Prescribed Network Capital Investment Process

Summary

This process document describes the capital investment process used by TransGrid to identify, deliver, justify and govern investments in assets that deliver prescribed transmission services.

Document Control

Revision no:	3	**HP TRIM No:**	D2017/05584	**Approval/ Reviewed date:**	30 June 2020
Business process:	Manage Build Network Assets			**Document type:**	Corporate-wide procedure
Process owner:	Head of Asset Management				
Author:	Charles Kurniawan, Asset Works Program Strategy Manager Evan Lamplough, Substation Asset Manager Robert Alcaro, Transmission Lines & Cables Asset Manager				
Reviewers:	Andrew Kingsmill, Head of Network Planning Andrew McAlpine, Asset Performance & Systems Manager Boon Thiow, Head of Accounting and Compliance Brian Salter, Executive Manager/Legal, Governance, and Risk Conor Maguire, Head of Financial Planning & Analysis Debashis Dutta, Asset Analytics & Insights Manager Jeff Forrest, Head of Finance and Investor Relations Jeremy Roberts, Head of Project Development Kersha Levi, Head of Delivery Portfolio Planning Mark Britton, Head of Infrastructure Delivery Michael Gatt, Executive Manager/Works Delivery Stephanie McDougall, Head of Regulation Vincent Ong, Head Of Portfolio Management Office Yousseph Ters, Development Manager				
Endorser	Lance Wee, Head of Asset Management				
Approver:	Sean McGoldrick, Acting Executive Manager/ Network Planning & Operations				

Contents

1. Purpose

This document sets out TransGrid's end to end prescribed network capital investment process and the decision criteria and methodologies to justify and govern prescribed transmission services. The process covers the identification of prescribed investment needs and opportunities through to the issue of the Project Approval Document (PAD) and the completion of the Project Close Out Report (COR).

This document addresses the following key areas:

- How TransGrid establishes what is of value to the business when making decisions to invest in prescribed assets.
- Process for justifying asset investments and optimising the prescribed investment portfolio.
- Assessment criteria applicable to those decisions.
- How the relevant evidence is collected and analysed.
- Requirements for:
  - identification and quantification of expected business benefits (risk reductions, market benefits, savings and/or other revenues) from investments to address network needs and opportunities.
  - identification of both network and non-network options for addressing the needs and opportunities.
  - the Regulatory Investment Test for Transmission (RIT-T) in relation to projects under the National Electricity Rules (NER).
  - the **Project Commencement** and **Project Approval** Decision Gates (DG) within the process.
  - the Project Close Out report including Asset Acceptance.
- Accountabilities and responsibilities of staff in relation to the above tasks.

This investment process enables TransGrid to:

- Provide an audit trail of documents and artefacts to support decisions in compliance with the company's statutory, regulatory and shareholder obligations in respect of the network capital investment.
- Ensure prudent investment planning and efficient delivery of investment projects.
- Adhere strictly to the core investment principles of "separation of duties" and appropriate "delegation of responsibilities".

The process supports the Asset Management Policy and is consistent with:

- The Network Asset Risk Assessment Methodology (RAM), allowing the Board and management to better understand how proposed capital portfolios impact key corporate risk categories and thereby providing the ability to prioritise the investment portfolio to optimise business value.
- The Asset Management System, strengthening the linkage between asset condition assessments and the investment proposals.
- The Financial Authorities Procedure.
- The Safety in Design procedure, aimed at elimination and mitigation of safety risks across the asset lifecycle, and inclusion of safety and design considerations in the project governance documents.

2. Scope

The scope of this process covers all network capital investments to deliver prescribed transmission services including:

> Ex-ante network-related investments comprising all transmission line, underground cable, substations, primary and secondary (including Operational Technology) systems, communication systems.

> Investment related to contingent projects.

The following is out of scope of this document:

> Information technology (IT) investments comprising corporate and 'Support the Business IT' investments and fleet investment.

> Property facilities.

> Non-Prescribed investments.

3. Definitions

Key Terms and Definition relating procedure

Term	Definition
AEMC	Australian Energy Market Commission.
AEMO	Australian Energy Market Operator.
AER	Australian Energy Regulator.
ALARP	As Low As Reasonably Practicable
Augmentation	Works to enlarge an asset or increase its performance capability.
Asset Analytics & Investment Tool (AAIT)	A modelling tool that profiles the probability of failure and consequence for individual assets over time by assessing the associated asset risks. Based on technical, operational, regulatory and financial constraints, the tool optimises capital investment for the portfolio of augmentation and replacement projects against strategic objectives and cost-benefit evaluation.
Asset Acceptance	Acceptance of the Asset by the Asset Managers upon completion of the project. All the asset information will need to be provided to enable the Asset Manager to make decisions on the operation and maintenance of the asset.
Benefit	A reduction in risk, a reduction in costs or market benefit associated with providing prescribed transmission services to provide benefit to the consumers.
Concept Owner	For network augmentation/NCIPAP needs and/or opportunities, Network Planning is the Concept Owner until the project has been finalised. At that point, the commissioned asset becomes the responsibility of Asset Management. For all replacement needs and/or opportunities, an Asset Manager is the Concept Owner.
Contingent Projects	Significant network augmentation projects that may be reasonably required to be undertaken in order to achieve the capex objectives. However, unlike ex-ante projects, the need for the project and the associated costs are not sufficiently certain and dependant on trigger event.
Decision Gate (DG)	A decision point in the investment decision-making governance process. The corporate governance framework requires appropriate approvals, properly documented and supported, to be given at these gates prior to moving to the next stage of the project.

Term	Definition
Ex-ante Capex Allowance	The total forecast capital expenditure as determined by the AER in the revenue determination for TransGrid.
Identified Need and/or Opportunity	The basis on which TransGrid makes an asset investment.
Investment	A project or program that address an identified need and/or opportunity.
Internal Rate of Return	The expected compound annual rate of return on any investment based on the stipulated benefits in the business case.
Justification	A decision to proceed with an investment on the basis that it met the relevant decision criteria.
NCIPAP	Network Capability Incentive Parameter Action Plan.
NEM	National Electricity Market.
NER	National Electricity Rules.
Network	TransGrid substations, transmission lines, underground cables, protection, metering, communications and control assets that form the high voltage transmission system.
Net Present Value (NPV)	A methodology for deciding whether to make an investment. NPV analysis discounts the expected benefits and costs of a project for time value of money. Subject to any capital and non-capital constraints, where the discounted benefits of a project exceed the discounted costs, the project should in theory proceed.
Network Constraint	A technical limitation on the transmission network that cannot be exceeded without the risk of unacceptable consequences.
Network-related Investments	All transmission line, underground cable, primary and secondary (including Operational Technology) systems and communication systems, property and facilities investments.
Non-Network Investments	Investments to relieve network constraints and/or meet reliability prescribed service obligations that do not necessarily involve the construction of transmission assets. These can include generation and/or demand management investments.
Optimisation	The process of maximising the business value generated by the asset investment portfolio. This can involve deferring or bringing projects or programs forward in time, terminating, re-scoping, combining or separating them.
Optimised Investment List (OIL)	An optimised list of projects and programs (Repex/Augex/NCIPAP) based on asset risk, alignment of projects with TransGrid's strategic objectives, and benefit/cost. Approval of Optimised Investment List (OIL) by the Board will constitute DG1 Approval and set the overall annual budget for the capital portfolio.
PDGS	Project Document Governance System. It is a document control system used to track governance documents associated with a need or investment.
PPM	Project and Portfolio Management Solution. PPM is a software application used to manage and monitor the progress of the projects.
Portfolio	A set of all prescribed investment projects and programs.
Program	A set of projects designed to address a common need and/or opportunity.
Project	A proposed investment designed to address a need and/or opportunity.
Project Approved Cost	The approved cost for a project will be set at DG2. The Project Approved Cost is to be based on all costs associated with implementing the proposed project including contract, plant and equipment, project management, administration, design, site

Term	Definition
	supervision, land and easements, development and approval fees. This cost is estimated at a P50 level of accuracy.
Total Project Funding	Total approved project funding including management contingency (P90) i.e. Project Approved Cost + Management Contingency (Refer the Appendix B).
Management Contingency	The difference between the Total Project Funding (P90 funding) and Project Approved Cost (P50 funding) controlled and managed by the Head of Asset Management (Refer to Appendix B).
Asset In - Service Date	A date where new assets are place into service/energised.
Need Date	A required by date where investments will need to be delivered.
Commissioning period	The process of energising equipment.
RIT-T	Regulatory Investment Test-Transmission. An economic test promulgated by the AER in accordance with clause 5.16 of the NER.
Latent conditions	Latent conditions are physical conditions in and around the site that could not be identified by reasonable observations or investigations of the site or from the site information provided in the tender documentations at the time of the preparation of the tender.

4. Procedure

The asset lifecycle comprises the eight stages shown in Figure 1 and Figure 2

The investment decision-making component of the lifecycle comprises two milestones for ex-ante network investments and three milestones for contingent projects referred to as Decision Gates (DGs):

> **Pre-DG1** – Funding approval to commence RIT-T for contingent projects.
> **DG1** – Project Commencement / Optimised Investment List (OIL).
> **DG2** – Project Approval / Project Approval Document (PAD).

The first two lifecycle stages are within the scope of this Procedure. The key roles are described in section 8.

Figure 1 - Asset Lifecycle Phases & Stages (ex-ante Network Projects)

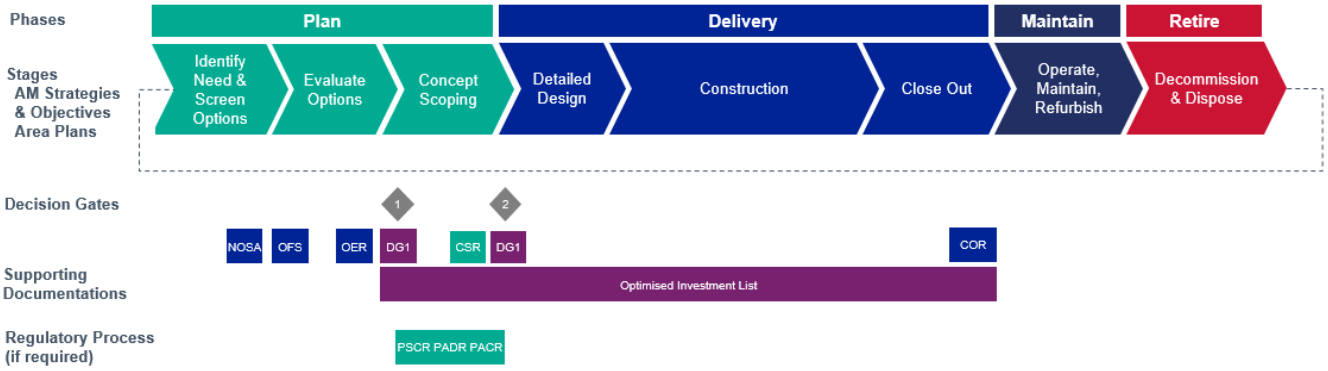
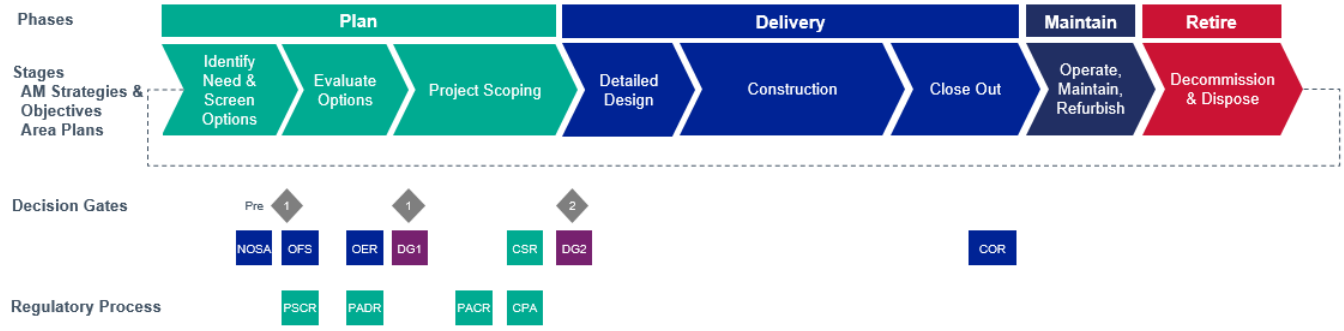


Figure 2 - Asset Lifecycle Phases & Stages (Contingent Projects)



5. Objective

The objective of this process is to ensure that TransGrid's prescribed capital investment activities deliver value to all its stakeholders by delivering against TransGrid's strategic themes as articulated in the TransGrid's Business Plan.

The investment process adheres to the Asset Management Policy and Asset Management Objectives as defined in the Network Asset Strategy which is in full alignment to TransGrid's business plan. The relevant strategic themes and asset management objectives are:

Business Plan Theme	Asset Management Objective
Deliver safe, reliable power	> Maintain Network Safety Risk > Maintain Network Reliability
Create an efficient high performance business	> Manage assets efficiently without compromising security holder and consumer value
Invest in transmission to support the energy transition	> Support sustainable growth of the asset base by providing the right assets in the right place > Improve capability to support future energy system development

The underlying principles and drivers that support achieving these objectives ensure that:

> Processes are aligned with the principles and requirements of the Asset Management Policy and the corporate financial guidance.

> Investments add value to consumers in line with the National Electricity Objective developed by the AEMC.

> The evaluation of investment decisions is based on sound economic benefits and involves quantitative analysis supported by quality asset information.

> The process of investment decision making is transparent in terms of the evidence and methodology used to arrive at the final assessments.

6. Assessment Criteria

TransGrid invests in the prescribed network capital to meet its obligation under relevant NER, Network Safety, and other obligations for the benefit of consumers as per the National Electricity Objectives (NEO).

All Investments are assessed based on the following three contexts:

6.1 Financial Evaluation

TransGrid uses two key metrics to evaluate investment which are:

- Net Present Value (NPV).
- Internal Rate of Return (IRR).

The metrics are used to support all project and program justifications as well as the portfolio prioritisation. Project and program justifications first occur as part of the Evaluate Options stage of the asset lifecycle.

The NPV is the present value of the cashflows at the required rate of return (the discount rate) of a project compared to the initial investment. If the NPV is positive, the project is beneficial to the consumer, the larger the NPV, the larger the benefits.

In the case of investments driven by network risk reduction, the benefits will represent the dollar value of the net risk reduction afforded by the investment solution. The net risk reduction is the difference between the inherent (pre-investment) and residual (post-investment) risk costs. A positive NPV is the basis for a decision to fund such an investment solution.

There may be a limited number of compliance related or safety driven investments that are mandatory and will be included in the portfolio of investments to proceed even if the option financials return negative NPVs. These circumstances are discussed in more detail in sections 6.2 and 6.3. In such a case, the investment option with the least negative NPV will be preferred.

The Internal Rate of Return (IRR) complements the NPV metric for the purposes of prioritising the investment portfolio. Using NPV's alone as the basis for prioritising investments may result in relatively small cost, but relatively high-benefit investments being ignored as a result of capital constraints. The IRR provides an additional measure of the relative merit of an investment and is calculated for all investment options.

The prioritisation of the investment portfolio considers both quantitative and qualitative assessment of individual projects.

6.2 Compliance obligations

TransGrid's key compliance and corporate obligations are derived from:

> Safety requirements.

> Licence condition.

> The National Electricity Rules (NER) and other relevant legislation.

Projects that contribute directly to specific licence or compliance requirements such as NER obligations or IPART reliability standards are mandatory and would be considered for investment irrespective of their financial returns. In these circumstances, the solution option with the smallest negative NPV will be preferred.

6.3 Network Safety Requirements

The Risk Appetite Statement approved by the Board stipulates that safety risks are managed As Low As Reasonably Practicable (ALARP). This is consistent with the requirements of AS5577 Electricity Network Safety Management System. The core requirements of TransGrid's ENSMS are:

> Under the relevant safety acts risks whether network or work practice initiated, that may result in injury to people must have controls in place to reduce those risks as far as reasonably practicable. This involves removing hazards or implementing all reasonable controls with a bias towards safety and only not implementing when the cost is disproportionate.

> AS5577 requires that across the assets lifecycle network safety risks managed by:

- Elimination of hazards so far as reasonably practicable.
- Where a hazard cannot be eliminated, the risk presented by it shall be reduced ALARP by implementation of all appropriate mitigations unless disproportionate to do so.

The method to demonstrate meeting of these requirements is not specified in the regulations or standards. TransGrid, based on international precedent, has developed objective processes and decision criteria to allow economic evaluation that can demonstrate consideration of practical alternatives when assessing investments. This process utilises disproportionality factors on the calculated risk costs when assessing options.

A project can be justified under ALARP if the investment cost is not disproportionate to the benefit i.e. it does not exceed the calculated disproportionate benefits. For details on the process and decision criteria please refer to the Network Risk Assessment Methodology.

In assessing ALARP, it is essential that the business is able to demonstrate that it has properly identified and considered all relevant feasible options. This includes undertaking reasonable investigations to establish the expected costs and benefits as well as defining what would be the "largest reasonably acceptable incremental cost".

Projects that meet ALARP requirements are mandatory, even though they may have negative NPVs. In these circumstances, the options with the smallest negative NPVs will be preferred.

7. Economic Business Cases

The purpose of an economic business case is to assess the wider, social justification for an investment rather than from the perspective of the business alone. Such cases, depending on the scope of the assessment, typically exclude transfers but include externalities. "Transfers" are social reallocations of wealth that do not impact the productive value of the resources being used. Examples are taxes and financing costs. "Externalities" are costs and/or benefits imposed on other parties as the result of the business making the investment. An example is where a business produces goods with an environmental impact that aren't required to be remediated and so this cost is borne by society more broadly. Economic business cases may also adjust the costs and benefits used to address market distortions in order to understand the "true" underlying value of the resources.

The scope of an economic assessment may be as broad as the entire economy or confined to the impact of the investment on a market for a particular product or service. The Regulatory Investment Test-Transmission (RIT-T) states that, *National Electricity Rules (NER) 5.16* is to be applied to prescribed capital transmission service investments of a certain nature and size as an example of the latter.

An economic business case is to be used when considering whether the investment is justified in forming part of the capital expenditure program that the *Australian Energy Regulator (AER)* takes into consideration when determining TransGrid's prescribed revenue allowance at each regulatory control period. It is also to be used for RIT-T consultations.

The prescribed investment NPV model generates NPVs and IRRs on an economic basis. RIT-T assessments are also undertaken on an economic basis in accordance with AER's *Regulatory Investment Test for Transmission Application Guidelines*[1].

[1] Available at http://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/regulatory-investment-test-for-transmission-rit-t-and-application-guidelines-2010.

8. Documentation

An appropriate documentation is required to support each investment decision in Figure 1 and Figure 2. The types of documentation are described in Table 1.

Table 1 – Documentation Types

Document	Function
Need and Options Screening Assessment (NOSA)	> Sets out why a particular asset-related investment is being proposed, and briefly summarises potential options to address the need and/or opportunity. > Includes an assessment of the risks that give rise to the need and/or savings and other benefits that give rise to the opportunity. > Provides an indicative timing (if available) to address the need or capture the opportunity. Identifies options which require further study and those which can be screened out at that point. > Requests formally the Option Feasibility Studies (OFS) be undertaken. > Request when the timing of OFS will need to be completed.
Option Feasibility Study (OFS)	> Responds to a NOSA with a desktop review to determine likely feasibility and high level cost (±25% accuracy[2]) for nominated options. > The requirement for one or more OFSs is documented in the NOSA. > Each OFS must identify related needs and any potential efficiencies for each option in that need (e.g. whether the works can be bundled or undertaken at the same time)
Options Evaluation Report (OER)	> Summarises the need and/or opportunity, the options available to address that need and/or opportunity and the technical and commercial evaluation of those options, and need date. In doing so, all practical options must be considered, such as increased maintenance, asset replacement and/or refurbishment, non-network (where applicable). > Includes any clarification on scoping activities for the preferred option. > Cost, discount rate, and time sensitivity analysis is required to be conducted during the OER stage to identify investment justification threshold.
Optimised Investment List (OIL)	> The Optimised Investment List (OIL) represents an optimised two year snapshot of the capex portfolio. > The OIL contains projects at different stages of the project lifecycle with differing uncertainties. The OIL sets the overall capital outturn for the relevant financial years. > Optimisation is undertaken to deliver the highest benefit at the optimal cost based on funding constraint, risks and opportunities.

[2] Does not apply to contingent projects, accuracy will be based on the information available.

Document	Function
	> The OIL is submitted to the Investment Review Committee and subsequently to the Board for approval on an annual basis. > Approval of the OIL (as noted in Board Meeting Minutes) will act as: • Project Commencement Approval (DG1) for those projects identified as yet to commence. • Portfolio annual budget approval. > Projects with a total estimated value exceeding $15 million will require an individual Project Commencement (DG1) paper to be included as an attachment to the OIL.
Pre-Decision Gate 1**(Pre-DG1)**	> Funding approval from the Board to commence RIT-T on the contingent projects.
Decision Gate 1 **(DG1)**	> Costs based on OFS. > DG1 provides approval for scoping/development of the projects. > Emerging issues/projects related to current network raised outside of the annual OIL would require separate DG1 approval as per the Financial and Process Authorities (FPA) delegation. > Contingent Projects DG1 papers will be submitted separately for the Board approval. > DG1 baseline to be set upon the DG1 approval via OIL or separate DG1 papers. > DG1 will highlight the total project cost, need date, and DG1 to DG2 cost.
Concept Scoping Report (CSR)	> Report outlines the refined scope, cost estimate at P50/P90 and time to deliver the preferred option. > The report will outline the delivery strategy, risks, safety in design, any required project approval (i.e. environmental, regulatory, community, property, etc.) and any project constraints (i.e. outage, staging, resources, etc.).
Project Approval Document (PAD) – **DG2**	> DG2 confirms the preferred option as technically and commercially prudent to address the need and/or opportunity and provides full approval to proceed with the project. > Approval is in accordance with the Financial and Process Authorities delegation. > The DG2 nominal accuracy range shall be defined as P5-P95 values. If the range remains outside +/- 15%[3], further development is required to manage or eliminate the risks that are driving the excessive range of project outcomes. > The PAD details the scope, need date, total project funding approval, breakdown of base cost, project risk contingency, efficiency considerations, Project Approved Cost (P50) and management contingency. > Release of project contingency will be managed by Works Delivery and release of management contingency will be managed by the

[3] Does not apply to contingent projects, accuracy will be based on the risk profile approved by the board.

Document	Function
	Head of Asset Management (refer to Appendix B) or the Project Director (for contingent projects).
Project Change Request (PCR)	> Formally requests a change in the approved project cost, DG1 to DG2 cost, scope, and/or timing. > Identifies project issues and recommends changes to address them. Explains clearly the reason for and the extent of the change (i.e. how much additional cost is required, what scope change is necessary and/or what extension of time is required for delivery.) > Changes to the original business case benefits and/or risks must be considered before submitting a PCR. All options to accommodate the changes without incurring additional costs to the project needs to be evaluated. > In the benefits realisation context, PCRs will be used to identify emergent benefits and/or changes in costs (e.g. efficiency) and/or risks and recommending their realisation.
Project Close Out Report (COR)	> Reports on the completion of network-related projects. It will include a summary of any benefits and/or changes in costs and/or risks, project performance, efficiency, lessons learnt during the period between Concept Scoping and Close Out. > This will also include acceptance of all asset information required to make decisions on the operation and maintenance of the assets.

8.1 Identify Need and/or Opportunity and Screen Options

All investments must address identified network needs and/or opportunities. This stage develops the case for the need and/or opportunity, provides potential options to address the need and/or opportunity. This is set out in the form of a Need and Options Screening Assessment (NOSA). Needs arise when there is a level of risk associated with delivering prescribed services which is required to be addressed. Investments are made in order to reduce the risk to an acceptable level In line with TransGrid's Risk Assessment Methodology (RAM) and regulatory requirements.

Needs must therefore be described in terms of risks and not solutions. The categories of risk are defined in the Network Asset Risk Assessment Methodology (RAM), namely: Health and Safety, Environment, Customer/Reliability, Financial, Compliance/Regulation, and Reputation. There are four broad categories of network-related needs: augmentations, NCIPAP, refurbishments, and replacements.

Opportunities are about reducing costs and/or delivering strategic benefits to TransGrid and electricity consumers. They differ from needs in that existing risk levels may be acceptable but the investment reduces the associated costs and/or delivers a strategic benefit. As opportunities are typically driven or accompanied by potential solutions, the description of the opportunity may include a description of a potential solution.

An investment may address elements of both need and opportunity.

Before developing the NOSA, the need and/or opportunity should be registered in the appropriate Project and Portfolio Management Solution (PPM) and will include the following details:

> Type of asset or assets
> Concept owner
> Brief description of the need and/or opportunity[4]
> Relevant AER project reason or category (see Appendix A)
> Relevant supporting documentation[5].

The NOSA must include a quantification of the pre-investment asset risk (the risk cost). It will not always be the case that the assessment of the risks, costs and benefits and dates will be certain and/or complete at this stage in the investment decision-making process. In such circumstances, the NOSAs will reflect expert judgement based on the best available information and evidence. Doing so provides a starting point for an objective discussion on the options and sensitivities. For Opportunities, the need will clearly articulate the benefit case and modelling behind it (e.g. expected market benefits of an upgrade facilitating increase flows).

The timing to address a need is dependent on the analysis of the options which are available to mitigate the risk. Therefore the NOSA is not required to state the need date or timing to address the risk, unless there is a specific and known date already available.

The NOSA should also identify any related needs and/or opportunities[6] and outline all options that were considered non-feasible and set out reasons why.

Key tasks, accountabilities and responsibilities to develop a need and/or opportunity are set out in Table 2.

Table 2 – Tasks, accountabilities and responsibilities for need identification and option screening

Task	Accountability	Responsibility
Complete analysis and gather supporting information to identify need and/or opportunity	Concept Owner	Concept Owner delegate
Register need and/or opportunity	Concept Owner	Concept Owner delegate
Assign Project Developer	Head of Project Development	Head of Project Development delegate
Conduct options screening	Concept Owner	Concept Owner delegate
Complete and approve NOSA	Concept Owner	Concept Owner delegate
Review of NOSA	Asset Analytics and Insight Manager	Asset Analytics and Insight Manager delegate

The key outputs from this stage is an approved NOSA including, where relevant, quantified pre-investment risk costs, and a list of all options.

[4] Unlike needs, opportunities are typically driven or accompanied by a potential solution. A brief description of the potential solution may be included as part of the project description.

[5] These may include documents such as planning studies, asset strategies and/or condition assessments. The documents should identify the relevant service level, performance requirement or standard. It may not be the case that all of the documentation required is complete at the time a need and/or opportunity is identified. However, it should be completed by the time the NOSA is submitted.

[6] What comprises a set of related needs and/or opportunities depends on the context. For example, it may be defined by reference to an asset strategy, a program of works, a common asset class or component, type of risk, geographic location, need date and/or resources to be used to address those needs and/or opportunities.

8.2 Evaluate Options

This stage focuses on developing and undertaking a desktop evaluation of the NOSA to address the need and/or opportunity. The evaluation should establish the technical feasibility and commercial efficiency of each option with the most commercially efficient, technically feasible option becoming the preferred option to be developed as a project in the Concept Scoping stage.

Both the technical feasibility and commercial evaluation must be supported by appropriate evidence (e.g. option feasibility studies). For needs or where there are risk implications for opportunities, the commercial evaluation should include an assessment of the post-investment risk costs for each technically feasible option.

Importantly, commercial assessments made for the purposes of deciding whether to include investments as part of a regulated revenue proposal by TransGrid to the Australian Energy Regulator (AER) should be assessed on an economic basis in line with TransGrid's strategic objectives and consistent with the requirements of the NER and relevant AER guidelines.

This stage involves the following:

> For each high level potential option identified in the NOSA as requiring further study, conducting a desktop review and summarising the results in separate Option Feasibility Study (OFS). For ex-ante network projects, an OFS is to be provided within 3 months of NOSA approval. For any urgent issues, Concept Owner may request the OFS to be completed earlier than the standard 3 months.
> Summarising the results of all such reviews in an Options Evaluation Report (OER). For contingent projects, an OER will be prepared after the completion of PADR.
> AAIT to support the optimisation of the prescribed network capital investment including timing of investment/need date which will be reflected in OERs.
> Creating/updating project forecast and milestones in PPM upon the OER approval. Considerations of delivery constraints and related needs bundling/efficiency opportunities to be included.
> Submitting DG1 papers to the Investment Review Committee (IRC) for endorsement, and subsequently to the Board for approval of the portfolio of projects contained in the Optimised Investment List (OIL) and projects with a total estimated value exceeding $15 million.

At this stage, cost estimates are ±25%[7] accuracy for each project.

The OER should clearly indicate all relevant sensitivities related to the preferred option, in particular all cost, discount rate, risk and benefit thresholds.

In addition, the OER should clearly state any specific concept owner requirements for the concept scoping stage.

The Board approval of the OIL will constitute the setting of annual budgets for all projects and DG1 approvals for relevant projects and programs as presented in the OIL. The OIL/DG1 should include total project cost, need date, and DG1 to DG2 cost for projects that request for DG1 approval.

For contingent projects, this stage will also involve:

> Pre-DG1 Board paper to request funding approval and endorsement to commence RIT-T process.
> Creating/updating project forecast and milestone in PPM upon pre-DG1 approval.
> RIT-T Process for contingent projects (PSCR and PADR).
> Following completion of the PADR, a DG1 paper is required to be submitted to the Investment Review Committee (IRC) for endorsement, and subsequently to the Board for approval. The approval of the DG1 paper will trigger the preparation of PACR.
> Refer to Major Projects Development and Delivery Guide for further detail.

Key tasks, accountabilities and responsibilities to evaluate a need and/or opportunity are set out in Table 3.

[7] Does not apply to contingent projects, accuracy will be based on the information available.

Table 3 – Tasks, accountabilities and responsibilities for options evaluation

Task	Accountability	Responsibility
Quantify risk costs and savings (if applicable)	Concept Owner	Concept Owner delegate
Provide reliability risk input and market benefits for prescribed network capital investments	H/NP	H/NP delegate
Undertake RIT-T (Contingent Projects)	Head of Regulation	Head of Regulation delegate
Interface and coordination for Concept Owner	Asset Analytics and Insight Manager	Asset Analytics and Insight Manager delegate
Conduct options analysis and complete and submit OFS	H/PD	H/PD delegate
Approve OFS	H/PD	H/PD
Conduct commercial evaluation and complete and submit OER	Concept Owner	Concept Owner delegate
Endorse OER	Asset Analytics and Insight Manager	Asset Analytics and Insight Manager delegate
Approve OER	H/AM (for Repex) or H/NP (For Augex and NCIPAP)	H/AM (For Repex) or H/NP (For Augex and NCIPAP)
Create/update project forecast and milestone in PPM.	H/ID or Project Director	H/ID delegate or Project Director delegate
Prepare and Issue Optimised Investment List (OIL)	H/AM	Asset Analytics and Insight Manager
Draft and submit the DG1 papers comprising two-yearly budgets for the OIL and for projects with a total estimated value exceeding $15 million	H/AM	Asset Analytics and Insight Manager
Endorse OIL– DG1 Board papers	IRC	IRC
Approve two-yearly budgets for OIL – DG1 Board papers	Board	Board
Prepare and review DG1 paper for emerging issues, contingent projects and Pre-DG1 Board Paper	H/AM	Asset Analytics and Insight Manager
Approve DG1 paper for emerging issues	H/AM or EM/NP&O or CEO or Board based on Delegated Financial & Process Authorities (Refer to Table 8)	H/AM or EM/NP&O or CEO or Board based on Delegated Financial & Process Authorities (Refer to Table 8)
Approve Pre-DG1 and DG1 Board papers for contingent projects	Board	EM/NP&O
Prepare Pre-DG1 Baseline (Contingent Projects)	Project Director	Project Director delegate
Prepare DG1 baseline	H/ID or Project Director	H/ID delegate or Project Director delegate
Upload Pre-DG1 (for Contingent Projects) and DG1 baseline	Head of Financial Planning & Analysis	Digital Finance Manager

Outputs from this stage are:

> Approved OFS's
> Approved Pre-DG1 Board paper to commence RIT-T for contingent projects
> Pre-DG1 baseline for contingent projects
> PSCR and PADR for contingent projects
> Approved OER(s)
> Approved Optimised Investment List (OIL)
> Approved budgets for OIL (approved DG1 Board papers)
> Approved DG1 paper for emerging issues/Contingent Projects
> DG1 baseline.

Outputs from the Evaluate Options stage will facilitate the setting of the DG1 baseline in PPM when DG1 is achieved by Works Delivery or Major Projects. The Digital Finance Manager will upload baseline or update budget changes into the ERP system.

8.3 Concept/Project Scoping

8.3.1 Ex-ante Network Projects

This stage focuses on developing the preferred option into a well-defined project that can be established and delivered (refer to *Project Delivery Manual for detail))*. This includes scope refinement, understanding the risks and items that are non-standard, documenting constraints, choosing the best way to manage these and wrapping this up into a reasonable estimate and risk profile.

For ex-ante network projects, coordinating the cross-functional aspects of the project resides with Works Delivery (refer to *Project Delivery Manual))*. This stage involves:

1. Preparation of Concept Scoping Report (CSR) – where changes in project scope, cost or time are identified refer to Section 10.5.
2. Completion of RIT-T (as required).
3. Project Approval (PAD/DG2).

Decision Gate 2 (DG2) baseline to be set upon approval of Project Approval Document (PAD) based on the Concept Scoping Report (CSR).

The Regulatory Investment Test – Transmission (RIT-T) is completed during this phase. The RIT-T must be completed to progress to DG2. Note: projects subject to the RIT-T (Augex and Repex) must follow the process set out by the AER Guidelines and the NER.

Key tasks, accountabilities and responsibilities to develop a project are set out in Table 4.

Table 4 – Tasks, accountabilities and responsibilities for ex-ante network projects

Task	Accountability	Responsibility
Undertake RIT-T (as required)	Head of Regulation	Head of Regulation delegate
Interface and coordination for Concept Owner	Asset Analytics and Insight Manager	Asset Analytics and Insight Manager delegate
Prepare CSR	H/PD	H/PD delegate
Endorse CSR (Concept owner to confirm scope)	Concept Owner	Concept Owner
Approve CSR	H/PD	H/PD
Prepare Project Approval (DG2 paper/ (PAD)	H/ID	H/ID delegate
Approve Project Approval (DG2) / Project Approval Document (PAD)	H/AM or EM/NP&O or CEO or Board based on Delegated Financial & Process Authorities (Refer to Table 8)	H/AM or EM/NP&O or CEO or Board based on Delegated Financial & Process Authorities (Refer to Table 8)

Task	Accountability	Responsibility
Prepare DG2 baseline	H/ID	H/ID delegate
Upload DG2 baseline	Head of Financial Planning & Analysis	Digital Finance Manager

Outputs from this stage are:

> RIT-T decision, including consultation and responses to submissions (as required)
> Concept Scoping Report (CSR)
> Project Approval Document/DG2 (PAD)
> DG2 Baseline.

8.3.2 Contingent Projects

This stage focuses on obtaining all required approvals to achieve a Decision Gate 2.

Upon completion of the RIT-T process, the Board approval will be required before proceeding with the Contingent Project Application (CPA).

For contingent projects, coordinating the cross-functional delivery aspects of the project resides with the Project Director. *Refer to Major Projects Development and Delivery Guide for details*. Key tasks, accountabilities and responsibilities to develop a project are set out in Table 5.

Table 5 – Tasks, accountabilities and responsibilities for Contingent Projects

Task	Accountability	Responsibility
Complete RIT-T process	Head of Regulation	Head of Regulation delegate
Prepare CSR	Project Director	Project Director Delegate
Endorse CSR	Concept Owner	Concept Owner
Approve CSR	Project Director	Project Director
Prepare and submit Board paper to proceed with Contingent Project Application (CPA)	Project Director	Project Director Delegate
Approve Board paper to proceed with CPA	Board	EM/MP
Prepare and submit (DG2 paper/ PAD)	Project Director	Project Director Delegate
Approve (DG2 paper/ PAD)	Board	EM/MP
Prepare DG2 baseline	Project Director	Project Director Delegate
Upload DG2 Baseline	Head of Financial Planning & Analysis	Digital Finance Manager

Outputs from this stage are:

> RIT-T decision, including consultation and responses to submissions (as required)
> Contingent Project Determination
> Project Approval Document/DG2 (PAD)
> DG2 Baseline.

8.4 Strategic Property Acquisition

Strategic property acquisition is property or easement acquisition in advance of a network-related project's timeline in order to secure property rights for an identified or likely future need and/or opportunity. Strategic property acquisition may be driven by the need to secure property at reasonable cost for an identified need and/or opportunity or the need to secure property in a heavily constrained area for a likely future need and/or opportunity.

The strategic property acquisition may be carried out with a suitable justification, taking into account factors including:

- Likely need and timing of the proposed project.
- Possibility that options are available that satisfy the project need without acquiring the specified land.
- Scarcity of land.
- Rate of land development.
- Implication of purchasing specified land that may not be required.

8.5 Deliver Project

For ex-ante network and contingent projects, this stage begins with DG2/PAD for detailed design, environmental approval, procurement and delivery of the project to the Concept Scoping Report (CSR) within the specified timeline (refer to *Project Delivery Manual for detail)*.

Any changes to the scope, time or budget specified in the approved DG2 paper/PAD will require a PCR in accordance with section 10.5. Benefits realised in the Deliver Project stage should be recorded and reported in accordance with section 11.

During this stage:

- For ex-ante network-related projects, coordinating the cross-functional aspects of the project resides with the H/ID
- For contingent projects, coordinating the cross-functional aspects of the projects resides with the Project Director.

Key task, accountabilities and responsibilities for this phase are set out in Table 6.

Table 6 – Tasks, accountabilities and responsibilities for establishing projects

Task	Accountability	Responsibility
Deliver project to specified time, scope and budget	H/ID or Project Director	H/ID delegate or Project Director delegate
Prepare Asset In-Service (Pre-Energisation Checklist). Refer to OM911 procedure	H/ID or Project Director	H/ID delegate or Project Director delegate
Approve Asset In-Service (Pre-Energisation Checklist). Refer to OM911 procedure	H/NO	Asset Monitoring Centre

Output from this stage is:

- Asset In-Service.

8.6 Close Out

For ex-ante network and contingent projects, this stage begins with Asset-In-Service (*refer to OM911 procedure for pre-energisation requirements*).

Asset Capitalisation to be completed within 30 calendar days from the completion of the Asset In-service.

Post Project Review Meeting (if required by the Concept Owner) will be held by the Project Manager or Project Director (for contingent projects) and meeting minutes issued accordingly to all relevant stakeholders.

During the completion phase, Project Close Out Report is to be submitted within 3 months of the final Asset In-service to confirm the need has been satisfied, all asset information has been provided (*refer to Asset Acceptance procedure (D2016/07756) for detail*) and outstanding defects/issues have been resolved.

Approval of Project Close Out Report is required prior to the closing of the project. Asset Manager to approve the Project Close Out Report within 4 weeks after receiving the report.

For contingent projects, project to be closed upon completion of inter-regional testing. *Refer to Major Project Development and Delivery Guide for further detail.*

Key task, accountabilities and responsibilities for this phase are set out in Table 7.

Table 7 – Tasks, accountabilities and responsibilities for finalise project

Task	Accountability	Responsibility
Prepare and submit Asset Capitalisation Spreadsheet for creation of new assets and additions to existing assets in the Fixed Assets Register	H/ID or Project Director	H/ID delegate or Project Director delegate
Approve Asset Capitalisation Spreadsheet	H/AM	H/AM Delegate
Post Project Review meeting	H/ID or Project Director	H/ID delegate or Project Director delegate
Issue Post Project Review Meeting Minutes	H/ID or Project Director	H/ID delegate or Project Director delegate
Prepare and Submit Project Close Out Report	H/ID or Project Director	H/ID delegate or Project Director delegate
Approve Project Close Out Report	H/AM	H/AM delegate
Close completed projects/needs in Ellipse/PPM/PDGS	H/ID or Project Director	H/ID delegate or Project Director delegate
Finalise completed projects/needs in Ellipse/PPM/PDGS	H/FP&A	Digital Finance Manager

Outputs from this stage are:

- Asset capitalisation
- Post Project Review meeting minutes (if required)
- Project Close out Report (including asset acceptance) and benefit realisation.

9. Accountabilities

9.1 Decision Gate Approvals

The Prescribed Network Capital Investment Process requires investment decision to pass through two Decision Gates, namely Decision Gate 1 (**DG1**) for project commencement, and Decision Gate 2 (**DG2**) for project delivery approval.

For contingent projects, the Pre-Decision Gate 1 **(Pre-DG1**) is required to secure funding approval to commence RIT-T. Refer to Appendix C for RACI.

9.1.1 Pre-Decision Gate 1 (for Contingent Projects)

The Pre-DG1 Board paper is required to be submitted to the Board to request funding approval to commence RIT-T for contingent projects.

9.1.2 Project Commencement (DG1)

The OIL is submitted to the IRC for endorsement and subsequently to the Board for approval on an annual basis. The OIL comprises all projects and programs spread across all phases of the investment lifecycles. It contains a portfolio level summary of all network capital works for a two years period. Individual DG1 papers for projects with total estimated value exceeding $15 million each are included in the OIL.

Approval of the Optimised Investment List (OIL) will constitute approval of the annual budgets for all projects. The approval of OIL constitutes DG1 approvals for relevant projects and programs.

For replacement programs (i.e. CB renewal program, CT renewal program, etc.), the DG1 approval means approval to commence development for the entire program. Individual projects within the program can be prioritised and substituted at the discretion of the relevant asset managers.

Upon approval of the OIL, Asset Analytics and Insights Manager will notify key stakeholders (CFO, EM/NPO, EM/WD, EM/CS, H/AM, H/PD, H/ID, and H/DPP) of the approved Network Capital Budget value and provide an overview of included projects.

The approval will also trigger the hand over from Asset Management to Works Delivery or Major Projects which will enable the projects/programs to be further scoped and costed. This approval will initiate:

- Refinement of scoping and concept design for the works.
- Regulatory Investment Test-Transmission (RIT-T) consultation for the project where required by the National Electricity Rules (NER) and other approvals (e.g. Contingent project application),
- Community consultation or environmental impact assessment required for the project under the relevant State or Federal environmental legislation.
- Property acquisition as required.
- Procurement strategy.

Emerging issues/ contingent projects will require individual Project Commencement (DG1) papers to be approved based on the Financial and Process Authorities (FPA).

For contingent projects, additional Board approval is required to proceed with the Contingent Project Application (CPA) submission upon completion of the RIT-T process.

DG1 approval is based on the total project cost specified in the OER. It states the approved amount that can be spent between DG1 to DG2 to refine the scope and the expected timeframe. Please refer to section 10.5 for change management process.

9.1.3 Project Delivery (DG2)

The Project Approval Document (PAD) confirms the selection of the project option demonstrated to be the most technically and commercially optimal solution to address the need and/or opportunity and provides full approval to proceed with the project.

Where a program of work has been established with multiple individual projects, it will be evaluated and approved based on the delegated authority for the individual project value not the entire program of work.

The DG2 approval must be in accordance with the Financial and Process Authorities (FPA).

> A summary of the Decision Gate approval authorities is provided in Table 8 and Table 9. The thresholds are defined in relation to the total project cost. Please refer to section 10.5 for the change management process.Table 9 – Summary of Pre-DG1/DG1/DG2/PCR approval authorities

Project Type	Board
Contingent Projects	>$15m

shows the key accountabilities for these approval authorities and other key stakeholders.

Table 8 – Summary of DG1/DG2/PCR approval authorities

Project Type	H/AM	EM/NPO	CEO via IRC	Board
Ex-ante Network Projects	$2m	$5m	$15m	>$15m

Table 9 – Summary of Pre-DG1/DG1/DG2/PCR approval authorities

Project Type	Board
Contingent Projects	>$15m

Table 10 – Key accountabilities

Title	Accountabilities
The Board	> Approve budget for the Optimised Investment List (OIL) (at the portfolio level). > Approve individual projects at DG1 with a total estimated value less than $15 million as part of the yearly Optimised Investment List (OIL). > Approve individual projects at DG1/DG2 above $15 million. > Approve Pre-DG1, DG1 and DG2 for Contingent projects. > Approve projects that involve other matters identified in the Financial and Process Authorities (FPA). This includes projects assessed by the CEO as being highly sensitive.
Investment Review Committee (IRC)	> Endorse the OIL prior to the Board approval. > Endorse Pre-DG1, DG1 and DG2 for Contingent projects. > Review and endorse individual DG1/DG2/PCR for projects above $15 million prior to the Board approval. > Approve DG1/DG2/PCR for projects between $5 million and $15 million each.
CEO	> Approve DG1 for emerging issues for projects between $5 million and $15 million each via Investment Review Committee. > Endorse or approve PCRs in accordance with the delegated FPA via Investment Review Committee. > Endorse or approve Project Approval (DG2/PAD) papers in accordance with the delegated FPA via Investment Review committee.
Executive Manager / Network Planning & Operations (EM/NPO)	> Ensure conformance of all network investments with the prescribed capital investment process.

Title	Accountabilities
	> Submission to the CEO or Board of Project Commencement (DG1/OIL). > Endorse or approve PCRs in accordance with the delegated FPA. > Endorse or approve DG1 for emerging issues and DG2 papers/PAD for ex-ante network projects in accordance with the delegated FPA. > Endorse Pre-DG1 and DG1 board paper for contingent projects prior to IRC submission. > Approve regulatory consultation documents.
Executive Manager / Major Projects (EM/MP) (applies to contingent/ major projects)	> Endorse or approve PCRs in accordance with the delegated FPA. > Endorse or approve DG2 papers/PAD in accordance with the delegated Financial and Process Authorities (FPA). > Approve regulatory consultation documents.

Title	Accountabilities
Head of Asset Management (H/AM)	> Day to day management of the Prescribed Network Capital Investment Process. > Manage the Prescribed Network Capital Investment process, governance and all supporting documents, templates and tools. > Manage network risk and development of asset strategies, analysis and supporting evidence for network-related asset replacements, refurbishments, decommissioning and disposals. > Approve NOSAs for Repex projects (delegated to Asset Managers). > Approve OER in relation to Repex Projects. > Endorse Optimised Investment List (OIL) prior to the IRC submission. > Endorse or approve DG1 for emerging issues and Project Approval (DG2/PAD) papers for ex-ante network projects in accordance with the delegated FPA. > Prepare DG1 papers for contingent projects. > Approve release of management of contingency to be allocated to the ex-ante network projects. > Endorse or approve PCRs for ex-ante network-related investments based on delegated FPA. > Approve Project Close Out Report for ex-ante network investments (delegated to Asset Managers). > Ensure relevant RIT-T documentation for Repex projects is prepared as required. > Set priorities for network portfolio investments to address constraints and manage network risk. > Amend portfolio priority based on emerging and emergency issues. > Approve Asset capitalisation information for creation of new assets and addition to existing assets (delegated to Asset Managers)
Head of Network Planning (H/NP)	> Develop area plans, analysis and supporting evidence for network planning and augmentations. > Approve NOSAs and OERs for network augmentation and NCIPAP. > Consulted for OIL/DG1 papers, and project variations in relation to network augmentations. > Ensure relevant RIT-T documentation and input for Augex and Repex projects is prepared as required. > Be informed of DG2 papers and PAD for network augmentations and NCIPAP.

Title	Accountabilities
Concept Owner delegate (AM, and NP)	> Identify needs and/or opportunities, and develop options to mitigate network risks. > Produce the NOSAs and OERs (ex-ante network related projects and contingent projects) > Produce PCRs if change is initiated by Concept Owner (Refer to section 10.5). > Produce OERs (ex-ante network-related projects and contingent projects). > Ensure currency of the relevant need and/or opportunity, and fitness for purpose of the preferred option/ project. > Endorse Concept Scoping Report. > Request Post Project Review Meeting if required.
Asset Analytics and Insights Manager (AAIM)	> Endorse OERs for ex-ante network-related projects and contingent projects. > Develop and maintain the Optimised Investment List (OIL). > Prepare DG1 paper to seek budget approval for OIL. > Prepare DG1 paper for emerging issues/projects. > Circulate approved OIL via memo to key stakeholders (CFO, EM/NPO, EM/WD, EM/CS, H/AM, H/PD, H/ID, H/FP&A, H/FIR and H/DPP). > Operate and maintain the Asset Analytics & Investment Tool to inform prescribed network capital investment. > Track and report network risk and benefits realisation. > Develop business impact analysis to support portfolio optimisation.
Head of Project Development or delegate	> Prepare and approve OFSs for network-related projects. > Design and prepare drawings for network-related projects including Works as Executed drafting and uploading to corporate system at project completion. > Prepare and approve Concept Scoping Report (CSR). > Provide input for and endorse PCRs as required.

Title	Accountabilities
Head of Property and Environment	> Obtain network-related planning and environmental approvals. > Undertake network-related property acquisitions.
Head of Infrastructure Delivery or delegate	> Compile, prioritise and maintain the projects being developed and/or delivered based on outage constraints, resources constraints and other delivery constraints. > Create PPM project and cost forecast upon OER approval including consideration of related needs/projects and creation of baselines. > Manage the initiation, coordination, tracking, reporting and delivery of all portfolio projects from Concept Scoping through to Close Out stages. > Produce PAD/DG2 documentations, PCRs, risk register, change register, lesson learnt register, pre-energisation checklist, Project Close Out Report, asset capitalisation spreadsheet information and post project review meeting minutes (if required). > Closure of project in ERP.
Head of Delivery Portfolio Planning or delegate	> Conduct delivery portfolio prioritisation, work planning and resourcing analysis for network-related investments.
Head of Financial Planning & Analysis or delegate	> Evaluate cost efficiency savings identified through governance documentations for network investments and advise H/AM if the savings can be re-invested. > Manage project baseline/budget changes. > Review Project Close Out Report and update financial reports. > Load/update baseline/budget changes into ERP system. > Create and register Pre-DG1 work orders for each need in the need register. > Update actual RAB and capitalisation of assets in the accounting and tax fixed asset registers. > Ensure all completed projects are finalised in ERP following asset capitalisation.
Head of Accounting and Compliance	> Advice on expenditure capitalisation criteria for options identified. > Review and endorse classifications of projects as capex.
Head of Regulation	> Ensure the Regulatory process is carried out appropriately.
Asset Monitoring Centre Manager	> Review, endorse, and approve pre-energisation checklist.
Project Director – Major Projects	> Accountable for the delivery of the Project/Need from DG1 to asset handover. This accountability includes all elements of the project. > Approve release of management contingency to be allocated to projects. > Approve or endorse PCRs post DG1 in accordance with the FPA and sub-delegated authority. > Manage the initiation, coordination, tracking and reporting of specific projects post DG1.

Title	Accountabilities
	> Manage the completion of detailed design and drawings for contingent projects > Prepare and produce Project Approval (DG2)/PAD. > Manage the coordination and delivery of all program of works from Concept Scoping phases through to Close Out stages. > Produce PCRs and maintain the change register for post-DG1 projects. > Produce Project Close Out Report

10. Assurance

10.1 Decision Gates

In this section, the Decision Gates are described in terms of the assurances required to support their approvals.

10.1.1 Pre-Decision Gate 1 Board Paper

For contingent projects, the Pre-DG1 board paper to be submitted to the Board to request for funding to commence RIT-T process. The Pre-DG1 paper should be supported by the following information:

> Scope, drivers and potential benefits of the project.
> Breakdown of expenditure required to complete the RIT-T process.
> RIT-T timeline.

10.1.2 Optimised Investment List (OIL – DG1)

An Optimised Investment List submitted to the Board with endorsement from the Investment Review Committee seeking approval for the annual budget and DG1 approvals should be supported by the following information:

> Risk, benefit and other relevant details on projects and programs of work.
> Cost estimate (±25%)[8] for the entire project and the annual expected expenditure.
> Estimate of the project expenditure expected to be incurred between DG1 and DG2.
> Need date.
> Investment justification.
> Individual DG1 papers for projects each with total estimated value exceeding $15 million.

For contingent projects, DG1 papers will be submitted to the Board separately. For emerging issues, DG1 papers will be submitted separately for approval based on the delegated FPA.

10.1.3 Project Approval Document (PAD – DG2)

A request for Project Approval (DG2 paper /PAD) submitted to H/AM[9] and the appropriate delegated authorities should be supported by the following information:

> Planning need and/or opportunity for the project.
> Description of the proposed solution based on the Concept Scoping Report (CSR).
> Total project funding (including project risk contingency and management contingency).
> Level of accuracy for the entire project and the expected expenditures as per Concept Scoping Report (CSR).
> Reference to the project in the AER's ex-ante capex allowance decision (if applicable)
> RIT-T approval (if applicable).
> Status of the environmental or development approvals and property agreements (if applicable).
> Detailed variation in costs or timing at the PAD (DG2) stage as compared to DG1 estimate shall be noted including any efficiencies.
> Project timeline including need date.

Based on the project timeline, the Concept Owner may choose to revise the need date at Decision Gate 2. Where the revised need date is still greater than the project timeline in the CSR, the revised need date will be

[8] Does not apply to contingent projects, accuracy will be based on the information available.

[9] For contingent projects H/AM is consulted, the Project Director remains accountable

incorporated into the Project Approval Document (PAD). Where the revised need date is earlier than the project timeline in the CSR (i.e. acceleration), PCR is to be raised by the Concept Owner as per section 10.5.

10.2 Project Reporting

Section 10.2.1, 10.2.2 and 10.2.3 are for ex-ante network projects. Refer to 10.2.4 for contingent projects.

10.2.1 Works Program Executive Committee (WPEC) and Delivery Review Committee (DRC)

Post-DG1, monthly status reports will be produced by the H/ID on the progress of each project through to project completion and close out in ERP and will be presented to Delivery Review Committee (DRC) and Works Program Executive Committee (WPEC).

10.2.2 Portfolio Planning Committee

Pre-DG1 investments will be presented to the Portfolio Planning Committee (PPC) by H/AM. The PPC will also:

> Monitor and report capital program at the portfolio level.
> Prioritise and optimise capital portfolio.
> Discuss adjustment or change to cost, budget, or timing (within the budget year and portfolio) before submission to IRC.
> Highlight the impact of portfolio movement on network risk and opportunity for CAPEX/OPEX trade-off.

10.2.3 Investment Review Committee (IRC)

The Prescribed Capital Investment Portfolio expenditure and variance explanation against AER allowance will be presented to the Investment Review Committee monthly. All PADs/PCRs/DG1 papers will also be presented to the committee for endorsement or approval as appropriate.

10.2.4 For Contingent Projects

Pre-DG1, monthly status reports will be produced by Asset Management to the monthly executive meeting with input from relevant stakeholders.

Post-DG1, monthly status reports will be produced by the Major Projects on the delivery of each project to the monthly executive meeting.

10.3 Post Project Review (PPR) meeting

A formal review of each project will occur following Project Completion (where required by the Concept owner). The Post Project Review meeting will be organised by Works Delivery/Major Projects prior to submission of the Project Close Out Report. All relevant stakeholders will be consulted and informed on the Post Project Review meeting (PPR). This review will include:

> Lessons learnt on all relevant stage and aspect of the projects.
> Action items to ensure that the issues/risk are mitigated on future investment.

The completed PPR meeting minutes will be prepared by the Project Manager or the Project Director responsible for the project and must be completed within two (2) weeks of the Post Project Review Meeting, The PPR meeting minutes will be included in Project Close Out report as an attachment.

10.4 Project Close Out Report

Project Close Out Report is to be submitted within 3 months of the last Asset In-service by Works Delivery or Major Projects and will confirm the final financial position of the project, completion of Asset Management handover, asset capitalisation, Post Project Review (if required) and the completion of outstanding defects/issues. This report will include:

> All asset information required to operate and maintain the asset.

- Project outcomes achieved compared with the planning needs identified in the relevant PAD or PCR.
- Detailed project delivery performance against proposed project scope, program and budget at Work Breakdown structure level[10].
- Any significant contractual issues and/or performance of suppliers and contractors.
- Details and cost estimates of outstanding defects and minor omissions (if agreed by H/AM) including due dates, agreed allocated responsibilities and proposed tacking of outstanding items.

For project cancellation, the Project Close Out report shall be submitted by Works Delivery upon receipt of a PCR. This Project Close Out report shall include the appropriate information on how the capital expenditure shall be handled.

10.5 Project Change Requests (PCR) and Change Register

PCRs are used in two ways:

1. To identify project issues and request project changes to address them.
2. To identify emergent project benefits and/or changes in cost and/or risk and recommending their realisation (outlined in section 11).

A PCR may be approved by the H/AM or Project Director (for contingent projects) without going to the original delegated FPA if the proposed change:

- Impact on timing only.
- Impact on scope changes without exceeding Total Project Funding.
- Impact on scope changes that would result in a cost reduction.

In all cases, PCRs must be raised prior to:

- Scope changes being implemented.
- Actual DG1-DG2 cost exceeded the approved DG1-DG2 Cost (for projects at Concept Scoping Stage).
- Actual project cost exceeded the approved project cost.
- Actual Asset In-Service date exceeded the approved need date.

WD to allow minimum of 2 weeks for review and approval by NP&O. For PCRs that require IRC/ Board approval, WD to consider due dates for document submission to Asset Management in relation to the IRC and Board meeting. Appropriate time should be allowed for review by the H/AM.

The change register is used to capture all the changes to cost, time and scope throughout the lifecycle of the projects.

Where a program of work has been established with multiple individual projects and a PCR is raised at any stage, it will be evaluated and approved based on the delegated authority for the individual project value not the entire program of work.

A PCR will need to define the change category as per the capital efficiency treatment procedure.

10.5.1 Pre-DG1 Change Management

During this phase:

- Any changes to the scope and options will trigger revision of a NOSA.
- Any significant changes to the estimate (+/-25%) and/or addition/revision of options will trigger revision of an OFS.
- Any changes to the preferred option, need date, cancellation or additional clarification on the scope that doesn't trigger revision of OFS will trigger revision of an OER.

For contingent projects, if the forecast Pre-DG1 cost exceeds the approved Pre-DG1 cost, Asset Management will request additional funding via an updated Pre-DG1 Board paper.

---

[10] Any variances in the final outcome as compared to the project parameters described in the PAD and, where applicable, the ex-ante capex allowance determined by the AER, are to be listed and explained.

10.5.2 Concept Scoping Change Management

10.5.2.1 Concept Scoping Phase

During this phase, a change register is used to capture any scope, cost, and timing impact of the project. The change register will also provide impact to the development cost (DG1 to DG2 cost) and also the total project cost (and snapshotted in the Concept Scoping Report (CSR)).

If the development cost (DG1 to DG2 cost) forecast exceeds the approved development cost at DG1, the H/ID will request for additional funding to the H/AM via Project Change Request (PCR) to further scope the project. The H/AM will endorse/approve/reject the PCR based on the DG1 to DG2 cost and not the total project cost.

The H/ID will advise the H/AM as early as possible if the changes captured in the change register will have any impact on the total project cost beyond +/-25%. The H/AM will assess whether the investment remains prudent.

Where the investment is no longer prudent (i.e. cost exceeds benefits or there exist competing investment opportunities that will deliver higher benefit to the consumers) either upon the receipt of the CSR or prior, the Concept Owner will raise a PCR for approval by the H/AM to:

> Review the scope of work or
> Revisit the options and may lead to revision of OFS, OER and DG1 (Projects remains at Concept Scoping Stage) or
> Cancel the project. For cancellation of a project, Works Delivery shall prepare Project Close Out Report as per section 10.4 upon receipt of the PCR.

If the Asset-In Service date forecast will exceed the approved need date, the H/ID will request additional extension of time via Project Change Request (PCR). The H/AM shall assess the impact of the extension of time with regard to the project need and identify any risk mitigations that may be required, and determine the appropriate action in accordance with the following:

> Where it is determined that the extension of time is justified, a revised approved need date may be approved by the H/AM.
> Where it is determined that the original need date to be met or extension of time is not justified, the Project Change Request will be rejected.

Changes to a need date may also be initiated by the Concept Owner at any stage. These changes will be raised via a PCR.

At Decision Gate 2, the Concept Owner may choose to revise the need date. Where the revised need date is still greater than the project timeline in the CSR, the revised need date will be incorporated into the Project Approval Document (PAD). Where the revised need date is earlier than the project timeline in the CSR, a PCR will be raised by the Concept Owner.

10.5.2.2 Concept Scoping – Contingent projects

During this phase, a change register is used to capture any scope, cost, and timing impact of the project. The change register will also provide impact to the development cost (DG1 to DG2 cost) and also the total project cost. If the development Cost (DG1 to DG2 cost) forecast exceeds the approved development cost at DG1, the Project Director will request additional funding via an updated PCR/DG1 approval. The approval will be obtained as per the delegated FPA.

10.5.3 Post-DG2 Change management

Post-DG2, change requests may comprise of cost, time and/or scope variances and are outlined below.

A change register will be used to capture all variations/risk eventuated throughout the delivery of the project without exceeding the Project Approved Cost set at DG2.

The H/ID will maintain the change register and advise the H/AM about the impact on the project approved cost and timing.

10.5.3.1 Cost Variances

Where the cost to complete a project is forecast to exceed the current Project Approved Cost, the H/ID will request (via a PCR with supporting documentation) the H/AM to endorse/approve the additional funding. Where the management contingency is available, the H/AM may release the fund through the PCR process. The project risk contingency is to be fully utilised prior to accessing any management contingency.

Where the cost to complete a project is forecast to exceed the total project funding, an approval will be sought from the relevant authorities as per the original FPA delegation.

In relation to efficiency or inefficiency, the H/AM is to provide the final determination as to whether the changes are due to factors outside of or within Works Delivery's control as per the capital efficiency treatment procedure.

10.5.3.2 Time Variances

Where the Asset In-Service date is forecast to be achieved after the approved need date, the H/ID will request (via a PCR) the Concept Owner to arrange a revised approved need date, and seek approval from the H/AM.

The H/AM shall assess the impact of the extension of time with regard to the need date and identify any risk mitigations that may be required, and determine the appropriate action in accordance with the following:

> Where it is determined that the extension of time is justified, a revised approved need date may be approved by the H/AM.
> Where it is determined that the original need date to be met or extension of time is not justified, the Project Change Request to be rejected.

Changes to a need date may also be initiated by the Concept Owner at any stage. These changes will be raised via a PCR.

10.5.3.3 Scope Changes

Any risk eventuated or minor changes required to address the scope of project within the Project Approved Cost shall be managed by Works Delivery and captured in the change register until the cost to complete a project is forecast to exceed the Project Approved Cost (refer to section 10.5.3.1).

Changes to a project scope may also be initiated by the Concept Owner at any stage. These changes will be raised via a PCR.

Note: PCRs must include cost and time estimates required to deliver the revised scope.

10.5.3.4 Contingent Projects

Sections 10.5.3.1 to 10.5.3.3 apply to contingent projects with the following exceptions:

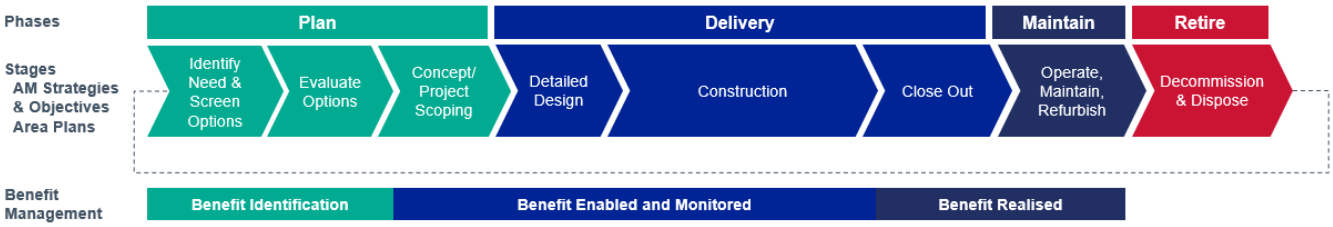
> The Project Director is accountable for obtaining the approvals (based on delegated FPA) in place of the H/AM and H/ID.
> The Project Director is responsible for allocating and releasing contingency (if available) to the project team or service providers.

11. Benefits Management

TransGrid invests in the prescribed network capital to meets its obligation under relevant NER, Network Safety and other obligations or to benefit consumers as per the National Electricity Objectives (NEO).

Benefits are either planned or emergent. Planned benefits are those that are, as part of the business case, expected to be realised by the asset once delivered and in operation. Emergent benefits are those additional asset operating related benefits that weren't planned but that arise during the Deliver phase.

Figure 3 – Benefit workflow



Documentation

Appropriate records are required to evidence the identification, and tracking the realisation, of benefits. The types of documentation are set out in Table 11. The remainder of this section sets out the benefits realisation process and documentation required. The content of each type of document is described in terms of general principles. The specific content of each type of document may vary on a case-by-case basis.

Table 11 – Documentation types

Project Stage	Document	Function
Evaluate Options	Option Evaluation Report	The material benefit expected to arise from an investment should be identified in the Evaluate options stage. Benefit should be estimated to +/- 25% accuracy.
Concept/Project Scoping, Detailed Design, Construction	Project Change Request (PCR), Project Approval Document (PAD)	Identifies project issues and recommends changes to address them. In the benefits realisation context, this means identifying emergent benefits and/or changes in cost and/or risk and recommending their realisation.
Close Out	Project Close Out Report	Reports on the completion of network-related projects. As appropriate, it includes a section summarising any benefits and/or changes in cost and/or risk that emerged during the concept scoping phase up until the handover of the asset including all asset information required to operate and maintain the assets.
	Project Close Out Report	For contingent projects, projects are not deemed complete until the benefits are realised, this includes the completion of any inter-regional testing.

12. Optimisation Procedure

Any material changes to the prescribed capital portfolio will be managed through optimisation. Optimisation ensures TransGrid is delivering value against the key strategic objectives articulated in the business plan.

It occurs in one of two ways, either by changes at the project and program level ('bottom up') or at the portfolio level ('top down'). In both cases, the optimisation process involves assessing the impacts on the relevant change(s) to projects, programs, and portfolios (captured in relevant change management document).

12.1 Asset Analytics & Investment Tool (AAIT)

The Asset Analytics & Investment tool (AAIT) calculates both the pre and post-investment risk costs used as inputs into the NPV assessment. The tool optimises the investment portfolio based on benefit/cost provided by individual projects and their alignment with TransGrid's strategic objectives, to meet fund and other constraints and/or business requirements.

The AAIT also provides an assessment of the likelihood and consequences for all hazards associated with the asset in question and to quantify the relevant risk cost in dollar terms. Projects that contribute directly to specific compliance requirements such as NER obligations or IPART reliability standards are also factored into the investment decisions.

12.2 Assess Project and portfolio Impact

There are two aspects to the project level analysis:

> Asset – the impact on the asset's operating risk profile and lifecycle cost (including operating and maintenance costs).
> Project – the impact on delivery of the project in terms of scope, time, cost, risks and resources. It may also lead to a wider impact on the capital project portfolio.

All material changes to the prescribed capital portfolio for the Regulatory Period driven by a PCR or emerging projects could lead to portfolio re-optimisation. The changes and re-optimisation are managed and reported by the H/AM to the Investment Review Committee.

12.3 Optimised Investment List (OIL)

Whenever the OIL has been revised as part of the annual approval, the Asset Analytics and Insights Manager should advise the H/AM on whether the mix of projects and program in the updated OIL would materially increase or decrease the total budgeted value provided by the portfolio. The H/AM is accountable for maintaining the OIL and the associated annual budget as approved by the Board. Works Delivery is responsible for developing and delivering the portfolio of projects in the OIL.

Table 12 outlines the responsibilities for Asset Management (AM) and Works Delivery (WD) and Major Projects (MP)

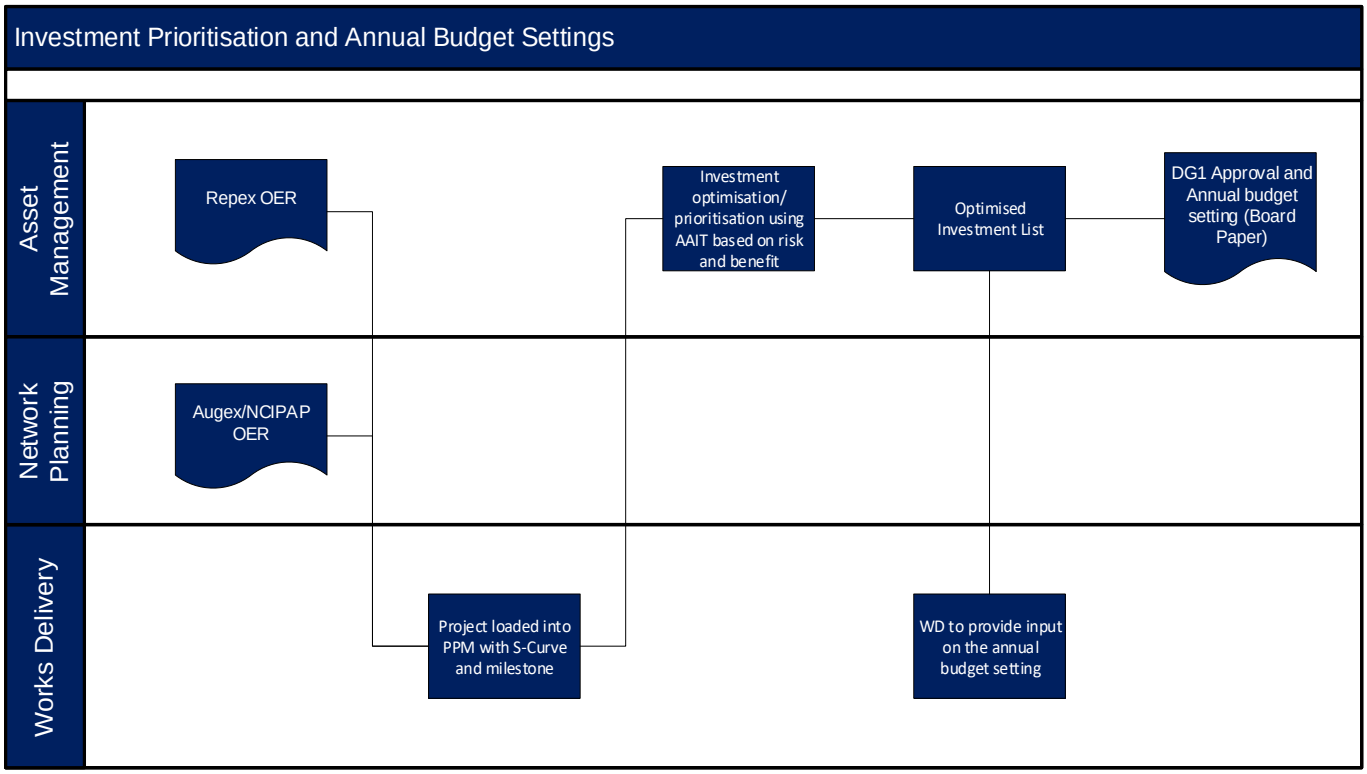
Figure 4 shows the process of investment prioritisation and setting of Annual Budget.

Table 12 – Tasks, accountabilities and responsibilities for Management of Portfolio Annual Budget

Task	Accountability	Responsibility
Management of Annual Budget for portfolio of projects	H/AM	H/AM delegate
Manage and deliver post-DG1 projects within the portfolio Annual Budget set	H/ID	H/ID delegate
Provide input on the status of projects for optimisation including cost and timing	H/ID	H/ID delegate

Task	Accountability	Responsibility
Re-optimise of project portfolio within budget constraint as required	AAIM	AAIM delegate
Management of contingent projects annual budgets and optimisation	Project Director	Project Director delegate

Figure 4 – investment prioritisation and setting of Annual Budget



13. Implementation

Changes outlined in this process are to be implemented through presentations by H/AM to the relevant internal stakeholders.

14. Monitoring and review

The application of this process will be monitored and, at least once every calendar year, reviewed by the Head of Asset Management.

15. Change from previous version

Revision no	Approved by	Amendment
0	Gerard Reiter, EM/NPO	This process document has been created to supersede information previously included in the following documents that have now become obsolete: > Prescribed Capital Investment Procedure, > Prescribed Capital Investment Arrangements, and

Revision no	Approved by	Amendment
		> Prescribed Capital Investment Benefits and Optimisation Procedure. This process document was updated to reflect the new prescribed investment process and the new operating model: > NOS and OSA are combined (NOSA) > DG1 consists of the Optimised Investment List (OIL) > RPS is replaced by the Project Development Initiation (PDI) DG2 is combined with the Project Approval Document (PAD).
1	Lance Wee, H/AM	Minor amendments to the RIT-T process and references to the Project Development Framework.
2	Gerard Reiter, EM/NP&O	• Changes in Decision Gate 2 to be at Contract Award (if applicable) • Changes in preparation of PAD/DG2 approval accountability and responsibility • Refinement of criteria for PCRs, PCRs approval, and baseline changes • Inclusion of Management contingency in total project funding approval • Inclusion of management of emerging issues process upon approval of yearly OIL • Refinement of Project Finalisation process Inclusion of Information technology business unit for Operational Technology projects that doesn't have involvement by Project Development/Works Delivery
3	Sean McGoldrick, Acting EM/NP&O	• Prescribed Network Capital Investment Framework and Process combined into Prescribed Network Capital Investment Process • Changes in PAD/DG2 definition to be at Concept Scoping rather than Contract Award • Realignment of Accountability between Asset Management, Network Planning, Project Development and Works Delivery • Refinement of PCR Process (in particular between DG1 and DG2) and inclusion of change register. • Combine Asset Acceptance and Project Close Out Report • Inclusion of Contingent Projects Process

16. References

National Electricity Rules

Network Asset Risk Assessment Methodology (RAM)

Capital Efficiency Treatment Procedure

Operating Model Framework

Financial and Process Authorities

Asset Acceptance procedure

OM911 procedure

Major Projects Development and Delivery Guide

Project Delivery Manual

17. Abbreviations

Term	Meaning
AAI	Asset Analytics & Insights
AAIT	Asset Analytics & Investment Tool
AM	Asset Management
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
ALARP	As Low As Reasonably Practicable
CSR	Concept Scoping Report
DG	Decision Gate
EM	Executive Manager
FPA	Financial and Process Authority
FS	Field Support
H	Head of
IRC	Investment Review Committee
IRR	Internal Rate of Return
ID	Infrastructure Delivery
NO	Network Operations
NPO	Network Planning & Operations
NOSA	Need & Options Screening Assessment
NPV	Net Present Value
OER	Options Evaluation Report
OFS	Option Feasibility Study
OIL	Optimised Investment List
OT	Operational Technology

Term	Meaning
PSCR	Project Specification Consultation Report
PADR	Project Assessment Draft Report
PACR	Project Assessment Conclusion Report
PAD	Project Approval Document
PCR	Project Change Request
PPR	Post Project Review
RAM	Risk Assessment Methodology
SFAIRP	So Far As Is Reasonably Practicable
RAM	Risk Assessment Methodology
OFS	Option Feasibility Study
OIL	Optimised Investment List
H/AM	Head of Asset Management
H/ID	Head of Infrastructure Delivery
H/PD	Head of Project Development
H/DPP	Head of Delivery Portfolio Planning
H/Reg	Head of Regulation
H/FIR	Head of Finance & Investor Relations
H/NO	Head of Network Operations
H/P&E	Head of Property and Environment
WD	Works Delivery

18. Appendix

Appendix A — AER project reasons and categories

Appendix B — Project probability estimate and allocation level

Appendix C — Responsible, Accountable, Consulted, Informed (RACI)

Appendix A – AER Project Reasons and Categories

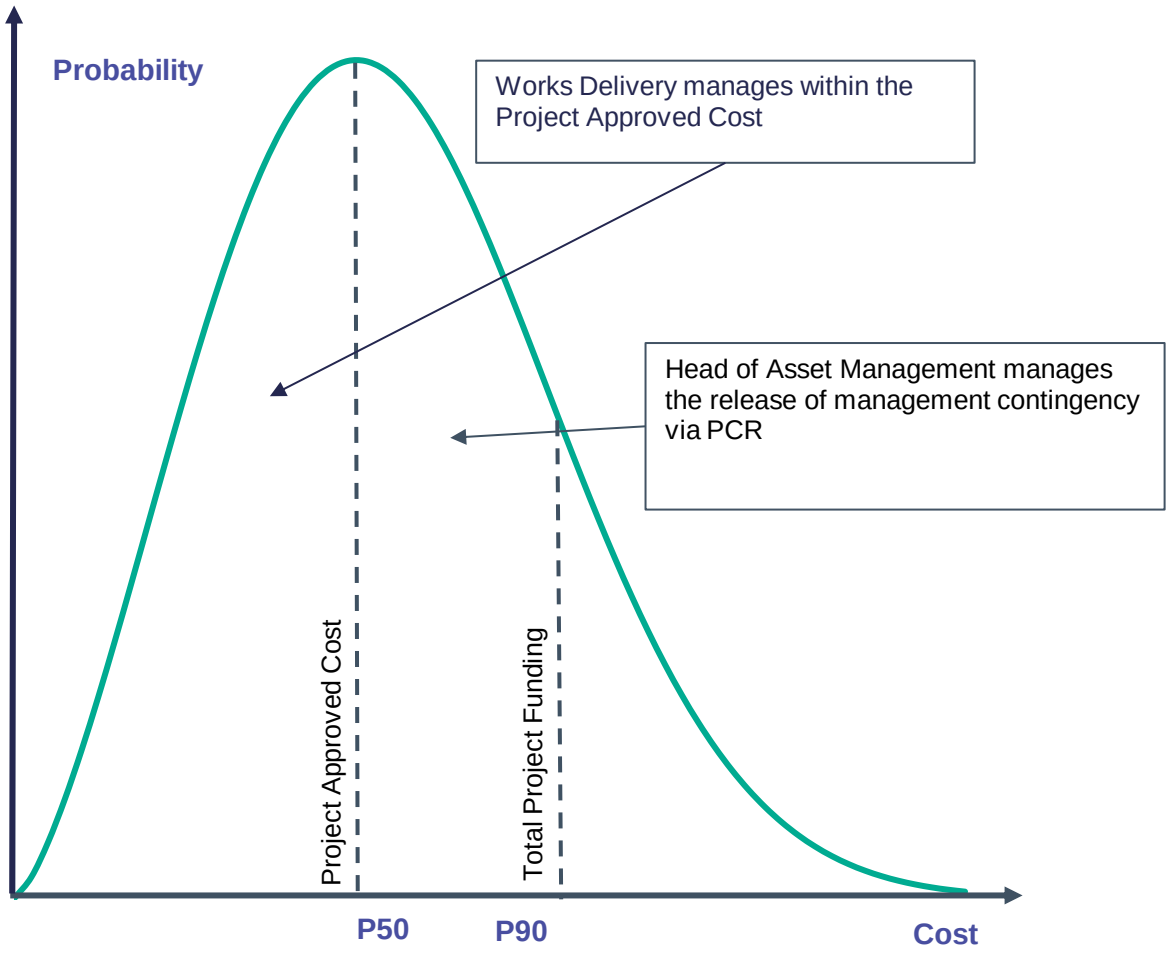
Project Reasons

- Capability
  - Asset replacement for end of life condition
  - Obsolescence/manufacturer support withdrawn
  - Improved asset management
- Economic efficiency
  - Network development to achieve market benefits
- Imposed standards
  - SCADA installation to meet NER requirement
  - Quality of supply installation to meet NER requirements
  - Control systems to meet NER requirements
  - Communications systems to meet AEMO requirements
  - Equipment upgrade to meet AEMO requirements
- Reliability
  - To meet connection point reliability requirements
  - To meet overall network reliability requirements
- Other
  - Customer request
- Compliance
  - Regulatory obligation
  - PCB contaminated
  - Security
- ICT
  - ICT asset upgrade or replacement
  - ICT augmentation
- Support the business
  - Facilities upgrade or replacement
  - Facilities augmentation
  - Other

Project Categories

- Network
  - Augmentation
  - Repex
  - NCIPAP
  - Security/compliance
- Non-Network
  - Information Technology
  - Facilities
  - Motor vehicles
  - Other

Appendix B - Project probability estimate and allocation level (excluding contingent projects)



Appendix C - Responsible, Accountable, Consulted, Informed (RACI)

For Ex-ante Network Related Projects

Output	Activity	H/AM	H/NP	H/NO	H/P&E	H/ID	H/PD	H/FIR	H/DPP	H/Reg
NOSA	Develop Need/Opportunities and perform options screening assessment (NOSA) (Repex)	A/R	C	I	I	I	C	C	I	
	Develop Need/Opportunities and perform options screening assessment (NOSA) (Augex/ NCIPAP)	C	A/R	I	I	I	C	C	I	
OFS	Conduct option feasibility study (OFS) and provide estimated capex to the business (AM or NP) to enable options evaluation	C	C	C	C	C	A/R			
OER	Develop Repex OER	A/R	I			I	I		I	
	Develop Augex/ NCIPAP OER	C	A/R			I	I		I	
	Creation and manage projects in PPM upon Approval of OER	C	C			A/R	I	C	I	
OIL	Perform investment optimisation for Augex/NCIPAP and Repex Projects	A/R	C	C	I	C	C	I	I	
DG1 (Emerging)	Decision Gate 1 (Based on delegated FPA)	A/R	C			I	I	I	I	
OIL	Prioritisation of the projects being developed and/or delivered based on outage constraints, resources constraints, and other delivery constraints	C	C	C	C	A/R	C		I	
DG1 baseline	Setting DG1 Baseline	I				A/R	C	C	I	
RIT-T	Undertaking RIT-T process	C	C			C	C			A/R
CSR	Develop Concept Scoping Report (CSR)	C	C	C	C	C	A/R		I	
PAD/DG2	Project Approval Document (PAD) (Based on delegated FPA)	A	I			R	C	I	I	
DG2 baseline	Setting DG2 Baseline	I				A/R	C	C	I	
Asset In-Service	Preparation of pre-energisation checklist and Assets placed In-Service	I	I	A		R			I	
Asset Capitalisation	Capitalise asset upon Asset In-Service	A	I			R		R	I	
Post Project Review Meeting	Undertake Post-Project Review Meeting and issue minutes	C	C	C	C	A/R	C	C	C	
Project Close Out Report	Prepare Project Close Out Report	A	I			R		C	I	

Output	Activity	H/AM	H/NP	H/NO	H/P&E	H/ID	H/PD	H/FIR	H/DPP	H/Reg
PCR (based on FPA)	Concept Owner Directed	A/R	R			C	I	I	I	
	Other than Concept Owner Directed	A	C			R	I	I	I	
Change Register	Management of Change Register	I	I			A/R	C	I	I	

For Contingent Projects

Output	Activity	Project Director	H/AM	H/NP	H/NO	H/P&E	H/ID	H/PD	H/FIR	H/DPP	H/Reg
NOSA – DG1	As per pervious										
DG1 baseline	Setting DG1 Baseline	A/R	I						C		
Pre-DG1 Board Paper	Preparation of Pre-DG1 Board Paper for Board Approval	C	A/R	C					C		C
RIT-T	Undertaking RIT-T Process	R	C	R	I	I		C			A
Board Paper	Preparation of Board Paper for proceeding with Contingent Project Application	A/R	C	C					C		C
Contingent Project Application	Preparation of Contingent Project Application	R	C	C					C		A
CSR	Develop Concept Scoping Report (CSR)	A/R	C	C			C	C			
PAD/FID/DG2	Project Approval Document (PAD) (Based on delegated FPA)	A/R	C	I			I	I	I	I	I
DG2 Baseline	Setting DG2 Baseline	A/R	I				I	I	C	I	
Asset In Service	Preparation of pre-energisation checklist and Assets placed In-Service	R	I		A		I	I		I	
Asset Capitalisation	Capitalise asset upon Asset In-Service	C	A						R	I	
Post Project Review Meeting	Undertake Post-Project Review Meeting and issue minutes	A/R	C	C	C				C	I	C
Project Close Out Report	Prepare Project Close Out Report	R	A	C					C	I	
Project Needs Achieved	Inter-regional testing	A/R	I	C	C						
PCR	Concept Owner Directed	A	C	R					C	I	
PCR	Other than Concept Owner Directed	A/R	C	C					C	I	
Change Register	Management of Change Register	A/R	I	I					I	I	

Where there is an A/R the positions delegate is responsible with the manager accountable