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Goldfields Gas Pipeline

December 15, 2023

Asset Performance & Lifecycle Plan



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1. Introduction

Purpose

This Asset Performance & Lifecycle Plan presents a summary of the key aspects of management activities with respect to the Goldfields Gas Pipeline (GGP), which is owned by the Goldfields Gas Transmission Joint Venture (GGT). This document has been prepared by APA on GGT's behalf.

The plan is a collaborative document where operational excellence process owners provide a snapshot of the performance of the asset and detail any necessary actions required to meet or maintain the assets key objectives.

Scope

This document is specific to the GGP as outlined in WA Pipeline Licence PL 24, which is granted under the provisions of the Petroleum Pipelines Act 1969 (WA).

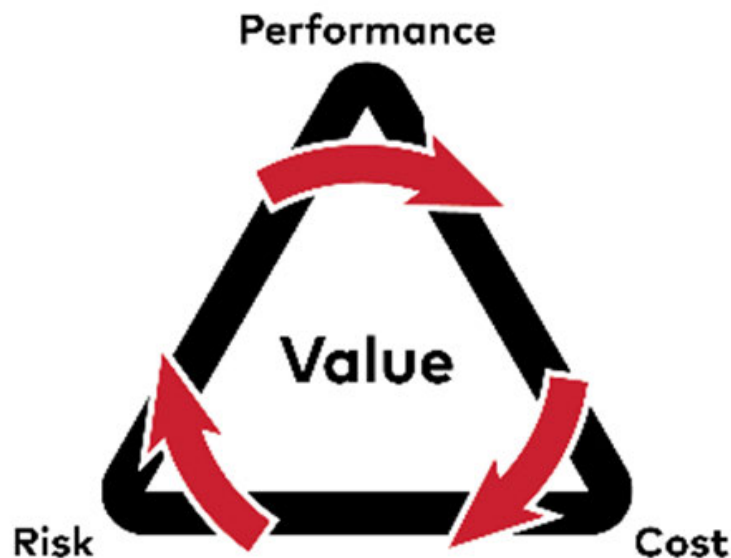
The GGP comprises the 1,378-kilometre transmission pipeline that spans from Yarraloola in Western Australia's Pilbara region to Kalgoorlie in the Goldfields-Esperance region together with the 47-kilometre Newman lateral.

Figure 1 Map of the GGP



2. APA Asset Management

Asset Management is systematic and coordinated activities and practices through which APA optimally and sustainably manages its assets and asset systems, their associated performance, revenues, risks, and expenditures over the asset life cycles for the purpose of achieving its organisational strategic plan.



APA's Asset Management (AM) Department is the custodian for all of APA's managed assets nationally, including the GGP.

Operational Excellence

Operational Excellence is a mindset that embraces certain principles and tools to create sustainable improvement within an organisation. It is a continuous improvement methodology to remove waste, focus on value, and enhance capability of operations.

Operational Excellence ensures APA executes its business strategy more effectively, efficiently, and consistently than its competitors, extracting maximum value from APA's Assets for its customers and shareholders. Realising competitive advantage, best practice operations and supporting growth through the following operational excellence pillars:

- Exceeding customer expectations through reliable service to market and leading product offerings.
- Strategic alignment of business priorities realising long term business value whilst balancing risk, cost, and performance.
- Performance monitoring and management against SMART metrics.
- Innovation and continuous improvement aligned with value-ease and benefits realisation framework.
- High performing teams where APA have access to the right people at the right time, working in a positive culture and employee experience.

Figure 2 Operational Excellent Framework



Operational Excellent Processes

APA has identified 38 business processes that integrate to ensure our assets are operated, maintained and improved to maximise value in a safe, compliant and effective manner.

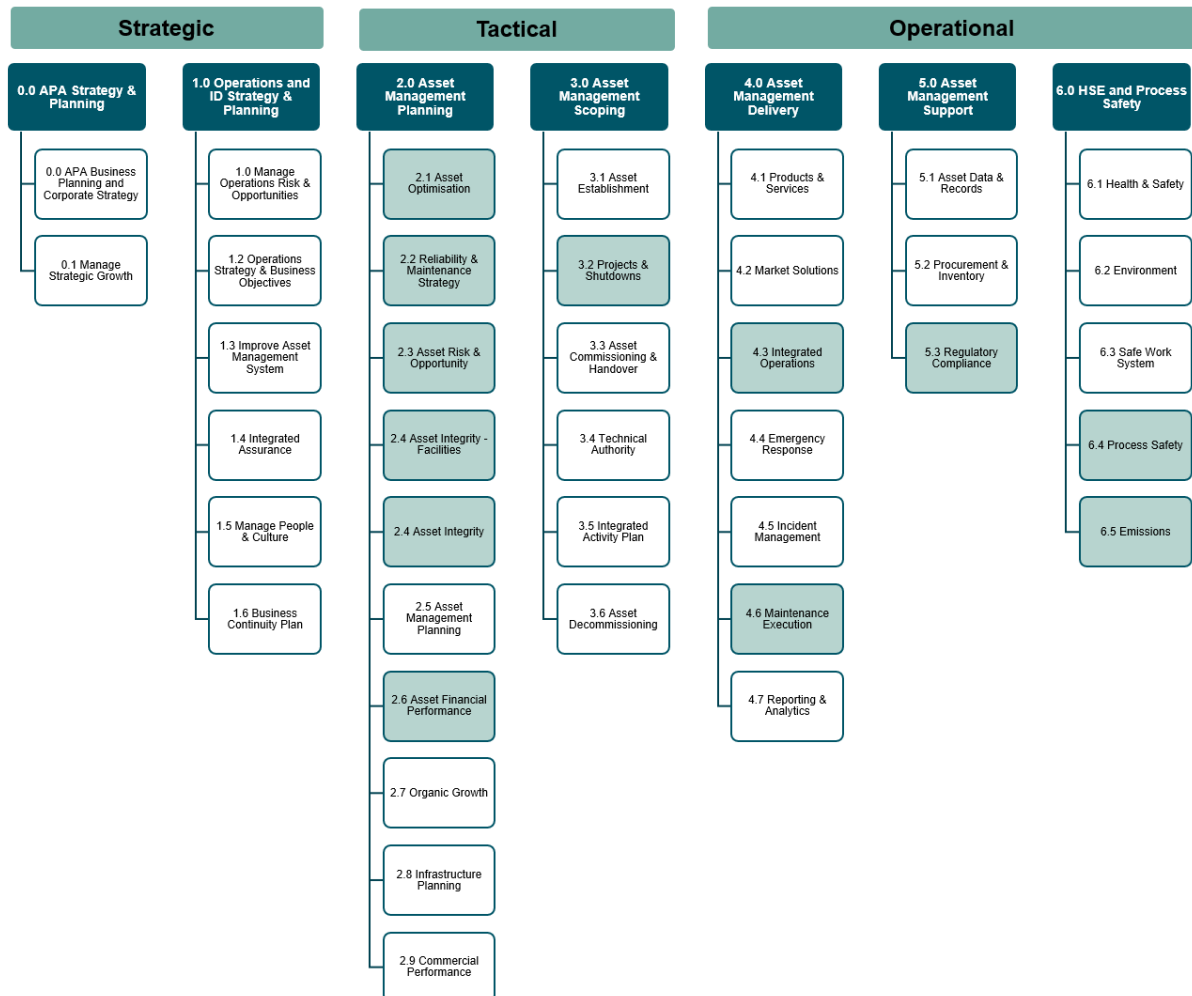
The purpose of defining these processes is to ensure:

- Clear alignment of purpose.
- Clear ownership of key processes.
- Integration of activities across teams to minimise risk and waste.
- Prioritisation of improvement initiatives (roadmaps and governance).

Definitions include the approved purposes and deliverables for each process as well as the agreed key performance metrics used to measure performance.

Figure 3 outlines the business processes. It also highlights the 12 key business processes monitored in monthly asset performance meetings.

Figure 3 Business Processes



Asset Performance Monitoring

Insightful performance monitoring is critical for driving strategic business decision making practices to achieve Operational Excellence.

Performance requirements include:

- Monitoring and reviewing key performance indicators at frequencies defined in the relevant process definition.
- Each asset's management team considering corrective action where an asset's performance indicates it is significantly off track to meeting its strategic objectives.
- Where the performance metric indicates a national issue, corrective actions MUST be escalated to the General Manager or owner of that business process.

Figure 4 GGP Asset Performance Matrix

Process	Process Results by Period											
	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23
Process Safety	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Financial Performance	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Maintenance Execution	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Integrity - Linear	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Integrity - Facilities	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Regulatory Compliance	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Reliability and Maintenance Strategy	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Projects and Shutdowns	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Optimisation	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Emissions	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Risk and Opportunity	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Integrated Operations	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

Asset Lifecycle Management

Lifecycle management involves the identification and treatment of risks and opportunities and the allocation of APA’s Stay-in-business (SIB) capital budget over a 20-year window.

It is a tactical component of the *Develop & Implement Asset Management Plans* business process. However, projects are typically initiated under the *Manage Asset Risks and Opportunities* business process where physical and performance issues which threaten the safe and reliable operation of the assets are identified.

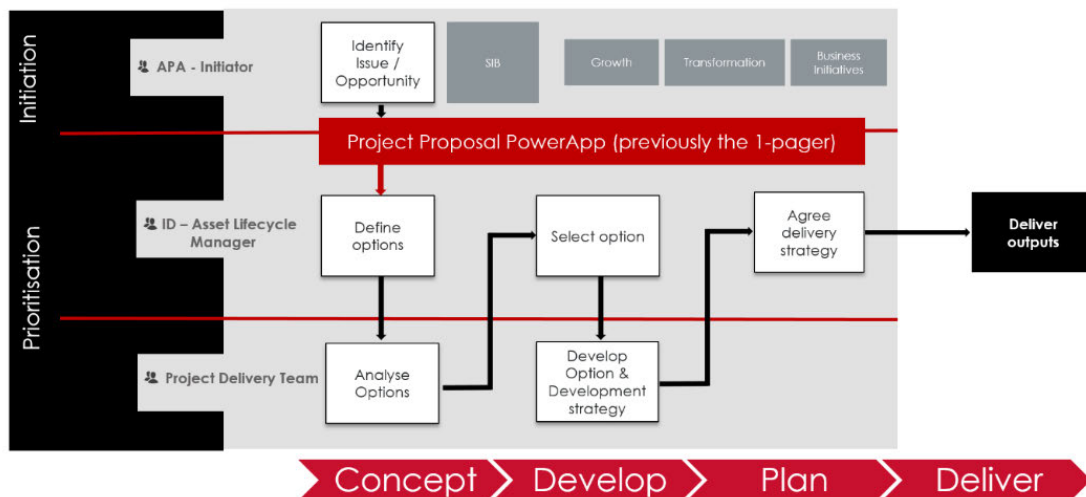
Project Identification and Selection

Operational data and integrity inspections provide much of the long-term planning; however, the process accepts additional proposals from operating departments. These typically relate to short and medium-term integrity-based activities such as operating hours-based overhauls, asset condition rectification and risk management mitigation initiatives.

SharePoint databases manage this information, and the input is collected through a proposal form which has been specifically designed to collect the information to enable a thorough understanding of the scenario and its impact for processing.

Where the issue is complex additional information in the form of a business case may be attached. Additionally, opportunities to improve the assets may also be received. These are managed in parallel to the risk-based projects and utilise similar assessment criteria.

Figure 5 Project Proposal Lifecycle Map



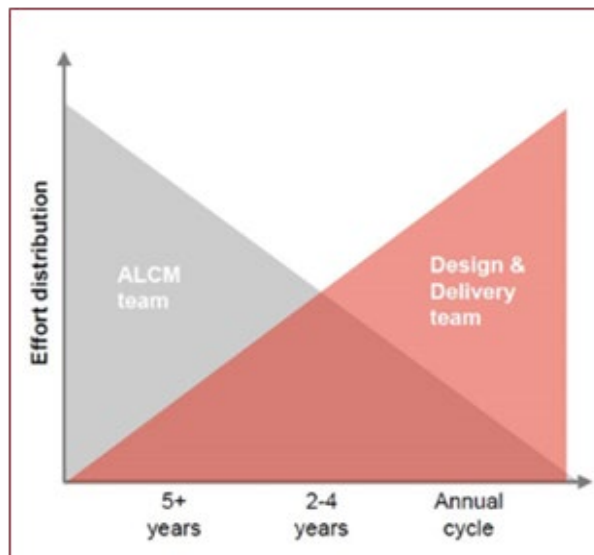
Delivery management

Capital projects are typically delivered by APA's Infrastructure Projects team, within the Engineering and Planning business unit. Projects may also be delivered by the Infrastructure Construction group or by Operations & Maintenance depending on the nature of the project.

Throughout the year the delivery of projects is reviewed and expenditure is re-forecast monthly. The delivery teams operate independently, and separate governance meetings are held monthly to ensure scope, schedule and budget milestones are being met.

The Lifecycle team take any variations taken into consideration and may add projects to or defer projects from the annual scope, as necessary.

Figure 6 Effort distribution and ownership of projects



3. Key Operational Excellence Processes

Key Operational Excellence business processes which apply to the GGP are discussed below.

Asset Optimisation

The purpose of the *Asset Optimisation* business process is to plan and manage the operational performance of our assets to deliver customer services within safe operating limits. It involves proactive identification and mitigation of reliability or revenue impacting events as well as identification of improved efficiencies to drive positive financial and operational outcomes.

The *Asset Optimisation* business process considers the asset strategy and market demand when developing and managing Optimisation Project Proposals.

Key Performance Indicators are outlined in the *Asset Optimisation* business process and discussed monthly in Asset Performance Meetings and other forums.

Figure 7 Asset Optimisation KPIs

Group KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Annual Revenue / Capacity Optimisation Plan	The monthly review and progress of identified improvement opportunities that benefit asset revenue and/or asset capacity improvements within agreed timeframes.	Group Level	Opportunities defined, agreed and in-flight. Benefits realisation on-target	Opportunities defined, agreed and in-flight. Benefits realisation behind target	Opportunities identified without plan to implement or track

Gas Infrastructure - Transmission KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Compressor Efficiency	Measures the efficiency of the compressor stations. GJ of fuel gas used for compression per TJ of gas receipted, reported as an emissions intensity.	Asset Level KPI is asset specific	Actual ≤ Target % (Asset Specific)	Actual >Target & ≥ 99% (Asset Specific)	Actual < 99% Target (Asset Specific)

Reliability and Maintenance Strategy

The *Reliability and Maintenance Strategy* business process ensures equipment is available when needed while minimising risks of equipment failure through the effective and efficient implementation of reliability and maintenance strategies.

APA have adopted a Reliability Centred Maintenance (RCM) strategy which is focused on providing a consistent corporate level maintenance strategy based on a reliability-based philosophy, with the aim to improve safety, reliability, and efficiency to APA's Operations. RCM will deliver improved equipment reliability by applying the correct level of maintenance effort, consistency and focus against equipment appropriate to its level of criticality to the business.

Reliability Centred Maintenance (RCM) is a proactive, risk-based approach to maintenance that helps identify and prioritise maintenance activities based on the criticality of equipment and systems, ensuring that the right maintenance is done at the right time to maintain equipment reliability and availability and delivery cost effective outcomes. It is based on the idea that equipment should be maintained in a way that addresses the root causes of failure, rather than simply fixing problems as they arise.

RCM involves analysing the equipment and systems to identify the possible failure modes and their causes, determining the consequences of those failures, and choosing the maintenance activities

that will minimise the likelihood of those failures. The goal of RCM at APA is to minimise equipment downtime, reduce maintenance costs, and improve overall equipment reliability.

Figure 8 Reliability & Maintenance Strategy KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Lag: Trend High/Ext Reliability Incidents	# High/extreme criticality Reliability Incidents ¹ (12 month rolling trend)	Group Level	<5	6-10	>10
Lead: Trend High/Ext Reliability Near Misses	# High/extreme criticality reliability near misses ² (12 month rolling trend)	Group Level	<5	6-10	>10
Lag: Number of Incidents per Asset	# Reliability incidents ¹ (all criticality levels) per asset for given month	Asset Level	0 incidents High or Ext criticality assets AND ≤5 incidents Mod criticality assets AND ≤7 incidents total any criticality levels	1-5 incidents High or Ext criticality assets OR 6-10 incidents Mod criticality assets OR 8-15 incidents total any criticality levels	>5 incidents High or Ext criticality assets OR >10 incidents Mod criticality assets OR >15 incidents total any criticality levels
Lead: Number of Near Misses per Asset	# Reliability near misses ² (all criticality levels) per asset for given month	Asset Level	≤3 near misses High or Ext criticality assets AND <10 near misses total any criticality level	4-10 near misses High or Ext criticality assets OR 10-15 near misses total any criticality level	>10 near misses High or Ext criticality assets OR >15 near misses total any criticality level
Overall Score	Group Level		All assets green	Any asset amber, no red	Any asset red
	Asset Level ³		Any group KPIs green	Any amber group KPI, no red	Any red group KPI

Asset Integrity Linear

The *Asset Integrity - Linear* business process maintains the physical life of our linear assets (e.g., hydrocarbon pipelines and electrical transmission) to ensure the safety of our employees, contractors and the general public and security of supply. Most transmission assets are exposed to corrosion, cracking, fatigue, stress related failure, vibration, wear, third party damage and other degradation.

The purpose of this business process is to:

- Develop operating and maintenance strategies to balance cost with maintaining asset life.
- Integrate asset maintenance, data collection with lifecycle planning to continuously improve integrity management plans and proactively ensure the life of our assets.
- Actively monitor and assure the *Manage Asset Integrity* business process, measure performance against KPIs and takes corrective action to balance cost and improve performance.

Figure 9 Asset integrity Linear KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
MOP Management	Unplanned MOP The number of Unplanned Events ¹ in a reporting period Manually Recorded	Group Level	All pipelines at planned MOP	Any pipeline remaining at unplanned MOP at the end of the reporting period (having entered into the MOP reduction in a preceding month)	Any pipeline entering into unplanned MOP during the reporting period.
		Asset Level	All pipeline sections at planned MOP	n/a	Any pipeline section entering into a new unplanned MOP during the reporting period or Any pipeline section remaining at unplanned at the end of the reporting period
CP Management	CP Levels Cathodic Protection (CP) levels per AS2832.1 are within acceptable limits for each asset CP Visualisation Dashboard (Power BI)	Group Level	National ² weighted average protection is >95% for the period	National Weighted Average Protection < 95% & > 85% for the period	National Weighted Average Protection ≤ 85% for the period
		Asset Level	Weighted average protection ≥ 95 % for the period	Weighted average protection < 95% & > 85 % for the period	Weighted average protection ≤ 85 % for the period
	Specified³ / Major⁴ Encroachment incidents, investigations and corrective actions	Group Level	All sub-indicators green	Any amber, no red sub-indicator	Any red sub-indicator

KPI Name	KPI Information	KPI Level	Green	Amber	Red
External Interference Management	<u>Rolled-up sub-indicators</u>	Asset Level	All sub-indicators green	Any amber, no red sub-indicator	Any red sub-indicator
	KPI sub-Indicators				
	External Interference Events Number of specified encroachments during a reporting period. As reported in Maximo.		No Specified encroachment during the reporting period	Any Major encroachment without asset strike during the reporting period	Any Specified encroachment with asset strike during the reporting period
	External Interference Investigations The root-cause of the specified encroachment has been identified in Maximo within the agreed timeframe ⁵		As at the end of the reporting period all incidents > 4 weeks old have a known root-cause	As at the end of the reporting period there are incidents >4 weeks and ≤6 weeks with an unknown root-cause	As at the end of the reporting period there are incidents >6 weeks with an unknown root-cause
	External Interference Corrective Actions Open actions in Maximo resulting from any Specified encroachment investigation are under appropriate management		No overdue actions at the end of the reporting period	All actions are on-time or < 4 weeks overdue at the end of the reporting period	Any actions overdue > 4 weeks at the end of the reporting period

Asset Integrity Facilities

The *Asset Integrity – Facilities* business process ensures the safety of our employees, contractors, and the public; uphold regulatory compliance and security of supply by maintaining the integrity, safety, and physical life of pressure equipment assets at APA facilities.

Pressure equipment assets are exposed to numerous damage mechanisms including corrosion, cracking, fatigue, stress related failure, vibration, wear, third party damage and other degradation.

Safety and compliance are maintained via ongoing integrity monitoring.

We actively monitor pressure equipment and measure performance against KPIs delivering preventive and corrective actions that balance risk, cost, and improved performance.

Figure 10 GGP Asset Integrity Facilities KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Facility Integrity PSV/PE Regime Completion	Are we completing our safety critical PSV & PE inspection work orders on-time -	Group Level	< 95% (based on rolling 12 month average)	>80%; <95% (based on rolling 12 month average)	< 80% (based on rolling 12 month average)
	PSV & PE completion at the end of the reporting period (i.e. did it fall due this month at any time and was it completed before the end of the month)	Asset Level	< 95% (based on rolling 12 month average)	>80%; <95% (based on rolling 12 month average)	< 80% (based on rolling 12 month average)
Facility Integrity PSV/PE Backlog Management	Are we completing our safety critical PSV & PE inspection work orders on-time	Group Level	<=5% (as at the end of reporting period)	>5%<10% (as at the end of reporting period)	>=10% (as at the end of reporting period)
	Cumulative number of overdue WOs at the end of the reporting period compared against the number open PE & PSV WO's Note:1	Asset Level	<=5% (as at the end of reporting period)	>5%<10% (as at the end of reporting period)	>=10% (as at the end of reporting period)

Projects and shutdowns

The purpose of the *Projects and Shutdown* business process is to ensure the safe and efficient delivery of greenfield and brownfield project work. This business process supports effective asset modification, asset expansion, new asset construction as well as major shutdown maintenance in alignment with the asset's strategy, stakeholder (including customer) expectations and the applicable project or shutdown management framework.

This business process applies to projects funded as Growth, Stay-In-Business (SIB), Third Party (customer funded) capital works projects and major shutdown maintenance on APA's infrastructure. This business process is applicable to any project on an APA asset regardless of funding type or responsible delivery team.

Projects and Shutdowns includes scoping, planning, design and execution of projects and shutdowns in accordance with the asset management plan, approved budget, project management framework, shutdown management standard and applicable commercial arrangements. Projects must deliver benefits as assessed and agreed at the outset of each project and benefits realisation is to be managed over the lifecycle of the project.

Completion and handover of project work must follow the agreed project management framework, the *Asset Commissioning and Handover* business process and the Shutdown Completion System.

Figure 11 Projects and Shutdowns KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Project Schedule	Projects are on track to achieve their agreed Asset Critical Milestone (ACM) ¹ dates.	Group Level	>90% of scheduled ACMs are scheduled on or before their Approved Date	≥10% scheduled ACM date(s) exceed their Approved ² Dates	≥10% of scheduled ACM dates exceed its Approved ² Date and the Approved Dates are in the past
		Asset Level	All scheduled ACM date(s) are within the approved date(s)	1 or more scheduled ACM date(s) exceed its Approved ² Date and the Approved Date is in the future (i.e. later than the reporting period).	1 or more scheduled ACM dates exceed its Approved ² Date and the Approved Date is in the past
Project Risk	Project risks are managed within APA's risk tolerance.	Group Level	No residual risks assessed as "High" or "Extreme"	1 or more residual risk assessed as "High", no "Extreme" risks	1 or more residual risks assessed as "Extreme"
		Asset Level	Not measured		
Project Finance ⁵	Projects and Shutdown actual expenditure is within approved budgets and forecast expenditure is on track.	Group Level	SIB capital expenditure for the current Financial Year is within ±5% of the Board approved budget.	SIB capital expenditure for the current Financial Year is between ±5% and ±10% of the Board approved budget.	SIB capital expenditure for the current Financial Year is beyond ±10% of the Board approved budget.
		Asset Level	Not measured		
Overall Score	Group Level		All group KPIs green	Any group KPIs amber, no red	Any red group KPIs
	Asset Level		All asset KPIs green	Any asset KPIs amber, no red	Any red asset KPIs

Risk and Opportunity

The *Asset Risks and Opportunities* business process ensure assets are being managed to achieve the strategic objectives. These objectives allow us to extract maximum value from assets by balancing performance and cost with risk.

Risks are considered those things that will stop the asset achieving its objectives and opportunities being those things that assist in exceeding objectives.

Risk and opportunity management involves identification of the risks and opportunities as well as getting agreement on ownership and accountability for each. Consistent analysis and assessment of both risks and opportunities ensures risks are managed within the APA risk appetite and that appropriate controls are in place and treatment actions are established.

A mechanism is in place to enable risk-based decision making and the effective allocation of resources as well as provision for the reporting and escalation of risks as required. A structured business process also exists to scan the external environment, industry changes, incidents, and other indicators of risk to establish emerging risks and opportunities.

To monitor success of these business processes, KPIs for the *Asset Risk and Opportunity* business process are applied as per Figure 12.

Figure 12 Risk and Opportunity KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Key Risk Management	Key risks are identified as any risks that satisfy one or more of the following criteria: a. a risk with a current residual rating of moderate or above; or b. a risk with an inherent rating of high or extreme residual	Group Level	All Key risks are within Target ²	All Key ³ risks outside Target ² have a Mitigation Plan in place with no overdue actions.	Any Key ³ risks outside Target ² with no Mitigation Plan in place or with overdue actions.
Risk¹ Identification & Review (including emerging issues)	Risk Register reviewed and updated within required timeframe	Asset Level	All asset risks reviewed within previous 10 months	All asset risks reviewed within previous 12 months	> 12 months since last review of any strategic assets risk.
Risk¹ Control Establishment	Actions and controls for known risks are agreed and in place to achieve required Target ² risk.	Asset Level	All (moderate or above) residual risks above their Target ² have a Mitigation Plan established	Any moderate residual risk with no MP agreed to achieve Target	Any above residual moderate risk with no MP agreed to achieve Target
Action Management	All open actions within a Mitigation Plan are on schedule	Asset Level	No overdue actions	Any overdue actions where current residual risk is within Target ²	Any overdue actions where current residual risk is outside Target ²
Overall Score	Asset Level		All KPIs green	No red, any amber KPI	Any red KPI
	Group Level Based on aggregated asset performance		All KPIs in green across all assets	No asset KPIs in red, any amber asset KPI	Any red asset KPI

Emissions

The purpose of the *Emissions Management* business process definition is to work towards appropriate emissions reduction targets as part of the overall Net Zero target.

The business process includes understanding the emissions profile of each asset (including seasonal fluctuations and emissions drivers) and reviewing potential opportunities to manage asset emissions, including optimisation of asset operation.

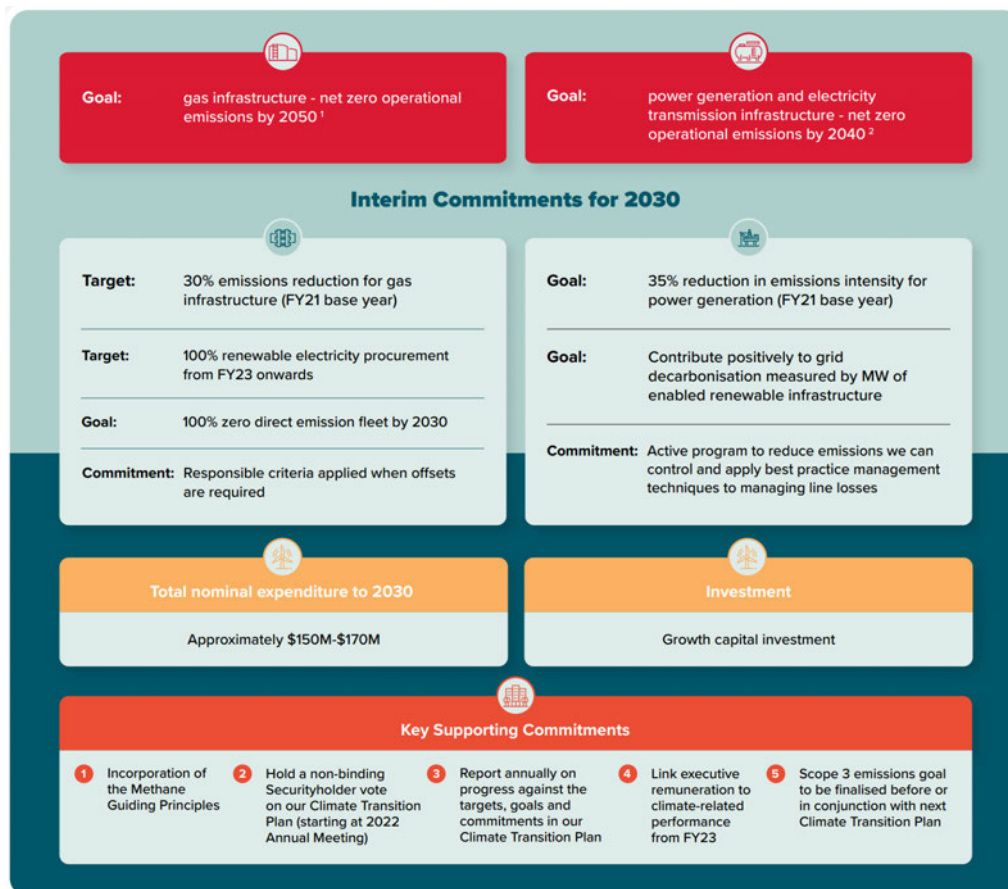
Emissions management strategies specific to each asset have been developed as well as achievable emissions budgets that demonstrate a path to the emissions targets set by Net Zero and interim targets aligned with organisational level targets and trajectories.

Emissions management provides a structured business process to review baselines when significant changes occur to assets, customer, and energy volumes. At least one annual review takes place.

Figure 4.6.2 Emissions KPIs

KPI Name	KPI Information	KPI Level	Green	Amber	Red
All Assets Meeting Emissions budgets – Absolute tCO₂e	Absolute Emissions Actual emissions In line with emissions budget on a YTD basis* <i>Note: Gas transmission assets which do not currently declare fuel gas consumption as part of the monthly reporting process are not included in current reporting.</i>	Group Level	Achieve Budget	< 10% above Budget	>10% above Budget
		Asset Level	Achieve Budget	< 10% above Budget	>10% above Budget
Gas Assets Meeting Emissions budgets – Intensity tCO₂e/GJ	Gas Infrastructure Emissions Intensity Emission intensity in line with intensity budget on a 12-month Rolling Average basis*, where intensity is defined by the actual emissions in tCO ₂ e divided by the entry allocation of the given pipeline in GJ. <i>Note: Gas transmission assets which do not currently declare fuel gas consumption as part of the monthly reporting process are not included in current reporting.</i>	Group Level	Achieve Budget	< 10% above Budget	>10% above Budget
		Asset Level	Achieve Budget	< 10% above Budget	>10% above Budget

Figure 4.6.13 APA's commitments to supporting Australia's energy transition.



Maintenance execution

The goal of the *Maintenance Execution* business process is to execute the preventive maintenance programme in line with agreed priorities and in accordance with applicable technical and regulatory standards. This business process also ensures we respond to system faults, equipment breakdowns and emergencies to best support continued delivery of customer commitments and ensures appropriately skilled and competent personnel are completing work in an optimised manner.

The objective of this business process is to produce an integrated proactive and reactive work plan so that repair work is minimised, and reliability and availability of equipment is optimised. The *Maintenance Execution* business process will deliver from a list of prioritised activities, executed safely in respect of people, contractors, environment, and the community.

The end-to-end process of execution of maintenance activities including planning, scheduling and execution is monitored and reviewed for opportunity to improve effectiveness of execution and support balanced decisions regarding equipment maintenance strategies.

Figure 14 Maintenance Execution KPI's

KPI Name	KPI Information	Green	Amber	Red	Forum/ Frequency
Maintenance Programme Completion ¹	Number of preventive maintenance work orders falling due in, and completed by the end of, the reporting month compared against the total number of preventive maintenance work orders falling due in the same reporting month (traffic light based on a 12-month rolling average of monthly % results).	Group Level			OPM ³ [monthly]
		>= 85%	>65%, <85%	<=65%	
		Asset Level			APM ⁴ [monthly]
		>= 85%	>65%, <85%	<=65%	
Compliance Backlog Management ²	Number of Compliance ⁶ work orders in Overdue ^{4,7} status at the end of the reporting month compared against the total number of Open ³ Compliance ⁷ work orders.	Group Level			OPM ³ [monthly]
		>= 5%	>5%, <10%	>=10%	
		Asset Level			APM ⁴ [monthly]
		>= 5%	>5%, <10%	>=10%	
Preventive Backlog (PM) ^{1,2}	Number of PM work orders in Overdue ⁴ status at the end of the reporting month compared against the total number of Open ³ PM work orders.	Asset Level			APM ⁴ [monthly]
		<=15%	>15%, <35%	>= 35%	
		Asset Level			APM ⁴ [monthly]
		<=15%	>15%, <35%	>= 35%	
Corrective Backlog (CM) ^{1,5}	Number of CM work orders in Overdue ⁴ status at the end of the reporting month compared against the total number of Open ³ CM work orders.	Asset Level			APM ⁴ [monthly]
		<=15%	>15%, <35%	>= 35%	
		Asset Level			APM ⁴ [monthly]
		<=15%	>15%, <35%	>= 35%	
Overall Score	Group Level <small>Generated based on Maintenance Programme Completion and Compliance Backlog Management KPI results only.</small>	All green	No red, any amber	Any red	OPM
	Asset Level <small>Generated based on Maintenance Programme Completion, Preventive Maintenance and Compliance Backlog Management KPI results only.</small>	Any group KPIs green	Any amber group KPI, no red	Any red group KPI	APM

Regulatory compliance

The purpose of the *Regulatory Compliance* business process is to ensure all assets are being managed and operated in accordance with legislative obligations. Regulatory Compliance ensures that reporting and management of regulatory compliance activities align with APA's Group Risk and Compliance standard and the APA Risk Appetite for compliance.

All applicable legislation, regulation, standards, and associated reporting requirements are identified and accountability for obligations and associated actions are defined and reviewed consistently. The regulatory compliance business process ensures adequate systems and processes are in place to manage a register of obligations, regulatory documentation, mandatory compliance reporting, scheduled and ad hoc reporting to regulators.

APA's regulator relationships are managed as part of this business process, through proactive regulator meetings. Internal & external technical compliance audit programs, audit action management and the interface to industry for regulatory/standard changes are also managed via this business process.

Figure 15 Regulatory Compliance KPI's

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Regulatory Submissions and Obligations	This measure looks to see if we are submitting our priority regulatory obligations on time.	Asset Level	All regulatory submissions on track	Any overdue submissions of Priority 2 or Priority 3 regulatory obligations at the end of the reporting period	Any over due submission of Priority 1 regulatory obligations at the end of the reporting period
Regulatory Audit Outcomes	This measure looks at what (if any) findings resulted from regulatory audits during the reporting period.	Asset Level	No findings OR Only Opportunities For Improvement (OFIs) (low or negligible rated finding) identified during the reporting period	Any non-conformance (moderate rated finding) identified during the reporting period	Any major non-conformance (high or extreme rated finding) identified during the reporting period
Regulatory Action Delivery	This measure monitors our management of the other KPIs and looks at our management of any actions that resulted from audit findings and non-compliances on the asset.	Asset Level	<ul style="list-style-type: none"> <5 overdue actions relating to Opportunities For Improvement (OFIs) (low rating finding) AND <ul style="list-style-type: none"> All other actions on track 	<ul style="list-style-type: none"> Any open action relating to a PIN/Breach notice Any open action relating to a Major non-conformance (high rated finding) Any overdue action relating to self-reported non-compliance (medium rated finding) >5 overdue actions relating to OFIs 	<ul style="list-style-type: none"> Any overdue action relating to a Major non-conformance Any overdue action relating to a PIN/Breach notice

KPI Name	KPI Information	KPI Level	Green	Amber	Red
Non-Compliance / Regulatory Incident	This measure looks at what non-compliances occurred during the reporting month.	Asset Level	No newly identified non-compliances (breaches rated lower than significant) during the reporting period	Any non-compliance (breaches rated less than significant) during the reporting month	Any PIN/Breach notice (breaches rated significant or higher) received by a Regulator during the reporting period
Overall Rating	Based on worst outcome of each indicator.		All asset KPIs Green	Any asset KPIs amber, no red	One or more asset KPIs Red
	Overall group performance is taken from an aggregated assessment of asset performance Group Only		All KPIs in green across all assets	No KPI in red, any amber asset KPI	Any red asset KPI

4. Asset Summary

Asset Mission

GGT endeavours to ensure reliability of gas supply for the Pilbara and Goldfields regions. We work with our stakeholders by providing innovative and competitive options to support our existing customers, customer growth and our joint venture partners. GGT manages the integrity and safety of the assets such that capacity, reliability, and public safety are not compromised.

Key Objectives

- Continued reliable operation of the asset ensuring the safety of our people, the community and environment as well as the GGPs reputation.
- Maintain pipeline Maximum Allowable Operating Pressure (MAOP) and ensure reliability of supply for the GGP customers.
- Meet changing customer demands.
- Manage costs considering future demand for services.
- Maintain technical regulatory compliance.
- Match reliability to station criticality such that contractual commitments are met.

Customer expectations

The GGP supplies significant remote mining operations and power stations in the Pilbara and Goldfields-Esperance regions, where the value of mineral production is around \$130.0 billion and \$22.8 billion per year respectively.¹ The GGP also supplies gas to the Kalgoorlie gas distribution system which has around 7,500 small end-use customers.

As the GGP is a critical source of fuel, including for electricity generation, supply interruptions risk disruption to our customers operations and critical safety systems.

Our customers have told us that:

- reliability and security of supply is paramount given that:
 - while some customers have limited backup diesel generation capacity, their production processes come to a halt without access to gas.
 - supply interruptions lead to potential safety concerns from the shutdown of underground ventilation systems (with backup supply only offering sufficient ventilation for worker escape), risk of damage to critical equipment and risks associated with the unexpected shutdown of equipment.
 - supply interruptions lead to immediate and substantial financial consequences associated with any interruptions to their operations and production.
 - timely notification in the event of a supply interruption, as it plays a pivotal role in preparations to prevent facility damage.

¹ Department of Mines, Industry Regulation and Safety 2023, *2022-23 Spatial and Regional Resources Data File*, Available [here](#).

- Customers have distinct decarbonisation goals and are exploring or actively implement renewable energy sources, electrifying key industrial process leading to potentially lower overall consumption but higher capacity requirements.
- Affordability is also a priority given the challenge for customers to balance gas price volatility and the remaining operational life of their facilities against the economic feasibility of investing in renewables.

Asset details

The GGP's current capacity is 202.5TJ/d, based on a Higher Heating Value (HHV) of 37.0 MJ/m³. The WA Gas Supply (Gas Quality Specifications) Act 2009 allows gas with a minimum of HHV of 35.5MJ/m³ to be supplied, at which HHV the total capacity is 194.7 TJ/d.

Gas is receipted at three points. Two at Yarraloola from the Dampier to Bunbury Pipeline and Varanus Island and a third at Wildara from the Northern Goldfields Interconnect (NGI).

The GGP supply gas to several customers directly as well as through several laterals² and downstream pipelines, including the Eastern Goldfields Pipeline System at Leonora, and the Kalgoorlie to Kambalda Pipeline.

Compressor stations

There are seven compressor stations along the GGP equipped with one of more compressors sets which move gas through the pipeline. Electrical power at these remote stations is produced by Gas Engine Alternators (GEA's).

The rotating plant and criticality of each compressor station is summarised in Table 1. Further details are provided in Appendix B.

Table 1 GGP Compressor Station rotating plant and criticality

Compressor Station	Gas Engine Alternators	Compressor units	Criticality
Yarraloola	2 x GEA's	2 reciprocating compressors 1 x turbine compressor	High
Wyloo West	2 x GEA's	1 x turbine compressor	High
Paraburdoo	3 x GEA's	3 x turbine compressors	High
Turee Creek	2 x GEA's	2 x turbine compressors	Moderate
Ilgarari	2 x GEA's	2 reciprocating compressors	High
Neds creek	2 x GEA's	1 x turbine compressor	High
Wiluna	2 x GEA's	1 x turbine compressor	Extreme

² Including the Wiluna, Mount Keith, Leinster, Newman, Lake Way, Agnew, King of the Hills and Karlawinda Lateral. Only the Newman Lateral forms part of the GGP.

Mainline Valves

Mainline valves, strategically placed along the pipeline to control the flow of gas, isolate sections of the pipeline for maintenance or in case of an emergency. Mainline valves are installed at each scraper station, mid-way between each scraper station and at other key locations to maintain operational security and minimise risk to the community. All mainline valves can be manually controlled while those at key locations can be controlled remotely.

Scraper Stations

Scraper stations are installed to enable periodic internal inspection of the pipeline for defects. The spacing of a nominal 170 km is based on the capabilities of In-line Inspection (ILI) tools, which have a 200km maximum length of travel.

At the inlet station to the mainline or a lateral line, only a launcher for ILI tools is installed. At delivery stations, only a receiver is installed. At all other scraper stations, both a receiver and a launcher are installed.

All scraper stations on the GGP are designed to accommodate the addition of compressor stations with a minimum disruption to the operating equipment.

Maintenance Bases and accommodation blocks

The GGP has maintenance bases in Karratha, Newman, Kalgoorlie and Leinster. Due to the remote nature of the GGP, the compressor stations also have accommodation blocks for field staff.

Vehicles

Most vehicles on the GGP are leased, however several specialist vehicles are owned including 3 forklifts, 19 trailers and 3 heavy commercial vehicles. The forklifts and trailers were purchased and delivered during the construction of the GGP in the mid-1990s and are still in use. Our heavy commercial trucks have been replaced more recently (in 2016 and 2019).

Regulatory obligations

The GGP is subject to the requirements of the following legislation:

- Petroleum Pipelines Act 1969
- Petroleum Pipelines (Occupational Health and Safety) Regulations 2010
- Petroleum Pipelines (Management of Safety of Pipeline Operations) Regulations 2010
- Petroleum Pipelines (Environment) Regulations 2012

The GGP has been granted a licence (Licence 24), under Petroleum Pipelines Act 1969. This licence includes obligations, including that the pipeline is designed, constructed, tested, operated and maintained in accordance with AS 2885.

Pipeline Management System

AS2885.3 requires that the Licensee have in place a documented and approved Pipeline Management System (PMS) which provides instruction to the organisation regarding high pressure pipeline management and operation techniques. In Western Australia, pipelines are licensed subject to a Safety Case which performs the same function as the PMS drafted for pipelines outside of Western Australia and is subject to approval by the WA technical regulator (DIMRS).

The Safety Case (or PMS) provides the framework for a consistent and appropriate process throughout the business for all pipelines operating under AS2885. The PMS sets out an approved system to ensure that the asset integrity is known and risk is maintained to ALARP or better. The PMS has been audited and the content and approach of the PMS was found to be compliant to the requirements of the Standard.

Economic regulation

Of the pipeline's capacity of 202.5TJ/d, 109TJ/d is covered (subject to economic regulation) under the National Gas Access (Western Australia) Act 2009. An Access Arrangement, approved by the Western Australian Economic Regulation Authority (ERA) applies in respect of the covered capacity.

Emissions

The GGP emits around 120,000 tCO₂e a year and is subject to the safeguard mechanism.

The bulk of the GGP's emissions are incurred as a result of fuel gas usage for compression (80%) and GEAs (3%).

The remainder (17%) is incurred due to fugitive emissions. These are currently calculated using a benchmarking heuristic based on the length of the pipeline. As such, the reported quantity of fugitive emissions lacks the granularity to accurately represent the specifics of the GGP's design and operation. We intend on moving to a higher order methane measurement method, including component-specific emissions factors and, potentially, site measurements. This will improve the accuracy of our reported fugitive emissions and better enable emissions reduction benefits of abatement initiatives to be captured in reporting.

Compressor operating philosophy

Following the connection of the NGI, our asset optimisation and emissions business processes have been applied to develop a new compressor operating philosophy.

Compressor efficiency largely depends on two factors:

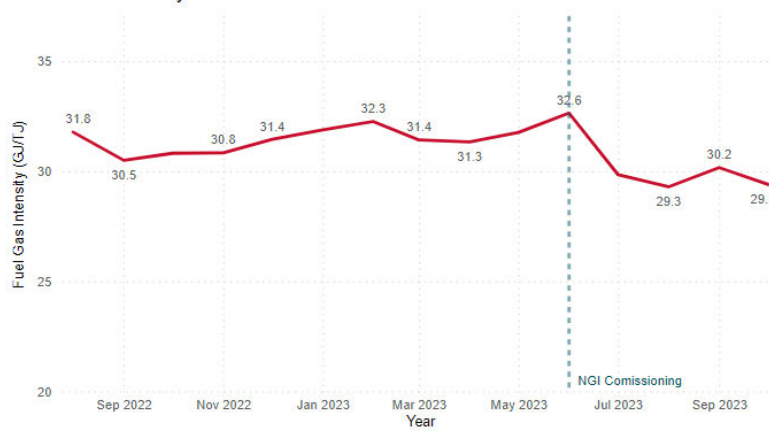
- The level of overall compression provided. Compression is reduced when gas received at the highest pressure possible and delivered at the lowest pressure possible. However, there is a trade-off as additional compression is required to ensure security of supply (in the case that a compressor trips or maintenance is required etc).
- The unit of fuel gas per unit of throughput provided. The overall efficiency depends on the run-order of compressors across the pipeline, which takes into account engine efficiency as well the location of the compression provided.

The NGI reduces the level of compression required and creates an opportunity to reduce emissions:

1. Through a reduction in overall compression and an overall reduction in fuel gas usage.
2. By optimising the compressor run-order to reduce the fuel gas intensity required to achieve a unit of compression.

Although we only have a few months of data since the NGI was commissioned, early results indicate that a new run-order will lead to reduced fuel gas consumption and in turn lower emissions.

Figure 16 Fuel gas intensity before and after NGI commissioning



Based on the new run-order we expect that we will:

- Use all turbine compressors on most days but with a reduced need for compression towards the southern end of the pipeline at Ned's Creek and Wiluna.³
- Reduce the use of the large reciprocating compressors at Yarraloola and Ilgarari. The role of these stations will shift towards being ready and available to maintain security of supply and ensure sufficient compression during maintenance or when unexpected issues arise.

³ This means that Wiluna will be used less but will continue to be critical to ensuring downstream compression.

5. Asset Management Plan

The culmination of our Operational Excellence business processes applied to the GGP is this Asset Performance and Lifecycle Plan (Plan) which balances risk, performance, and cost to achieve the GGP’s asset mission and key objectives.

Together the business processes ensure that the Plan reflects customer expectations (including the paramount importance of reliability), good industry practice, regulatory requirements, as well as asset condition and criticality.

The Plan outlines how each business process is works together in unison with a focus over the period to 2029. The scope of this document is limited to GGP specific investments (rather than investments arising from APA’s national processes, such as cyber security).

Consistent with the Asset Mission, the Plan is focussed on ensuring the reliable supply of gas while managing the integrity of safety of the assets to ensure that capacity, reliability and public safety are not compromised. The key risks and opportunities identified through the *Manage Asset Risks and Opportunities* business process reflects this focus, as outlined in Table 2.

Table 2 Snapshot of key GGP risks and opportunities

Risk	Inherent Rating	Residual Rating	Target
Failure to meet Safeguard baseline	High	High	Moderate
Driving, Vehicle Accident	High	High	Low
Loss of containment from an overpressure event	High	Moderate	Moderate
Loss of containment of below ground concrete tanks	High	Moderate	Low
Loss of integrity of pipeline	High	Low	Low
Loss of containment of below ground services pipework	High	Moderate	Moderate
Trip limits may be ineffective	Moderate	Moderate	Neglig ble
Loss of cover resulting in exposed and/or unsupported pipeline	Moderate	Low	Moderate
Unable to deliver contracted firm services due to capacity constraints	Moderate	Moderate	Moderate
Compressor reliability	Moderate	Moderate	Moderate

These risks flow into plans which can be broadly grouped as follows:

1. Pipeline Integrity
2. Rotating Equipment
3. Facility end of equipment life
4. Emissions
5. Physical security
6. Operations and delivery

Pipeline integrity

Our plan for pipeline integrity is driven by our *Asset Integrity Linear* process. Consistent with this process and as outlined in the Pipeline License, the GGP is managed in accordance with the Australian Standard for High Pressure Pipeline Systems (AS 2885).

We will continue to identify risks through Safety Management Studies (**SMS**) performed every 5 years. These studies consider the technical, environmental conditions and operational factors such as age, material, condition, whether the pipeline traverses through areas of high community risk, etc. Identified risks are then managed to a level that is as low as reasonably practicable (**ALARP**) through a combination of design, physical, and procedural controls. The risk assessment of the threats and execution of these controls is outlined and overseen through a Pipeline Integrity Management Plan (**PIMP**).

The PIMP, specific to the GGP, identifies the pipeline integrity threats, risk and controls. The PIMP is reviewed periodically, most recently in November 2023. The PIMP considers:

- Asset specific factors, including the commissioning date (1996), technology used to construct the GGP and gas moisture content.
- Integrity data, including from the 2016 GGP ILI campaign such as defect growth rate, manufacturing features and the importance of high-resolution data to differentiate between the two.
- Recent developments with ILI technology, including the general industry shift towards greater use of MFL-C (as part of a multi tool strategy with MFL-A), Tri-axial and EMAT technology.
- APA's experience in undertaking ILI campaigns across Australia, in particular the level of confidence that each tool provides to identify defects.

The PIMP outlines that the linear integrity of the GGP is maintained by performing periodic In-line inspections (ILI), coating defect surveys and digs, as well as managing and analysing Cathodic Protection systems. External Interference Management (managing encroachments, landowner and third-party liaison, patrols, and corridor condition inspections) also form part of managing asset integrity.

A summary of the integrity threats identified in the most recent PIMP is outlined in Table 3.

Table 3 PIMP: Summary of Integrity Threats

Threat	Occurrence	Frequency	Severity	Mitigation Measures	Residual Risk
Internal corrosion	Low relative elevation	Unlikely	Minor	ILI	Low
External corrosion	Dis-bonded coating (or Heat Shrink Sleeves)	Occasional	Minor	Cathodic protection, ILI, Coating repairs	Low
Stress Corrosion Cracking	Not detected	Remote	Sever	Magnetic Particle Inspection	Low
Mechanical Induced Crack	External Interference	Occasional	Sever	External Corrosion Direct Assessment of all dents with metal loss	Medium

While overall pipeline integrity is currently good, the cathodic protection units (which supply protection current to counteract the natural corrosion tendency of the pipeline's metal) are ageing, obsolete and beginning to fail (e.g. at Wiluna in August 2022). This introduces an additional moderate risk related to the failure these units leading to a prolonged absence of cathodic protection.

Business as Usual

Pipeline integrity is largely managed on a business-as-usual basis consistent with the PIMP. This includes undertaking periodic In-line Inspections and monitoring of cathodic protection systems.

In-line Inspection

The GGP PIMP currently sets out ILI inspections to be undertaken consistent with APA's ILI policy. Specifically, inspections every 10 years with alternate use of calliper, MFL-A and MFL-C tools and in the subsequent inspection calliper and tri-axial MFL tools.

This inspection regime prescribed by the PIMP adheres to the maximum allowable interval under APA's ILI policy with special considerations given to:

- The defect growth rate.
- No special integrity concerns.
- No regulatory obligations mandating more frequent inspections.
- The GGP traversing rural rather than high-consequence areas.
- Cracking defects as an integrity threat is considered low risk.

Cathodic Protection

Cathodic Protection (CP) is a small current applied to a pipeline to protect the steel from corrosion. Cathodic Protection Units (CPUs) are installed at intervals along the pipeline determined by the relevant CP system design. By managing output current and voltage levels, CP slows the corrosion process down to acceptable rates if certain protection criteria and protection levels can be met.

To ensure that CP levels can be maintained as required by AS 2885.1, AS2832.1, the GGP pipeline licence and the PIMP, the performance of the CPUs is monitored to ensure that the cathode protection units are maintaining the protection of the pipeline to appropriate levels. Acceptable levels of CP protection are outlined in the Asset Integrity (Linear) business process and discussed monthly in Asset Performance Meetings and other forums.

Asset Improvements

Cathodic Protection Units

Cathodic Protection Units are now obsolete and beginning to fail. To ensure cathodic protection can be maintained, these units will be progressively replaced as part of our facility end of equipment life replacement program.

Data Loggers

Currently, cathodic protection along the pipeline is monitored by physically reading the pipeline potential at various test points located at about 5 km intervals along the pipeline and at key locations (insulating joints, rail crossings, near HV power line crossings etc.).

These surveys are undertaken periodically and require the data to be manually collected and later transferred for analysis. This also requires technicians to drive along the pipeline route (increasing the likelihood of a remote vehicle accident).

With the advent of improved telemetry systems, good industry practice and standard APA practice is moving towards the roll-out to remote data loggers installed at selected test points. This technology allows real-time monitoring and the swift detection and rectification of any issues with the critical cathodic protection system.

Accordingly, over the next 5-years, the cathodic protection test points will be upgraded to ensure the safety and integrity of services is maintained, consistent with good industry practice.

Rotating equipment

Our plans for our rotating equipment – including turbine and reciprocating compressors and GEAs – is guided by our *Reliability and Maintenance Strategy* process and takes into account customer requirements (including the paramount importance of reliability) as well as individual asset condition and criticality.

Broadly, the plan is to maintain our existing assets. Where assets reach the end of their useful life, undertake life extensions or asset replacements based on a risk-based assessment which considers reliability, asset criticality.

In the medium to longer term, additional investment will be required in the to help achieve Australia's emission reduction targets.⁴ The exact form and type of investment will depend on the outcomes of studies and trials, regulatory guidance on the value of emissions reductions provided consistent with

⁴ Consistent with the soon to be amended National Gas Objective.

the National Gas Law, and cost of compliance with regulatory obligations such as the safeguard mechanism.

Business As Usual

Our rotating equipment will be maintained through proactive maintenance and overhauls consistent with manufacturer guidelines, APA maintenance regimes and overall good industry practice. This approach reduces the risk of failures and the associated safety, reliability, contractual and financial consequences.

Asset and Business Improvements

Turbine compressors

Our turbine compressors are in generally good condition and do not require any major upgrades or works in the near term to maintain their reliability.

Reciprocating compressors

Our reciprocating compressors still in operation, at Yarraloola and Ilgarari, are the oldest in the fleet and will soon reach the end of their design life. While less critical than our turbine compressors (especially with the reduction in compression required with the connection of the NGI) they perform an important backup role in the case of maintenance or reliability issues with other compressor units.

The plan for these units, given the reduced utilisation and lower criticality is to continue to maintain the units and undertake a life-extension works rather than replace the compressor units and associated equipment. A study is currently underway to determine the feasibility and scope of the works required.

GEAs

Our fleet of GEA's are reaching the end of their useful life and pose an increasingly risk to reliability and security of supply. We plan to gradually replace the GEA's prioritised based on the condition and criticality, generally when they are due for an engine exchange.

We also plan on undertaking a technology study to take advantage of the opportunity to reconfigure our GEA's and modifying the number, size and engine technology to potentially reduce emissions and improve reliability, redundancy and operational performance.

In addition to these major replacements, we intend to undertake minor corrective work to address reliability issues as they arise. Examples include upgrading the load banks at Turee Creek and Ilgarari.

End of equipment

Our plan to manage the end of equipment life is driven by a combination of our *Reliability and Maintenance Strategy*, *Asset Integrity Linear*, and *Regulatory Compliance* business processes.

The objective is to undertake a program of works to ensure that essential systems (such as cathodic protection, power systems, mainline valves, control systems etc.) continue to function to maintain the integrity and functionality of the pipeline and its components required to ensure the ongoing safety and security supply of gas.

Asset and Business Improvements

Given the age and obsolescence of key equipment, a program of work is required to re-life our existing facilities by replacing failing and obsolete equipment. This program is developed on a program wide basis to optimise the delivery of works, given the remote nature of the GGP's facilities and the interconnect nature of the obsolete and ageing systems. Facilities will be prioritised based on asset criticality and risk.

Emissions

Our plan for emissions is driven by the interaction between our *Emissions* and other business processes. Specifically, through the application of APA's emission mitigation hierarchy, where emissions avoidance and reductions and the use of new innovative technologies are applied, where it is reasonable to do so.

Figure 17 APA's emissions mitigation hierarchy



Asset and Business improvements

To achieve net zero operational emissions, additional investment will be required. This will be explored through two mechanisms.

Firstly, through the consideration and quantification of emissions reductions in options assessment of investments required to achieve other objectives (such as reliability). This will ensure that the value of emissions reductions is included. This may result in a different solution than what would be recommended if the value of reducing emissions was excluded.

An example of this is our planned project to remove the wet seals at Wiluna. While primarily driven by reliability concerns, this project will also result in reduced emissions. This will be achieved by reducing fugitive emissions from gas powered pneumatic valves (which will be replaced with air powered valves) and moving to dry gas seal technology.

Secondly, investments will be made for the primary purpose of reducing emissions. At this stage, this is expected to include installing fugitive gas emission recovery systems at Wyloo West and Turee Creek compressor stations.

The ultimate technologies deployed will depend on the outcomes of a range of current trials, testing and other developments technologies being considered. Examples include:

- Reducing GEA emissions through the installation of smaller engines or shifting to newer technologies such as micro-turbines. These will be considered as part of a technology study and a final decision will be made when each GEA is due to be replaced.
- Reducing fugitive emissions by reviewing and minimising routine venting work. We will also consider other options such as installing seal recovery systems, upgrading seal packing at our reciprocating compressors, and undertaking Leak Detection and Repair Surveys (LDAR) to measure and rectify any leaks.

These technologies will continue to be trialled and roll-out, where reasonable to do so.

Physical security

Our physical security plans are the result of our *Risk and Opportunity* and *Regulatory Compliance* business processes, including a physical security threat and risk assessment of the GGP which identified, analysed and evaluated security risks associated with the existing site security controls.

Asset and Business improvements

Based on the results of the physical security threat and risk assessment, a program of works due to commenced in 2024, has been developed to address site-specific security risks.

Operations and delivery

In addition to investments across the GGP's pipeline and facilities ongoing investment is required to support the *Integrated Operations* and *Maintenance Delivery* business processes, specifically miscellaneous capital, vehicles, and maintenance bases.

Miscellaneous Capital

Our Plan includes miscellaneous capex intended to cover expenditure to undertake minor capital works and purchase instrumentation, tools etc. Expenditure varies year-to-year depending on what works are required.

While often ad-hoc and reactive this expenditure will continue to be required and is expected to be generally inline consistent with the historic average of around \$0.14 million per year. While several components across the GGP are forecast to be replaced, this will be more than offset by the increasing age of the pipeline as a whole.

Vehicles

The GGP's forklifts and trailers, at around 27 years of age, are well beyond industry benchmark replacement timeframes of between 10 to 15 years. Our plan is to gradually replace these vehicles over time, to smooth the replacement program out over time. This will allow the gradual shift away from forklifts to using telehandlers which provides several operational and safety benefits compared to a transition forklift due to better visibility, versatility and manoeuvrability.

For our heavy commercial trucks, we plan on continuing to apply the APA Group Motor Vehicle Procedure which sets out a 10-year replacement timeframe (consistent with industry benchmarks). This will also allow moving to newer vehicles thereby ensuring that personal are protected by updated safety features including crash avoidance technologies such as electronic stability controls,

adaptive cruise control and lane departure warning systems. These technologies are particularly beneficial given the long distances travelled and remote location of the GGP.

Maintenance bases

As the overall condition of the GGP's maintenance bases is good, no major works have identified or included in this Plan. Minor works will continue to be required to undertake corrective works and minor upgrades as required.

Appendix A Rotating Plant

Table 4 GGP Rotating Plant

Station	Name	Type	Brand	Model	Year	Role
Yarraloola	YLA-GEA1	Gas Engine Alternator	[REDACTED]	[REDACTED]	1996	Duty unit
	YLA-GEA2	Gas Engine Alternator	[REDACTED]	[REDACTED]	1996	Duty unit
	YLA-U1	Reciprocating Compressor	[REDACTED]	[REDACTED]	1996	Standby
	YLA-U2	Reciprocating Compressor	[REDACTED]	[REDACTED]	1996	Standby
	YLA-U3	Turbine Compressor	[REDACTED]	[REDACTED]	2003	Duty unit
Wyloo West	WYW-GEA1	Gas Engine Alternator	[REDACTED]	[REDACTED]	2009	Duty unit
	WYW-GEA2	Gas Engine Alternator	[REDACTED]	[REDACTED]	2009	Duty unit
	WYW-U1	Turbine Compressor	[REDACTED]	[REDACTED]	2009	Duty unit
Paraburdoo	05-GE-01	Gas Engine Alternator	[REDACTED]	[REDACTED]	2003	Duty unit
	05-GE-02	Gas Engine Alternator	[REDACTED]	[REDACTED]	2003	Duty unit
	05-GE-03	Gas Engine Alternator	[REDACTED]	[REDACTED]	2006	Duty unit
	PBD-U1	Turbine Compressor	[REDACTED]	[REDACTED]	2003	Not in service.
	05-TC-01-2	Turbine Compressor	[REDACTED]	[REDACTED]	2006	Duty unit
	05-TC-01-3	Turbine Compressor	[REDACTED]	[REDACTED]	2013	Duty unit
Turee Creek	07-GE-5001	Gas Engine Alternator	[REDACTED]	[REDACTED]	2013	Duty unit
	07-GE-5201	Gas Engine Alternator	[REDACTED]	[REDACTED]	2013	Duty unit
	07-TC-2201	Turbine Compressor	[REDACTED]	[REDACTED]	2013	Duty unit
	07-TC-3201	Turbine Compressor	[REDACTED]	[REDACTED]	2013	Duty unit
Ilgarari	ILG-GEA1	Gas Engine Alternator	[REDACTED]	[REDACTED]	1996	Duty unit
	ILG-GEA2	Gas Engine Alternator	[REDACTED]	[REDACTED]	1996	Duty unit
	ILG-U1	Reciprocating Compressor	[REDACTED]	[REDACTED]	1996	Standby
	ILG-U2	Reciprocating Compressor	[REDACTED]	[REDACTED]	1996	Standby
Neds Creek	NCS-GEA1	Gas Engine Alternator	[REDACTED]	[REDACTED]	2009	Duty unit
	NCS-GEA2	Gas Engine Alternator	[REDACTED]	[REDACTED]	2009	Duty unit
	NCS-U1	Turbine Compressor	[REDACTED]	[REDACTED]	2009	Duty unit
Wiluna	WIL-GEA1	Gas Engine Alternator	[REDACTED]	[REDACTED]	2001	Duty unit
	WIL-GEA2	Gas Engine Alternator	[REDACTED]	[REDACTED]	2001	Duty unit
	WIL-U1	Turbine Compressor	[REDACTED]	[REDACTED]	2001	Duty unit

Table 5 Turbine compressor run-hour forecast

Station	Unit	Hours#	Usage	Run order adjustment	CY23	CY24	CY25	CY26	CY27	CY28	CY29	CY30
Yarraloola	YLA-U3	25,671	8,810	0	27,874	4,684	13,494	22,304	31,114	7,924	1,6734	25,544
Wyloo West	WYW-U1	33,226	8,569	0	3,368	11,937	20,506	29,075	5,644	14,213	22,782	31,351
Paraburdoo	PBD-U1	-	-	0								
	05-TC-01-2	2,046	220	0	2,101	2,321	2,541	2,761	2,981	3,201	3,421	3,641
	05-TC-01-3	25,165	8,470	0	27,283	3,753	12,223	20,693	29,163	5,633	14,103	22,573
Turee Creek	07-TC-2201	2,151	4,380	0	3,246	7,626	12,006	16,386	20,766	25,146	29,526	1,906
	07-TC-3201	28,003	4,380	0	29,098	1,478	5,858	10,238	14,618	18,998	23,378	27,758
Neds Creek	NCS-U1	25,043	8,397	-20%	26,722	1,440	8,158	14,875	21,593	28,310	3,028	9,746
Wiluna	WIL-U1	6,524	8,500	-20%	8,224	15,024	21,824	28,624	3,424	10,224	17,024	23,824

Table 6 GEA run hour forecast

Location	Driver	Run Hours		Last Overhaul	End FY24	End FY25	End FY26	End FY27	End FY28	End FY29	End FY30	
		Hrs At Aug '23	Hrs per Year									
				Type	Hours							
Yarraloola	GEA 1	53,286	8,780	TE	45,000	62,048	70,806	79,566	88,326	97,086	105,846	114,606
Yarraloola	GEA 2	58,952	4,380	TE	45,000	63,332	67,712	72,092	76,472	80,852	85,232	89,612
Wyloo	GEA 1	6,685	4,380	MAJ	60,000	11,065	15,445	19,825	24,205	28,585	32,965	37,345
Wyloo	GEA 2	59,706	8,780	TE	45,000	68,466	77,226	85,986	94,746	103,506	112,266	121,026
Paraburdoo	GE-01	60,063	4,380	MAJ	49,209	64,443	68,823	73,203	77,583	81,963	86,343	90,723
Paraburdoo	GE-02	61,592	4,380			65,972	70,352	74,732	79,112	83,492	87,872	92,252
Paraburdoo	GE-03	53,345	8,780	MAJ	45,435	62,105	70,865	79,625	88,385	97,145	105,905	114,665
Turee Creek	GE-5001	31,421	4,380	TE	17,500	35,801	40,181	44,561	48,941	53,321	57,701	62,081
Turee Creek	GE-5201	47,788	8,780	MAJ	41,018	56,548	65,308	74,068	82,828	91,588	100,348	109,108
Ilgarari	GEA 1	124,774	8,780	IF	105,473	133,534	142,294	151,054	159,814	168,574	177,334	186,094
Ilgarari	GEA 2	108,746	4,380	TE	102,843	113,128	117,508	121,888	126,268	130,648	135,028	139,408
Neds Creek	GEA 1	56,260	8,780	MAJ	48,000	65,020	73,780	82,540	91,300	100,060	108,820	117,580
Neds Creek	GEA 2	67,327	4,380	MAJ	50,000	71,707	76,087	80,467	84,847	89,227	93,607	97,987
Wiluna	GEA 1	96,257	8,780	TE	70,779	105,017	113,777	122,537	131,297	140,057	148,817	157,577
Wiluna	GEA 2	98,956	4,380	MAJ	89,000	103,336	107,716	112,096	116,476	120,856	125,236	129,616

Appendix B APA Enterprise Risk Matrix