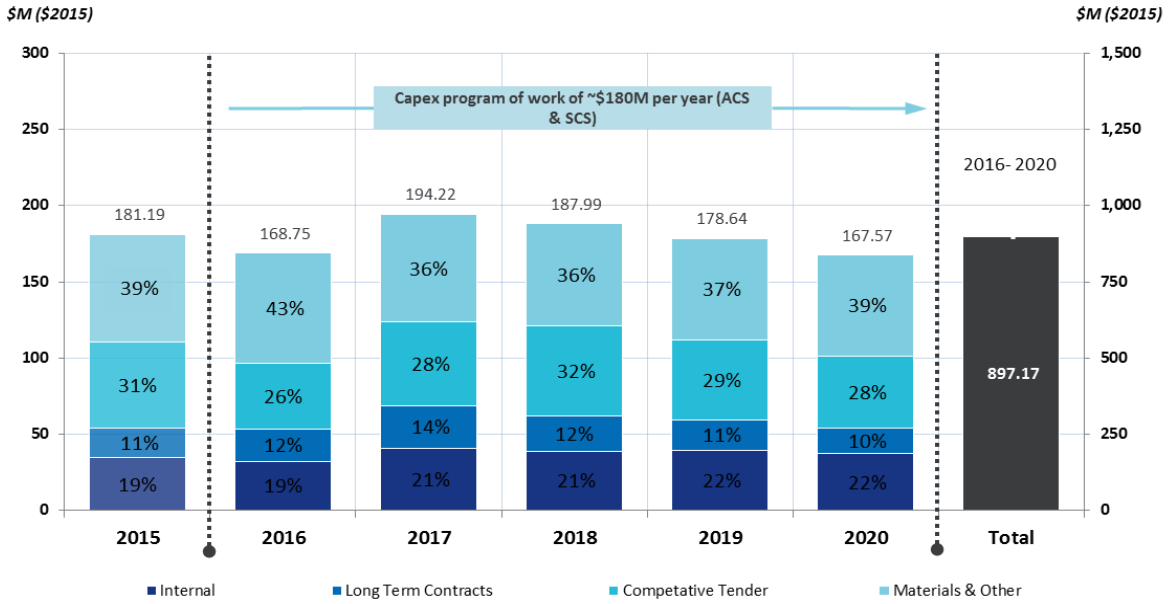
- PoW governance forum;
- program delivery reporting and meetings;
- project forecasting and scheduling meetings; and
- gate process status reporting.

The above processes provide additional confidence that the Delivery Framework provides the appropriate mechanisms to manage internal and external resources to deliver the EDPR16 PoW efficiently. The next section provides a specific Delivery Strategy and Assessment for the EDPR16 PoW.

# 5. DELIVERY STRATEGY AND ASSESSMENT

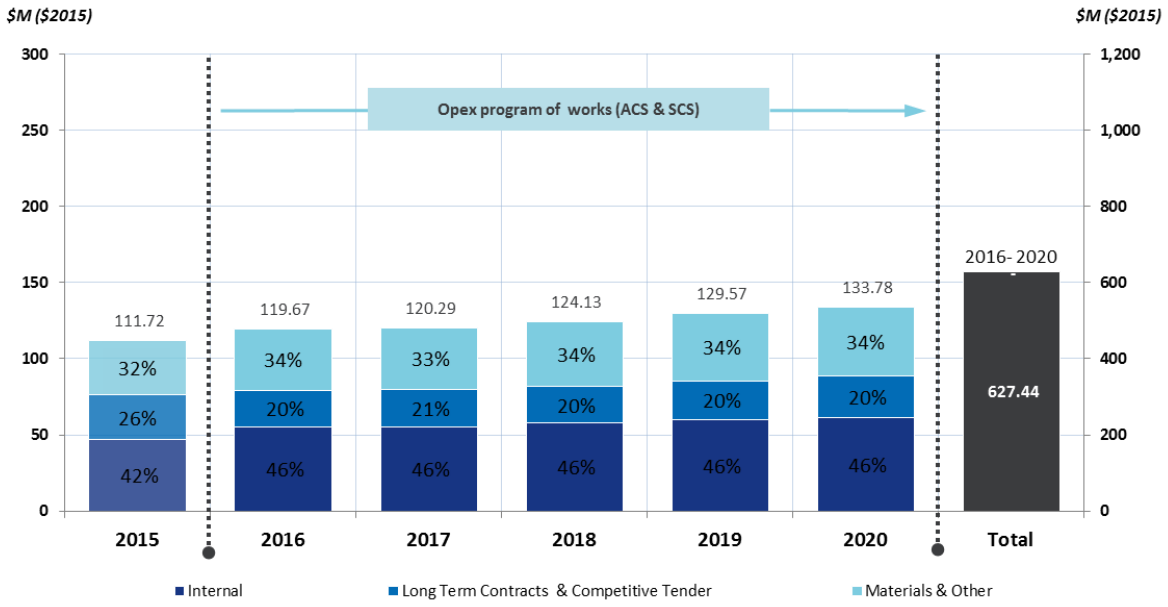
This section describes the methodologies and agents for delivery of the PoW. The figure below shows the breakdown of the capital expenditure by materials, competitive tender, long term contracts and internal resources.

**Figure 5–1: Annual JEN Capital Expenditure**




(1) All Materials procured by JEN are competitively tendered in line with Jemena's Procurement policy.
(2) Competitive Tender relates to JEN's field construction undertakings

**Figure 5–2: Annual JEN Opex Expenditure**




(1) All Materials procured by JEN are competitively tendered in line with Jemena's Procurement policy.
(2) Competitive Tender relates to JEN's field construction undertakings

Jemena will allocate complex augmentation and replacement works for the distribution and sub transmission network to overhead and underground and zone substation construction teams, with support from internal asset management and engineering design services, to ensure efficacy of resourcing and minimisation of risk to the network. The detailed knowledge and experience of Jemena's internal resources in relation to work practices and network configuration ensures a high level of control, safety and efficiency. The expertise of the internal resources reduces risk and increases the overall likelihood of project success.

The current portfolio of internal and external resources will continue to underpin the EDPR16 Delivery Plan for the CY16-CY20 program. Historically this approach has successfully provided an optimal mix of resources with the capability and capacity to deliver. Jemena has engaged in preliminary commercial discussions with its contracting base and has developed a delivery strategy to provide capacity to meet the increased work volume, relative to the current regulatory period. Although preliminary, these discussions indicate that the PoW for the EDPR16 can be delivered without raising significant resource constraints and cost consequences.

Jemena has assessed between 60 to 80 per cent of the work (depending on the particular calendar year) as low in complexity, largely routine, high volume activities that are best delivered through strategic contractors and preferred vendor arrangements. Jemena's procurement team have undertaken a detailed process to determine a panel of reliable contractors and preferred vendors that specialise in this type of work and have the appropriately sized workforce to deliver these high volume, low complexity programs and can therefore deliver these services at a lower average cost to JEN's customers than JEN's own workforce. Internal resources associated to project management of Growth Capital Development have remained relatively consistent over the program period.

Outsourcing arrangements also provide the required flexibility to align delivery resources with the variable volumes in the activity base. Contract arrangements with exclusive commercially negotiated unit rates and agreed with our service providers to mitigate against the risk of paying premiums for resources at short notice when demand for resources are at their peak.

Contractors complement the internal workforce by completing high-volume routine replacement works, e.g. service replacement, public lighting, pole to pit, cross arm replacement. Jemena contractors are specifically geared up to effectively and efficiently co-ordinate and manage the replacement of this high volume work. Jemena utilises external long-term strategic contractors as the primary source, supported by internal project management resources as part of its delivery strategy. This approach delivers the most efficient ratio of internal to external resources and ensures our services are delivered to our customers at the lowest average sustainable cost.

The objectives of this approach are to:

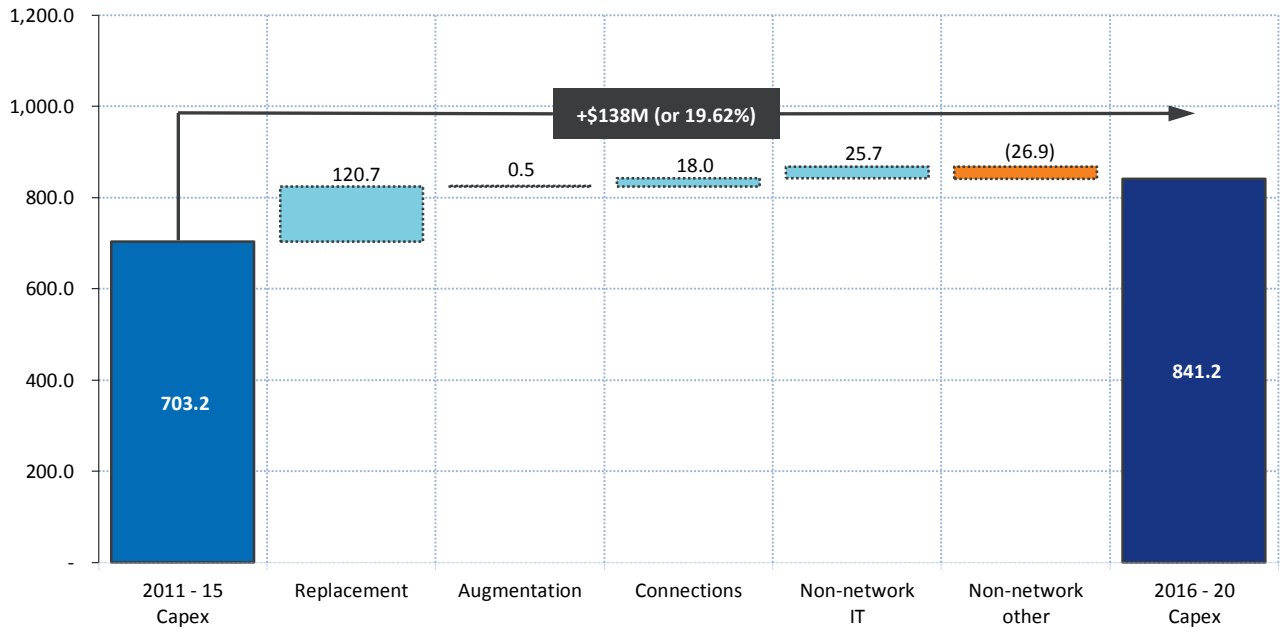
- improve the flexibility and responsiveness of JEN's delivery structure to changes in work volumes;
- ensure external delivery channels have sufficient information on likely work volumes and mixes to encourage investment in capability and capacity (labour and fleet); and
- maintain internal control over high risk delivery areas.

The assessment of each of the resource types required to meet the program has been carried out during the estimation phase and matched to what is expected to be available from within Jemena Service Delivery and key contractors available within the market.

## 5.1 STRATEGIES AROUND ADDRESSING STEP UP IN THE PROGRAM VOLUME

This section compares the EDPR16 PoW against the PoW from previous regulatory period. Comparison is on the individual work categories.

**Figure 5–3: EDPR16 comparison against previous regulatory period ($m, $2015)**




The expenditure increment between EDPR16 against the previous regulatory period is individually assessed on each of the different work groups.

- **Replacement** – 65% routine and 35% non-routine nature. Routine replacements are driven by condition based assessment related to asset age and condition. The increase in routine works is progressive over the five year period therefore will allow gradual increment of resources as needed. Non-routine projects are mainly major projects, determined via a strategy and risk assessment. Service Delivery confirms that with a combination of JEN's existing workforce and the arrangements in place to utilise additional resources via our panel of preferred service providers and contractors, the forecast increase in replacement programs can be delivered.
- **Augmentation** – The incremental augmentation work is predominantly (>90%) non routine capex projects. A mix of internal and external resource (via our panel of preferred suppliers and some 'bid and win'/market tender work will deliver the total forecast augmentation work. The resourcing mix is determined depending on the complexity of work, strategy and risk assessment.
- **Connections** – The increment involves mainly routine works –in particular, pole to pit and new service connections. These will be delivered through the long term external service provider contracts. The remaining non routine connection works are a mix of mostly low and some high complexity projects. They will be predominantly internally resourced and overflow to external service contractors where necessary. Service Delivery confirms that existing workforce and procurement arrangements will ensure delivery of the total forecast connections work.

JEN experienced a similar step up in program expenditure from regulatory period EDPR11 as in EDPR16. Jemena has been able to historically manage delivery of a step up in program delivery through effectively utilizing our robust resourcing and procurement strategies.

## 5.2 RESOURCE ASSESSMENT

This section provides an assessment of resource demand against the forecast capital program, which identifies the available internal resources and where overflow resources will be utilised.

The assessment of the resource requirement to deliver the Program of Work for CY2016 to CY2020 was undertaken using data derived from the project estimation process.

For specific projects, an assessment of the proposed scope and delivery requirements were used to determine the level, make up and timing of the resource requirements by skill type. For projects of a routine nature, the assessment was made on an overall average job requirements basis, where resources had been determined on a job type basis.

The overall resource requirements were collated for the duration of the PoW on a specific skill type basis for both the specific projects and the routine program components. During the PoW development process, some opportunity was taken to allow for levelling of labour resource demand, however, more detailed management of resource timing would be possible during the PoW delivery.

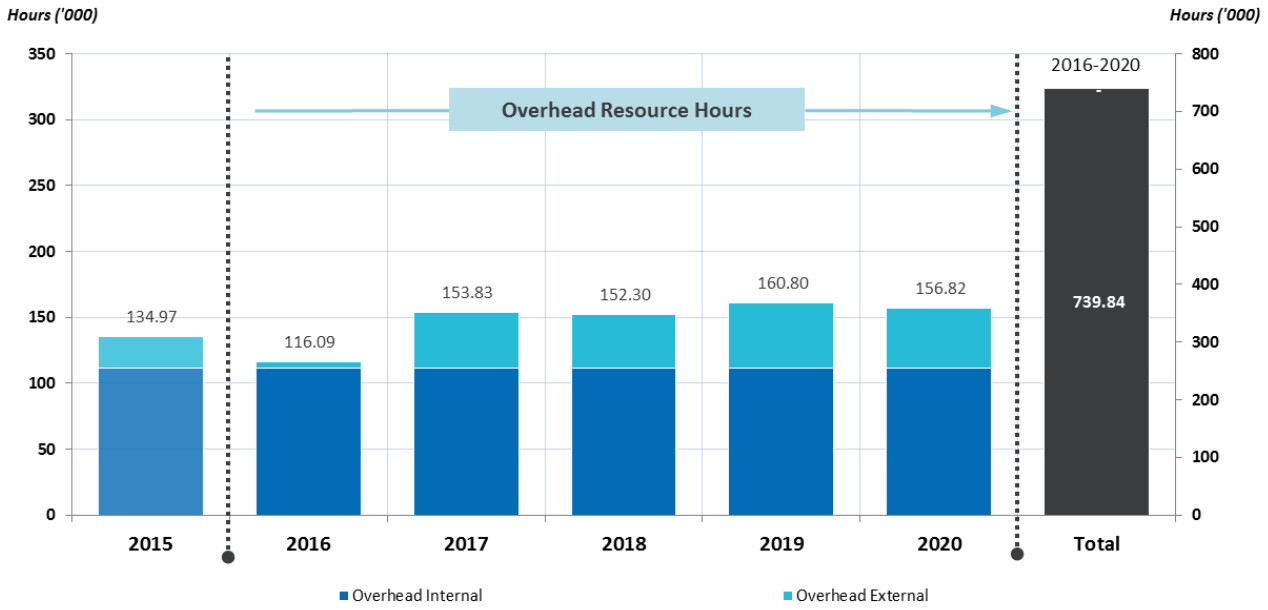
### 5.2.1 KEY RESOURCES

The resources were assessed by requirement for various skill types; namely overhead line construction, underground cable construction, zone substation tester and zone substation fitter are illustrated in the following section. For each area, any required increase in external resourcing has been identified. As explained below, for each major work activity, the additional external resourcing is regarded as manageable within existing contractual arrangements with service providers. The resourcing profile is also regarded as appropriate, by ensuring that internal resourcing is appropriately utilised and the demand on external providers is unlikely to produce an inefficient peak in resource costs.

### 5.2.2 OVERHEAD LINE CONSTRUCTION

Overhead line construction consists of electrical line workers including live-line workers and LV network operators involved in all aspects of overhead construction.

**Figure 5–4: Overhead Line Construction Demand**

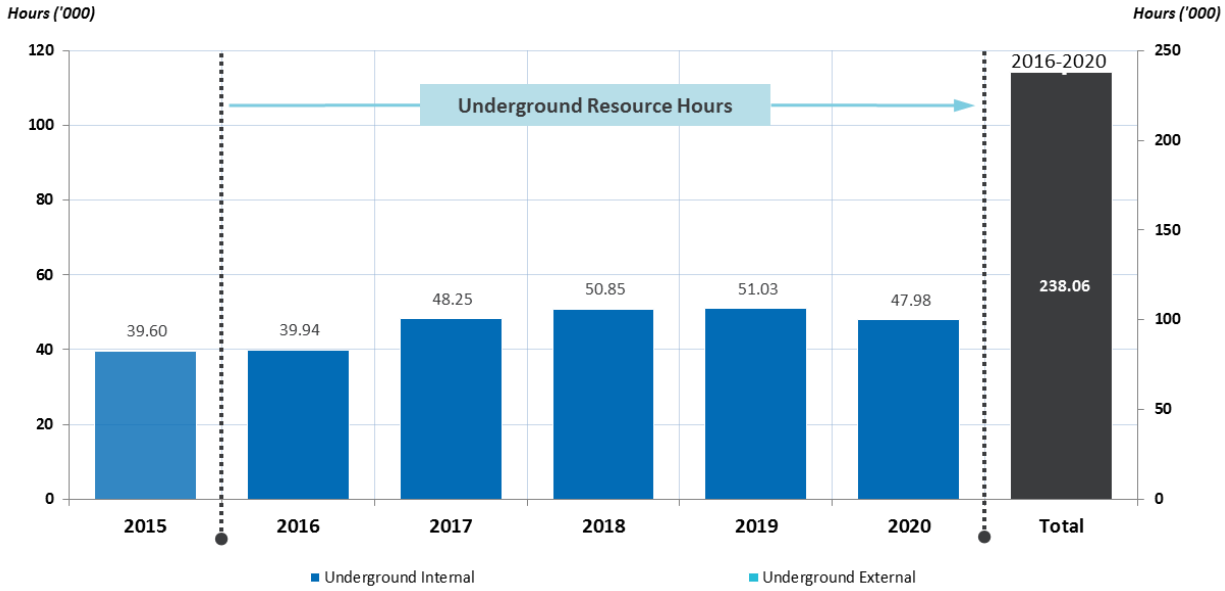



All demand above the available internal resource will be filled by utilisation of contractors on long term panel agreements. This arrangement enables base workload to be performed by permanent staff, supplemented by fixed term contractors for peak workload that facilitate re-scaling of resource when necessary hence improve resource utilisation and flexibility to meet additional work demand.

#### 5.2.2.1 Underground Cable Construction

Underground cable construction consists of cable jointers and distribution fitters required for underground cable installation and termination and construction of indoor and kiosk distribution substations.

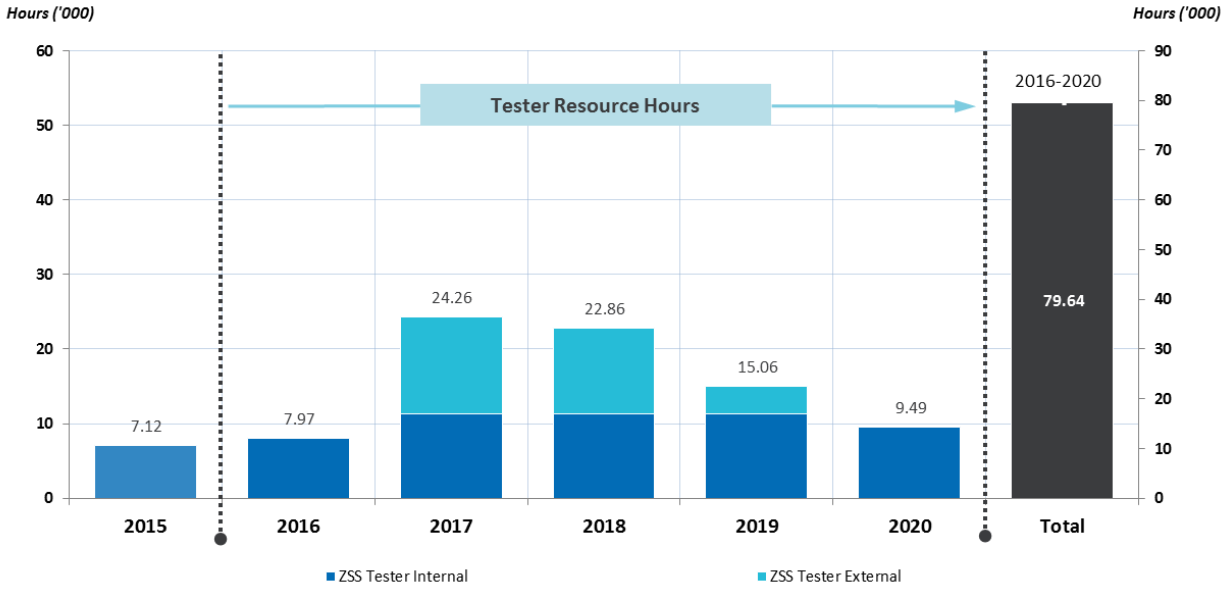
**Figure 5–5: Underground Construction Demand**




### 5.2.2.2 Zone Substation Testers

Zone substation testers consist of zone substation protection and control testers and HV cable testers. The resource demand for zone substation testers is much lower in comparison to the overhead line and underground cable constructions.

**Figure 5–6: Zone Substation Testers Demand**



### 5.2.2.3 Zone Substation Fitters

Zone substation fitters consist of zone substation electromechanical fitters and electricians involved in construction of zone substations.

**Figure 5–7: Zone Substation Fitters Demand**