CENTRAL QUEENSLAND COAL NETWORK

Annual Capacity Assessment Report (ACAR)

2022

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COAL NETWORK CAPACITY CO.

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Contents

1. Abbreviations & Definitions

1.1 Abbreviations

The following abbreviations are used throughout this document:

Abbreviation	Meaning
AN	Aurizon Network
BCM	Ballast Cleaning Machine
BR	Below Rail
CQCN	Central Queensland Coal Network
DBCT	Dalrymple Bay Coal Terminal
DNC	Deliverable Network Capacity
DSM	CQCN Dynamic Simulation Model
ECD	Existing Capacity Deficit
FSS	Full System Shut
FY	Financial Year
GAPE	Goonyella Abbott Point Expansion
GLR	Gross Load Rate
HPCT	Hay Point Coal Terminal
ICAR	2021 Initial Capacity Assessment Report
IE	Independent Expert
IL	Inloader (Rail Receival Station)
MRSB	Maintenance, Renewal and Strategy Budget
Mtpa	Tonnes per annum in Millions
NQXT	North Queensland Export Terminal
NRG	Gladstone Powerhouse
QAL	Queensland Alumina Limited
QCA	Queensland Competition Authority
RCS	Remote Control Signalling
RGTCT	RG Tanna Coal Terminal
RIG	Rail Industry Group
SOP	System Operating Parameters
TAs	Transitional Arrangements
TLO	Train Load Out

TP	Train Path
TSE	Train Service Entitlement
TSR	Temporary Speed Restriction
UT5	2017 Aurizon Network Access Undertaking
WICET	Wiggins Island Coal Export Terminal

1.2 Definitions

Terms that are capitalised within the document are defined terms as per **Part 12** of the Aurizon Network's 2017 Access Undertaking (UT5). The following additional definitions are provided:

Measure	Definition	Required per Train cycle
Train Service Entitlement (TSE)	An Access Holder's entitlement pursuant to an Access Agreement to operate or cause to be operated a specified number and type of Train Services over the Rail Infrastructure (as defined in UT5) including within a specified time period, in accordance with specified scheduling constraints and for the purpose of either carrying a specified commodity or providing a specified transport service (UT5).	2
Train Cycle	In general, Train Cycles typically proceed as follows: 1. Dispatch from yard 2. Travel empty to mine 3. Load at TLO 4. Travel loaded to rail receival station 5. Unload 6. Travel empty to yard for possible provisioning and/or maintenance 7. Wait for next dispatch Cycle Time measures items 1 to 6 Turnaround Time measures items 1 to 7	1
Train Path	Is the occupation of a specified portion of Rail Infrastructure, which may include multiple sections in sequential order, for a specified time. UT5 outlines that such Train Paths needing to be useable including in respect of return journeys. One (1) Train Path is equivalent to two (2) TSEs.	1
Train Loadouts	The upstream boundaries of the model are the Train Loadout (TLO) facilities at each mine, with their associated balloon loop. Coal enters the DSM at these facilities.	N/A
Cycle Time	Represents the time a train takes to operate its Train Cycle from departing the yard to returning to the yard.	

2. Preamble

UT5, as approved by the Queensland Competition Authority (QCA), requires Capacity Assessments of each of the Central Queensland Coal Network's Coal Systems to be performed, as detailed in **Part 7A: Capacity**.

The Independent Expert completed the Initial Capacity Assessment Report (ICAR) in October 2021. The ICAR sets the initial **Definition of Deliverable Network Capacity** of the CQCN.

This is the first Annual Capacity Assessment Report (ACAR) since the completion of the 2021 ICAR, with the Deliverable Network Capacity determined for the CQCN, each Coal System and by mainline and branch line. The timing for the release of the ACAR has been set to align with the beginning of the next financial year.

2.1 Deliverable Network Capacity

2.1.1 Deliverable Network Capacity

The following extract defining Deliverable Network Capacity is taken from **Part 7A.2** of UT5.

7A.2 Definition of Deliverable Network Capacity

(a) For the purpose of this Part 7A, Deliverable Network Capacity means the capacity of the Rail Infrastructure, expressed as the maximum number of Train Paths (calculated on a Monthly and annual basis) that can be utilised in each Coal System (such Train Paths needing to be useable including in respect of return journeys), and the mainline and each branch line of that Coal System, taking into account the operation of that Coal System, having regard to:

(i)   the way in which the relevant Coal System operates in practice, including those matters taken into consideration in formulating the System Operating Parameters;

(ii)   reasonable requirements in respect of planned maintenance and a reasonable estimate of unplanned maintenance, repair, renewal and Expansion activities on the Rail Infrastructure;

(iii)   reasonably foreseeable delays or failures of Rollingstock occurring in the relevant Supply Chain, both planned delays and failures and a reasonable estimate of unplanned delays and failures;

(iv)   reasonably foreseeable delays associated with any restrictions (including speed restrictions, dwell times within Train Services and between Train Services and other operating restrictions) affecting the Rail Infrastructure;

(v)   the context in which the Rail Infrastructure interfaces with other facilities forming part of, or affecting, the relevant Supply Chain (including loading facilities, load out facilities and coal export terminal facilities);

(vi)   the need for Aurizon Network to comply with its obligations to provide access to non-coal traffic under Access Agreements, Passenger Priority Obligation or Preserved Train Path Obligations;

(vii)   the Supply Chain operating mode (including at the loading facilities, load out facilities and coal export terminal facilities);

(viii) interfaces between the different Coal Systems; and

(ix)   the terms of Access Agreements (including the number of Train Service Entitlements for each origin and destination combination in that Coal System) relating to Train Services operating in Coal System.

2.2 Annual Capacity Assessment

UT5 outlines the requirements that the Independent Expert must consider in undertaking the Annual Capacity Assessment, which include:

- The first Annual Capacity Assessment will be undertaken for the first year after the Initial Capacity Assessment has been completed;

- Consider whether any variation of the System Operating Parameters (SOP) is required, provided that any amendments to the SOP:

  o include a consideration of the factors set out in the definition of Deliverable Network Capacity;

  o would be consistent with the applicable approved Maintenance Renewals and Strategy Budget; and

  o would not place Aurizon Network in breach of its obligations under UT5 or any Access Agreement.

- Set out the SOP for each Coal System having regard to the way in which each Coal System operates in practice.

The ACAR, and associated SOP, prepared by the Independent Expert, must report on the DNC of each Coal System over the Capacity Assessment Period. The ACAR must include information regarding:

- Assumptions that the Independent Expert has made in interpreting the definitional factors that DNC is characterised by;

- Assumptions that the Independent Expert has made in developing the SOP and other modelling related assumptions for each Coal System;

- The DNC of each Coal System's mainline and branch lines; and

- Constraints that reduce, or are likely to reduce, DNC of each Coal System.

The outcomes of the Independent Expert's assessment must be reported to the Queensland Competition Authority (QCA) and Aurizon Network (AN) in a redacted and unredacted form and to the Chair of the Rail Industry Group (RIG) in a redacted form. QCA and AN will publish the redacted versions on their respective websites.

2.2.1 Dynamic Simulation Model (DSM)

A DSM is used (based on AnyLogic modelling software) to determine the DNC of the CQCN and for each Coal System. The scope of the DSM reflects the DNC definition **(section 2.1)** and is between the boundaries of:

- Coal flow into wagons at Train Loadouts (TLOs); and

- Coal flow out of wagons at Rail Receival Stations (inloaders).

and includes the components as outlined in **figure 1**.

Figure 1 – Deliverable Network Capacity Boundaries
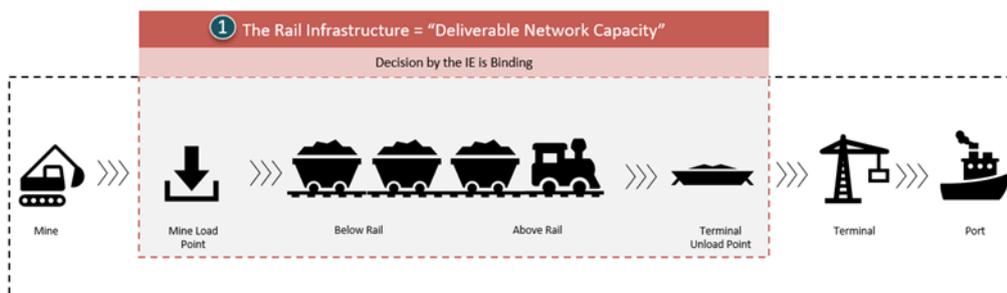
2.2.2 System Operating Parameters (SOP)

The SOP as outlined in UT5, represent the assumptions on the operation of each element of the coal Supply Chain and the interfaces between those elements including the Supply Chain operating mode, seasonal variations, and live run losses. These assumptions are used in the DSM for the analysis of DNC.

The Independent Expert has prepared the 2022 System Operating Parameters which should be read in conjunction with this report.

The Independent Expert uses three layers of documentation to record and determine the Deliverable Network Capacity:

- *Model Basis Documents/Detailed Data Analysis*
  Internal documentation showing detailed statistical and data analysis and commentary on assumptions used to manage the DSM.

- *System Operating Parameters*
  External document that accompanies the ACAR each year. The SOP as outlined in UT5, represent the assumptions on the operation of each element of the coal Supply Chain and the interfaces between those elements including the Supply Chain operating mode, seasonal variations, and live run losses.

  The SOP is also aimed to provide sufficient detail and data consistent with all the requirements outlined in UT5 such as Access Agreement key performance indicators for rebate determination.

- *Annual Capacity Assessment Report (ACAR)*
  External report that is completed annually, which shows the specific capacity values and associated impact on the network and each individual coal system. These reports will highlight any differences in DSM inputs and outputs from year to year.

For each key area, the parameters that impact the determination of DNC have been analysed and the SOP outlines how the DSM treats each of these.

The five (5) CQCN Coal Systems and the associated branch lines and mainlines used in the DSM to assess the DNC are also outlined in the SOPs.

2.2.3 Consultation

Throughout the ongoing development of the DSM and associated SOP, consultation has occurred with industry stakeholders. All feedback has been considered, and where appropriate, has been incorporated in the finalisation of the ACAR.

2.2.4 Capacity Assessment Period

The Capacity Assessment Period for the ACAR is for the five (5) financial years FY23 to FY27 inclusive i.e. 1st July 2022 to the 30th June 2027, noting that UT5 defines the Capacity Assessment Period as the later of five (5) years, or peak capacity under the Access Agreements and the completion and commissioning of any Expansion that AN is obliged to construct (other than as a result of a Deliverable Network Capacity Shortfall). Based on a review of the data, the Independent Expert has determined the Capacity Assessment Period is the five-year period outlined above as peak capacity occurs within this period.

2.3 Assumptions

There are several general assumptions used in the determination of the DNC:

- The Independent Expert has had to exercise judgement on a large range of issues in developing the SOP assumptions and application of these within the DSM. These are called out as appropriate in each section of the SOP;
- Unless stated otherwise in the relevant SOP section, the most recent historical data from January 2020 to January 2022 has been used and analysed along with previous years historical data to develop key data statistical distributions which feed into SOP assumptions and the DSM;
- Train paths include those used for coal for export through terminals, domestic coal users and non-coal traffic;
- The DSM has used calculated expected payloads for the Moura Coal system to determine the train paths for the DNC and Committed Capacity however for reporting purposes is converted to tonnes using nominal payload;
- No further constraints have been identified outside those detailed in the 2021 ICAR and the constraints and subsequent Existing Capacity Deficits (ECD) that were identified in the ICAR for each Coal System, are being addressed through the Transitional Arrangements process outlined in UT5. At the time of preparing the ACAR, the Queensland Competition Authority had not made a determination on Transitional Arrangements to resolve the Existing Capacity Deficits identified in the 2021 ICAR. As a result, no Transitional Arrangements have been assumed or modelled. Some operational improvements identified in the Transitional Arrangement options such as the optimised ballast cleaning machine program that was approved through the annual RIG process, has been included

2.3.1 General

For the ACAR, Committed Capacity is used as the base demand profile against which DNC is assessed and demand is scaled up linearly (unconstrained) from there until DNC is reached. This is done for each Coal System.

When assessing the DNC, the capacity should not be constrained by the current number of consists operating and so the number is artificially inflated under the assumption that the Above Rail operators will provide the consists needed to realise the DNC.

The mainlines and branch lines have been shown as they are allocated (geographically) to the relevant Coal System. Some branch lines and mainlines are used to transport coal for multiple Coal Systems. The branch line and mainline DNC is noted within the Coal System section of this report where this occurs. To determine the total DNC of a branch line or mainline that is used for multiple Coal Systems, each DNC would need to be combined to calculate the total. **Appendix F** provides total values (i.e. inclusive of cross system traffic) in Train Paths and tonnes for each Coal System and mainline and branch lines per year.

Mainlines and branch lines that are used for multiple Coal Systems are outlined below. These are unchanged from the 2021 ICAR. Coal Systems in bold are the primary Coal System that the branch line or mainline is allocated to:

Reference	Type	Mainline/branch line
1A	Branch line	Pring to Abbott Point (**Newlands** and GAPE)
1	Mainline	Collinsville to Pring (**Newlands** and GAPE)
1B	Branch line	Newlands Junction to Collinsville (**Newlands** and GAPE)
3C	Branch line	Oaky Creek Junction to Coppabella (**Goonyella**, GAPE and Blackwater)
3D	Branch line	Wotonga to Coppabella (**Goonyella** and GAPE)
3E	Branch line	Wotonga to North Goonyella Junction (GAPE and **Goonyella**)
3F	Branch line	Blair Athol Mine to Wotonga (**Goonyella** and GAPE)
4D	Branch line	Oaky Creek Junction to Burngrove (**Blackwater** and Goonyella)

DNC is reported in Train Paths. DNC represented in tonnes has been included in this report for information purposes only. Train Paths have been converted to tonnes using the payload assumptions in the DSM except for Moura Cola System which uses nominal payload.

2.3.2 Model Variability

The DSM for the network is a stochastic model. Many of the inputs such as load rates, and delays are provided as a probability distribution rather than a single value.

This means that each run of the simulation will result in different outcomes as the values for these key inputs are randomly chosen throughout the course of the simulation run. Therefore, the model is run many times to obtain a range of likely outcomes. The aim is for fifty (50) successful seed runs.

The DNC is determined to be the median result of all the simulation runs, with the 10th percentile (P10) and the 90th percentile (P90) providing an estimate of the variability. The DSM variability is minus 0.8% at P10 and positive 0.7% at P90.

The chart below **(figure 2)** is an illustrative example of a histogram of achieved Train Paths across all the simulation runs. The P10, P50 or median, and P90 results are marked.

Figure 2   **Example of DSM Output results (illustrative only)**
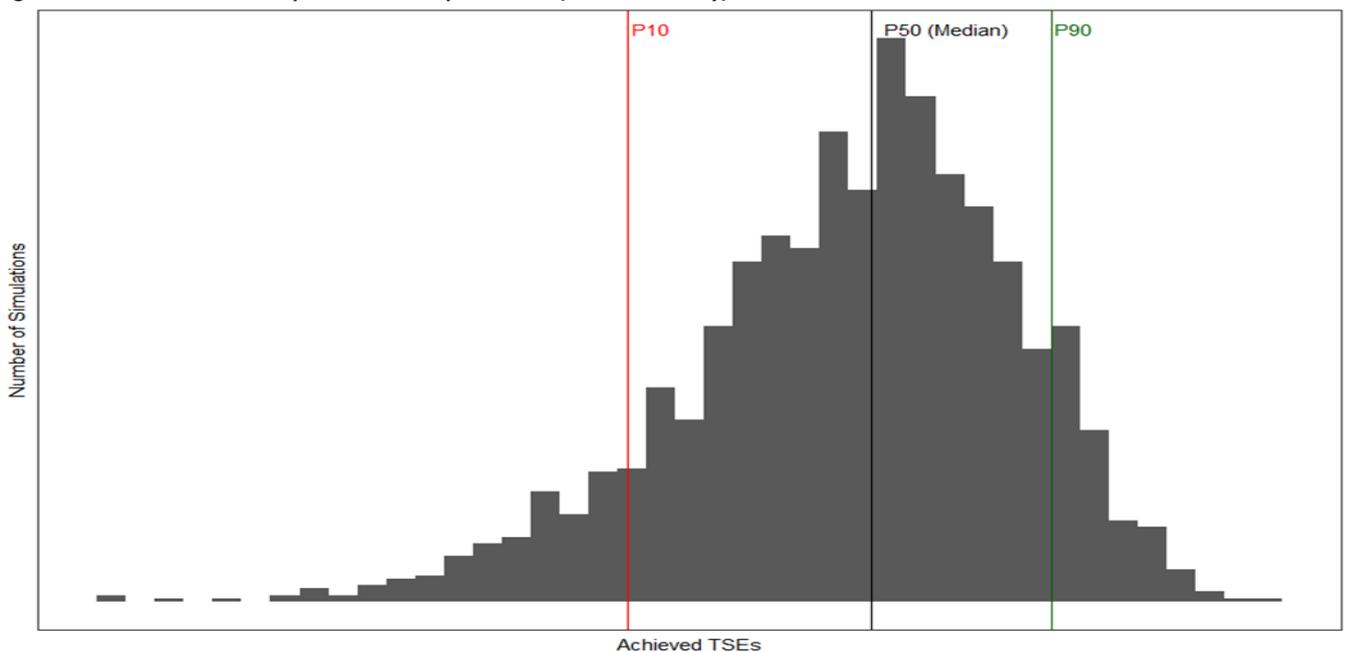
2.3.3 Considerations when Evaluating DNC

When considering the determination of DNC, the focus has been to maximise DNC of the CQCN and each Coal System and achieve equitability between origin/destinations and cross-system impacts as much as possible.

This analysis is the maximum capacity of the Rail Infrastructure by year, for the Capacity Assessment Period, and in most cases may not directly reflect how the network is currently performing in the current lower demand environment.

2.4 Information and Redaction

To the extent possible, this document has been prepared on an unredacted basis. Where capacity outcomes contain information that is confidential to an Access Holder, Customer or Train Operator and is unable to be

disclosed, it has been redacted in this document or incorporated into Appendices to this document which will be redacted.

Minor rounding variances between values presented per month and per annum, per mainline and branch line, and per origin: destination may occur in this report.

3. Executive Summary

The Independent Expert has prepared the Annual Capacity Assessment Report (ACAR) regarding the Deliverable Network Capacity (DNC) of Aurizon Network's Central Queensland Coal Network (CQCN) for the Capacity Assessment Period (1 July 2022 to 30 June 2027). This summary provides an overview of the:

- Capacity Assessment outcomes by Coal System, mainline and branch line by year;
- major differences between the 2022 ACAR and 2021 ICAR results; and
- commentary on Transitional Arrangements identified to address the 2021 ICAR Existing Capacity Deficits impact on DNC.

The timing of the finalisation of the 2022 ACAR is within six months of the 2021 ICAR being published. A critical factor in the updated DNC, is the included analysis of the most recent historical data up to early 2022. The determination of the Transitional Arrangement recommendations to resolve the identified ECD's from the 2021 ICAR by QCA has not yet occurred, and therefore no impact of any future QCA decision has been considered for this ACAR. However, some analysis and commentary has been provided for information.

3.1 Capacity Assessment Outcomes

3.1.1 Deliverable Network Capacity

Coal System Level

The Independent Expert has determined that the Deliverable Network Capacity in Train Paths per year for the network over the Capacity Assessment Period is as shown in **figure 3**.

Figure 3   Deliverable Network Capacity by Coal System – Train Paths
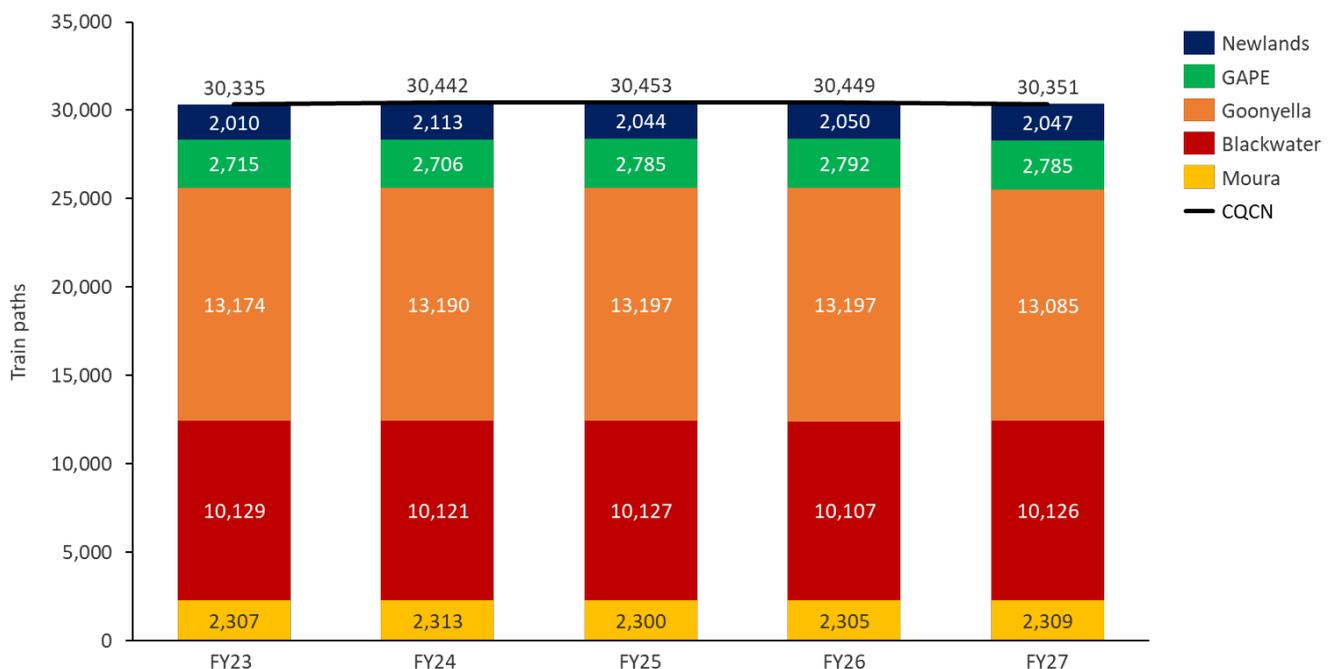
The Deliverable Network Capacity is also shown in tonnes in **figure 4.**

Figure 4   **Deliverable Network Capacity by Coal System – Tonnes (M)**
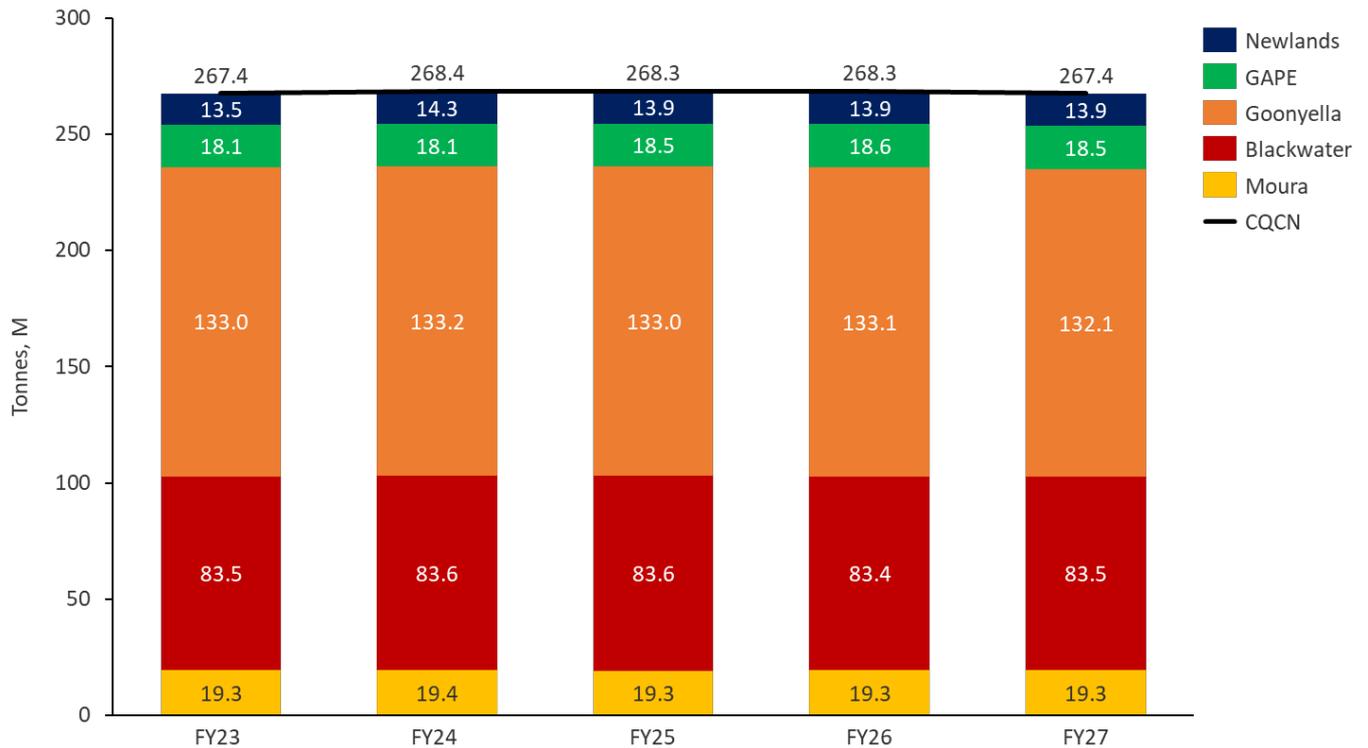
Given that for years FY24 and beyond have used generally the exact same assumptions as for FY23, the results show minimal expected variation between years for each Coal System.

A summary of differences between the ACAR and 2021 ICAR results are shown in **table 1**. FY23 and FY24 are the only overlap financial years between the 2021 ICAR and ACAR. The difference in results for FY24 is also shown.

Table 1   **Summary of Differences ACAR to ICAR (Train Paths)**

Coal System	2021 ICAR DNC				2022 ACAR DNC						FY24 Difference ACAR to ICAR			
	(Train Paths)		(M Tonnes)		(Train Paths)			(M Tonnes)			(Train Paths)		(M Tonnes)	
	FY20	FY24	FY20	FY24	FY23	FY24	FY27	FY23	FY24	FY27	#	%	#	%
Newlands	1,899	2,129	12.8	14.4	2,010	2,113	2,047	13.5	14.3	13.9	(16)	-0.8%	(0.2)	-1.0%
GAPE	2,651	2,799	17.8	18.8	2,715	2,706	2,785	18.1	18.1	18.5	(94)	-3.3%	(0.7)	-3.8%
Goonyella	12,449	13,000	124.2	129.5	13,174	13,190	13,085	133.0	133.2	132.1	190	1.5%	3.6	2.8%
Blackwater	9,550	9,712	78.3	81.0	10,129	10,121	10,126	83.5	83.6	83.5	409	4.2%	2.5	3.1%
Moura	2,178	2,146	18.2	18.0	2,307	2,313	2,309	19.3	19.4	19.3	167	7.8%	1.4	7.8%
CQCN	28,726	29,786	251.4	261.7	30,335	30,442	30,351	267.4	268.4	267.4	656	2.2%	6.7	2.6%

Better ⬆   Marginal Change ➡   Worse ⬇

While there is some minor variability in results between years, using the comparable year of FY24 between the 2021 ICAR and ACAR results shows:

- at CQCN level there has been a 2.2% increase in train paths which equates to a 6.7 Mtpa increase in DNC;
- minor deterioration in Newlands/GAPE;
- a 1.5% increase in Train Paths in Goonyella however a 2.8% increase in tonnes (expected payload improvement);

- a 4.2% increase in Train paths in Blackwater however a 3.2% increase in tonnes (expected payload reduction); and
- a 7.8% increase in Moura.

Mainline and Branch Line Level

Figure 5 shows the DNC in Train Paths by mainline and branch line for all Coal Systems for the five-year assessment period.

Figure 6 shows the DNC in Tonnes by mainline and branch line for all Coal Systems for the five-year assessment period.

Figure 7 shows the ECD in Train Paths by mainline and branch line for each Coal System for the five-year assessment period.

The DNC at mainline and branch line level incudes any cross-system traffic (where it occurs) and the values may differ slightly to the Coal System only values.

The increases at mainline level in DNC are consistent with the Coal System results. Given there has been minimal changes in the Committed Capacity profile between the 2021 ICAR and 2022 ACAR, and little to no change in key infrastructure in the Network, the DNC trends for the assessment period is showing similar results to the 2021 ICAR.

Figure 5   DNC in Train Paths by mainline and branch line for all Coal Systems

Port of Abbot Point
North Queensland Export Terminal

COAL NETWORK CAPACITY CO.

	FY23	FY24	FY25	FY26	FY27
1	2,011	2,114	2,045	2,047	2,049
1A	2,011	2,114	2,045	2,047	2,049
1B	2,011	2,114	2,045	2,047	2,049

	FY23	FY24	FY25	FY26	FY27
2A	2,716	2,707	2,783	2,791	2,785

Port of Mackay
Dalrymple Bay Coal Terminal
Hay Point Coal Terminal

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
Newlands	1. Collinsville to Pring*	1A: Pring to Abbot Point 1B: Newlands Junction to Collinsville
GAPE	1. Collinsville to Pring*	2A: North Goonyella Junction to Newlands Junction
Goonyella	3. Coppabella to Jilalan	3A: Jilalan to Port of Hay Point 3B: Hail Creek Mine to South Walker Creek Junction 3C: Oaky Creek Junction to Coppabella 3D: Coppabella to Wotonga 3E: North Goonyella Mine to Wotonga 3F: Blair Athol Mine to Wotonga
Blackwater	4. Bluff to Callemondah	4A: Callemondah to Port of Gladstone, including domestic coal terminals in vicinity (South Gladstone Junction) 4B: Burngrove to Bluff 4C: Rolleston Mine to Rangal 4D: Oaky Creek Junction to Burngrove 4E: Minerva Mine to Burngrove
Moura	5. Dumgree to Callemondah	5A: Dumgree to Earlsfield 5B: Earlsfield to Callide 5C: Earlsfield to Moura

* The GAPE Coal System uses the Newlands Coal System mainline and branch lines

	FY23	FY24	FY25	FY26	FY27
3	13,203	13,187	13,190	13,170	13,089
3A	13,203	13,187	13,190	13,170	13,089
3B	1,508	1,564	1,555	1,584	1,589
3C	5,135	5,093	5,148	5,267	5,132
3D	6,196	6,147	6,092	5,924	5,973
3E	3,180	3,367	3,190	2,964	3,209
3F	2,484	2,246	2,347	2,386	2,214

	FY23	FY24	FY25	FY26	FY27
4	10,104	10,132	10,126	10,105	10,125
4A	9,667	9,694	9,689	9,668	9,687
4B	10,104	10,132	10,126	10,105	10,125
4C	4,115	4,072	4,059	4,096	4,119
4D	3,154	3,255	3,244	3,161	3,144
4E	I	I	I	I	I

Port of Gladstone
Wiggins Island Coal Terminal
RG Tanna Coal Terminal

	FY23	FY24	FY25	FY26	FY27
5	2,305	2,311	2,302	2,303	2,306
5A	2,305	2,311	2,302	2,303	2,306
5B	■	■	■	■	■
5C	1,197	1,199	1,195	1,196	1,196

Legend

▬	Mainline
═	Branch line
■	Mainline Identifier
1A	Branch line Identifier
●	Location
^	Mine/TLO

Existing Infrastructure as at June 2022

Figure 6   DNC in Tonnes by mainline and branch line for all Coal System

Port of Abbot Point
North Queensland Export Terminal

COAL NETWORK CAPACITY CO.

1A Abbot Point
Pring
1

	FY23	FY24	FY25	FY26	FY27
1	13.5	14.3	13.9	13.9	13.9
1A	13.5	14.3	13.9	13.9	13.9
1B	13.5	14.3	13.9	13.9	13.9

1 NEWLANDS

McNaughton^
Sonoma^
Collinsville
Carmichael^
1B

	FY23	FY24	FY25	FY26	FY27
2A	18.1	18.1	18.5	18.6	18.5

Newlands Junction
Newlands^
Byerwen^
2A GAPE
Hail Creek^

Port of Mackay
Dalrymple Bay Coal Terminal
Hay Point Coal Terminal

3A Hay Point
Dalrymple Bay
Jilalan
3B
3

North Goonyella Junction   North Goonyella
Riverside^   Macarthur^   South Walker Creek^
3E Goonyella^   Burton Downs^   South Walker Creek Junction
Moranbah North^   **3D**   Coppabella
Wotonga   Moorvale^   **GOONYELLA**
Isaac Plains^   Carborough Downs^
Moranbah   Millennium^
Caval Ridge^
Peak Downs^   Olive Downs South^

	FY23	FY24	FY25	FY26	FY27
3	133.3	133.1	133.0	132.9	132.2
3A	133.3	133.1	133.0	132.9	132.2
3B	15.2	15.8	15.7	16.0	16.0
3C	51.9	51.4	51.9	53.1	51.8
3D	62.6	62.1	61.4	59.8	60.3
3E	32.1	34.0	32.2	29.9	32.4
3F	25.1	22.7	23.7	24.1	22.4

Saraji^
Lake Vermont Junction   Lake Vermont^
3F
Blair Athol Mine^
3C
Terracom^   Norwich Park^   Middlemount^
Middlemount Junction
German Creek^

Oaky Creek Junction   Oaky Creek
Gregory^
Gregory Junction
Gordonstone (Kestrel)^
4D

	FY23	FY24	FY25	FY26	FY27
4	83.3	83.6	83.6	83.4	83.5
4A	79.7	80.0	80.0	79.8	79.9
4B	83.3	83.6	83.6	83.4	83.5
4C	33.9	33.6	33.5	33.8	34.0
4D	26.0	26.9	26.8	26.1	25.9
4E	■	■	■	■	■

Ensham^   **4B** Boonal^   Stanwell   Rocklands
Burngrove   Curragh^   Bluff
Rangal   Blackwater^   **BLACKWATER**   Stanwell
Boorgoon^   Koorilgah^   **4**   Balloon^   Barjool
4E   Kinrola^   Raglan
Minerva Mine^   Mt Larcom   Callemondah
East End   **4A**
Yarwun

Wiggins Island Coal Terminal
RG Tanna Coal Terminal

4C
5A
Earlsfield   Dumgree
Meteor Downs South^   Boundary Hill^   **5** MOURA
5C   Callide   Callide Coalfield^
5B

Rolleston^

Baralaba Coal^
Moura   Moura Mine^

	FY23	FY24	FY25	FY26	FY27
5	19.3	19.4	19.3	19.3	19.3
5A	19.3	19.4	19.3	19.3	19.3
5B	■	■	■	■	■
5C	10.0	10.0	10.0	10.0	10.0

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
Newlands	1. Collinsville to Pring*	1A: Pring to Abbot Point 1B: Newlands Junction to Collinsville
GAPE	1. Collinsville to Pring*	2A: North Goonyella Junction to Newlands Junction
Goonyella	3. Coppabella to Jilalan	3A: Jilalan to Port of Hay Point 3B: Hail Creek Mine to South Walker Creek Junction 3C: Oaky Creek Junction to Coppabella 3D: Coppabella to Wotonga 3E: North Goonyella Mine to Wotonga 3F: Blair Athol Mine to Wotonga
Blackwater	4. Bluff to Callemondah	4A: Callemondah to Port of Gladstone, including domestic coal terminals in vicinity (South Gladstone Junction) 4B: Burngrove to Bluff 4C: Rolleston Mine to Rangal 4D: Oaky Creek Junction to Burngrove 4E: Minerva Mine to Burngrove
Moura	5. Dumgree to Callemondah	5A: Dumgree to Earlsfield 5B: Earlsfield to Callide 5C: Earlsfield to Moura

* The GAPE Coal System uses the Newlands Coal System mainline and branch lines

Legend

▬	Mainline
═	Branch line
■	Mainline Identifier
1A	Branch line Identifier
●	Location
^	Mine/TLO

Existing Infrastructure as at June 2022

Figure 7   ECD in Train Paths by mainline and branch line for all Coal Systems

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
Newlands	1. Collinsville to Pring*	1A: Pring to Abbot Point 1B: Newlands Junction to Collinsville
GAPE	1. Collinsville to Pring*	2A: North Goonyella Junction to Newlands Junction
Goonyella	3. Coppabella to Jilalan	3A: Jilalan to Port of Hay Point 3B: Hail Creek Mine to South Walker Creek Junction 3C: Oaky Creek Junction to Coppabella 3D: Coppabella to Wotonga 3E: North Goonyella Mine to Wotonga 3F: Blair Athol Mine to Wotonga
Blackwater	4. Bluff to Callemondah	4A: Callemondah to Port of Gladstone, including domestic coal terminals in vicinity (South Gladstone Junction) 4B: Burngrove to Bluff 4C: Rolleston Mine to Rangal 4D: Oaky Creek Junction to Burngrove 4E: Minerva Mine to Burngrove
Moura	5. Dumgree to Callemondah	5A: Dumgree to Earlsfield 5B: Earlsfield to Callide 5C: Earlsfield to Moura

* The GAPE Coal System uses the Newlands Coal System mainline and branch lines

NEWLANDS

	FY23	FY24	FY25	FY26	FY27
1	1,114	1,021	1,070	1,068	1,078
1A	1,114	1,021	1,070	1,068	1,078
1B	1,114	1,021	1,070	1,068	1,078

GAPE

	FY23	FY24	FY25	FY26	FY27
2A	1,630	1,650	1,563	1,555	1,571

GOONYELLA

	FY23	FY24	FY25	FY26	FY27
3	651	882	782	831	964
3A	651	882	782	831	964
3B	-	-	-	-	-
3C	494	546	518	555	569
3D	268	489	437	455	562
3E	-	69	32	23	93
3F	194	301	292	312	325

BLACKWATER

	FY23	FY24	FY25	FY26	FY27
4	281	226	117	23	6
4A	353	298	189	95	78
4B	281	226	117	23	6
4C	122	121	63	20	10
4D	101	39	15	-	-
4E	▮	▮	▮	▮	▮

MOURA

ECD	FY23	FY24	FY25	FY26	FY27
5	23	24	26	25	29
5A	23	24	26	25	29
5B	▮	▮	▮	▮	▮
5C	25	26	28	26	29

Legend

| Symbol	Meaning
—	Mainline
=	Branch line
▮	Mainline Identifier
1A	Branch line Identifier
●	Location
^	Mine/TLO

Existing Infrastructure as at June 2022

Capacity Deficits

The DNC, as a measure against Committed Capacity (i.e. the ability of the rail infrastructure to meet its contracted capacity), for the ACAR at CQCN and Coal System level is shown in **figure 8**. For FY23 and FY24, the 2021 ICAR values for those two years are also shown.

There has been minimal material change to the Committed Capacity since the 2021 ICAR.

Figure 8   % DNC of Committed Capacity (Contract Realisation)
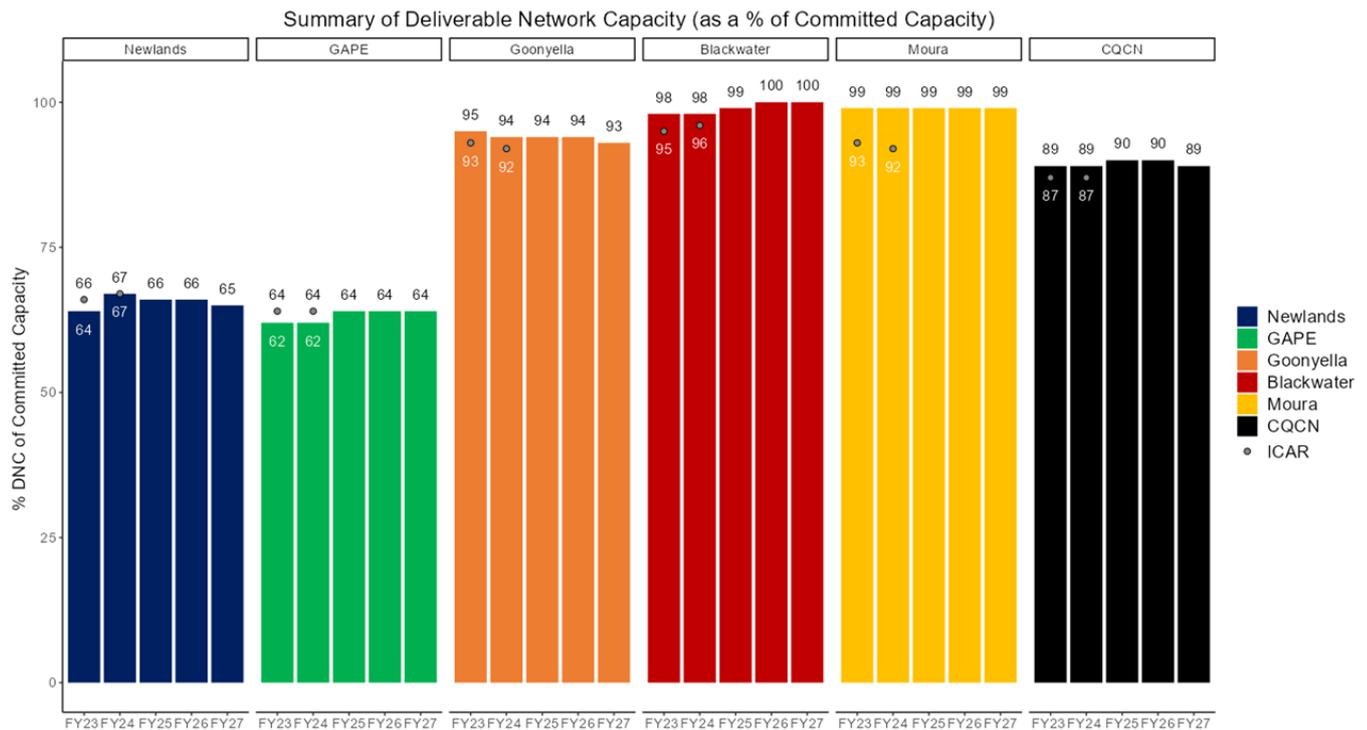
Results indicate:

- The DNC achievement as a percentage of Committed Capacity has improved for the CQCN as compared against the 2021 ICAR results for FY23/FY24 by ~ 2% to ~89% overall;
- Newlands is lower in FY23 compared to 2021 ICAR however similar for other years;
- GAPE is slightly lower for FY23 and FY24 then at similar levels for other years;
- Goonyella has improved by ~ 2% to now be ~ 93 -95% achievement to Committed Capacity;
- Blackwater has improved by ~ 2-4% and will be at ~100% achievement of Committed Capacity in FY26; and
- Moura has improved by ~ 7% and is now at ~99% achievement of Committed Capacity

More detailed information on the determination and results for each Coal System is provided in **sections 5 – 9** of this report.

3.1.2   Key DNC Changes from 2021 ICAR

The ACAR is an annual assessment of the Deliverable Network Capacity and a key information source for industry on what may have changed from the previous capacity assessment. Given the 2021 ICAR was finalised in late 2021, there has been less than six-month time lapse before this ACAR. In future, it will move to an annual 12-month assessment between periods. As a result, the most significant change to this ACAR has been an extensive update to the operational data driving the SOP assumptions.

Table 2 summarises key model input data changes for the ACAR as compared to the 2021 ICAR for each Coal System.

Operational Data Changes

Table 2   Key data summary

Key Operating Parameter		Measure	Change from 2021 ICAR				
			Newlands	GAPE	Goonyella	Blackwater	Moura
Demand	Committed Capacity	Train Paths	→	→	→	→	→
Rail Infrastructure	Sectional Run Times - Coal	Minutes	→	→	→	→	→
	Sectional Run Times - Non-coal	Minutes	→	→	→	↑	→
Train Loadouts (TLO)	Expected Payload	Tonnes	↓	→	↑	↓	→
	TLO Gross Load Rate	Tonnes / Minute	→	→	↑	↑	→
	TLO Planned Maintenance	Hours	↑	↑	↑	↑	↓
Inloaders (IL)	IL Unload Rate	Tonnes / Minute	↑	↑	→	↑	↑
	IL Planned Maintenance	Hours	→	→	→	→	→
Below Rail Operations	Planned Maintenance	Hours	↑	↑	→	↑	↑
	Full System Shuts	Hours	↑	↑	↓	↓	↑
	Signalling		→	→	→	→	→
Above Rail Operations	Yard Provisioning Times	Minutes	→	→	→	↑	↑
Non-coal Traffic	Timetables	Train Paths	→	→	→	↑	→
System Delays	General Delays	Minutes / 100 km	↑	↑	↑	↑	↑
	Crew Change Delays	Minutes	↑	↑	↑	↑	↑
	Temporary Speed Restrictions	Minutes / 100 km	↓	↓	↓	↓	↓
	Cancellations	%	↓	↓	↓	↓	↓

Better ↑   Marginal Change →   Worse ↓

Figure 9 shows the train cycle times (noting this is at maximum Committed Capacity) change from the 2021 ICAR to the ACAR for each Coal System.

Figure 9   Cycle Time comparison CQCN

Time Measure	Change from 2021 ICAR				
	Newlands	GAPE	Goonyella	Blackwater	Moura
Cycle Time	↓ 3%	↓ 5%	↑ -2%	↑ -8%	↑ -7%

Better ↑   Marginal Change →   Worse ↓

The consist numbers have remained unchanged since the 2021 ICAR, except for Blackwater where it has reduced by 2 at maximum Committed Capacity. Modelled cycle time has improved for Goonyella, Blackwater and Moura and increased for Newlands and GAPE.

More detail is provided in each Coal System level on key areas of impact.

Committed Capacity Changes

The determined DNC is compared against the Committed Capacity (contract demand) to determine the ability of the rail infrastructure to meet the contracted demand.

There has been no material change to the Committed Capacity from the 2021 ICAR to the ACAR as shown in **table 3.**

Table 3 Committed Capacity Comparison

| Coal System | Committed Capacity - FY24 | | | | | |
| | 2021 ICAR | | 2022 ACAR | | Difference | |
	(Train Paths)	(Tonnes)	(Train Paths)	(Tonnes)	(Train Paths)	(Tonnes)
Newlands	3,166	21.4	3,134	21.2	➡ (32)	⬇ (0.3)
GAPE	4,398	29.5	4,356	29.1	➡ (42)	⬇ (0.4)
Goonyella	14,099	140.5	14,069	142.0	➡ (30)	⬆ 1.6
Blackwater	10,155	84.7	10,357	85.5	⬆ 202	⬆ 0.8
Moura	2,345	19.6	2,334	19.6	➡ (11)	⬇ (0.1)
CQCN	**34,163**	**295.8**	**34,250**	**297.3**	⬆ **87**	⬆ **1.6**

Increase ⬆   Marginal Change ➡   Decrease ⬇

Given the timeframe between the 2021 ICAR and ACAR is relatively short, it is not surprising that overall, there has been minimal movement in the total Committed Capacity for CQCN of an increase of 87 Train paths (0.25%) with Blackwater the highest change at ~ 2%. While the total Committed Capacity has seen minimal movements, there are a number of transfers that have occurred between Access Holders. The likely relinquishments for the Blackwater Coal System, that were identified as part of the TA process, are not included in this data as they cannot be finalised until QCA make its determination.

Changes to Existing Capacity Deficits – ICAR to ACAR

Given that the TAs are yet to be finalised, this ACAR has not included any additional Transitional Arrangement opportunities to increase DNC. The optimised ballast cleaning machine program TA initiative has been included in the ACAR as an operational improvement. However, to provide the industry with some indication of what the impact of the new ACAR DNC analysis has compared to the 2021 ICAR results, the following is offered in **table 4.** FY24 is used for comparison purposes on the basis that many of the likely TAs will be implemented in this period noting that values may vary to some of the other assessment years.

Table 4   FY24 Capacity Deficit Variations 2022 ACAR to 2021 ICAR

| Coal System | Contract Realisation | | | Deficit | | |
	2021 ICAR	2022 ACAR	Difference (%)	2021 ICAR	2022 ACAR	Difference (Mtpa)
Newlands	67%	67%	➡ 0%	7.0	6.9	➡ (0.1)
GAPE	64%	62%	⬇ -2%	10.7	11.0	⬇ 0.3
Goonyella	92%	94%	⬆ 2%	11.0	8.9	⬆ (2.1)
Blackwater	96%	98%	⬆ 2%	3.7	2.0	⬆ (1.7)
Moura	92%	99%	⬆ 8%	1.7	0.2	⬆ (1.5)
CQCN	**87%**	**89%**	⬆ **2%**	**34.1**	**28.9**	⬆ **(5.1)**

Better ⬆   Marginal Change ➡   Worse ⬇

There has been an improvement in overall contract realisation of ~ 2% for the CQCN between the 2021 ICAR and ACAR for FY24 (87% to 89%). The identified 2021 ICAR Existing Capacity Deficit was ~ 34Mtpa and this has now reduced by ~ 5 Mtpa to ~ 29 Mtpa, noting that the ECD in Train paths, not tonnes, is required to be resolved.

4.   Impact on Deficit and Improvement Areas

The changes in the ACAR DNC from the 2021 ICAR results has some bearing on future decisions for the industry. To that end, a high-level analysis has been undertaken on a number of key parameters and scenarios to provide the industry with insight into key focus areas and likely future changes that will impact the network capacity.

Key areas of review are:

- Likely ICAR Transitional Arrangement (TA) impact; and
- Key potential improvement areas.

4.1   Future Transitional Arrangement Impact

2021 ICAR Existing Capacity Deficit

The 2021 ICAR determined that ECDs existed for all Coal Systems. UT5 outlines the process for the industry, QCA and the Independent Expert to address any ECD's from the ICAR. It should be noted that the identified 2021 ICAR ECD is the deficit that must be resolved as outlined in UT5.

Figure 10 shows the 2021 ICAR DNC, Committed Capacity and ECD for FY23 and FY24 in Train Paths and **figure 11** in tonnes.

Figure 10   ICAR Capacity Results (Train Paths)
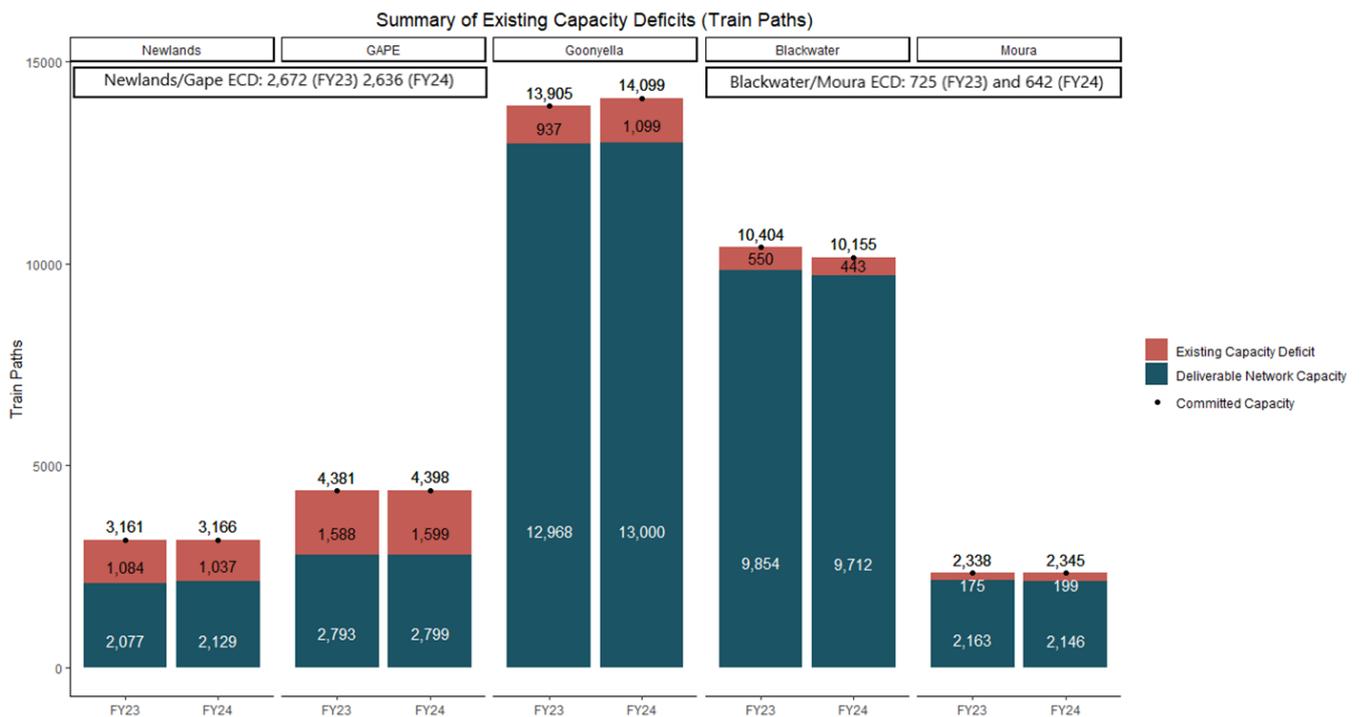
Figure 11   ICAR Capacity Results (Tonnes)
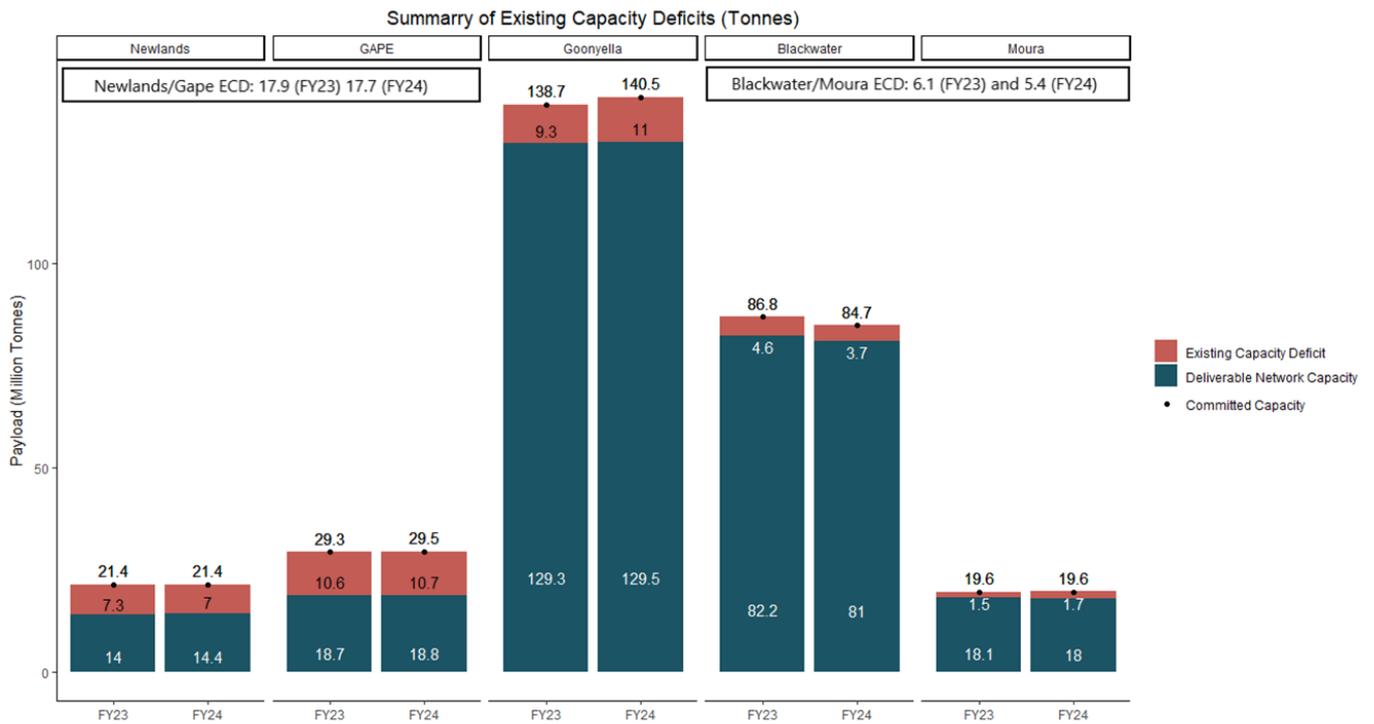
Transitional Arrangements to Resolve Existing Capacity Deficit

Aurizon Network issued their Detailed Response to the ICAR on 14 March 2022. Aurizon Network have made recommendations on which TAs they believe should be implemented to remedy the identified ECDs. Aurizon Network recommended the following TAs for each Coal System:

Newlands/GAPE

Stage 1

- Installation of RCS signalling
- Optimised ballast cleaning machine program
- Collinsville Passing Loop extension (day-time operations)

Stage 2

- Collinsville Passing Loop (24-hour operations)
- Coral Creek Passing Loop

Stage 3

- Pring Yard additional road

Goonyella

Stage 1

- Optimised ballast cleaning machine program
- Jilalan Yard scheduling improvements

- Connors Range track strengthening (headway reduction)

Stage 2

- Connors Range track stability
- Jilalan yard additional road
- Removal of operating restrictions on Balloon Loops

Blackwater/Moura

Stage 1

- Optimised ballast cleaning machine program
- Callemondah Yard scheduling improvements

Stage 2

- Callemondah Yard additional road
- Moura provisioning at Stirrit

The Independent Expert provided its recommendations on Transitional Arrangements to the QCA on 17 June 2022.

Impact on Transitional Arrangements

Model runs based on the ACAR were undertaken assuming the Stage 1 projects for each Coal System were implemented (noting the QCA will make any final recommendations). **Table 5** shows the impact on deficits:

Table 5   Impact of Transitional Arrangements (Stage 1).

Coal System	Contract Realisation			Comments
	2022 ACAR	**Change**	**Stage 1 TAs**	
Newlands	67%	17%	84%	Significant increase in achievement.
GAPE	62%	16%	79%	
Goonyella	94%	1%	95%	Reduces ECD with further Stage 2 projects needed to resolve.
Blackwater	98%	5%	103%	Now meeting Committed Capacity with relinquishments and Stage 1 projects implemented.
Moura	99%	0%	99%	Moura is very close to achieving Committed Capacity.
CQCN	89%	5%	94%	

What this shows is that the identified immediate Stage 1 TAs improve the ECD, however do not fully resolve the ECD's except in the Blackwater Coal System. For Goonyella Coal System the remaining deficit is ~ 5% of committed capacity or ~ 7 Mtpa. For Newlands/GAPE there remains ~ 17% of deficit or ~ 9 Mtpa still to be resolved after the initial projects have been undertaken. Moura is showing that it will be within 1% or 0.2Mtpa of meeting Committed Capacity.

4.2   Key Potential Improvement Areas

The Independent Expert has exercised judgement on a large range of issues in arriving at developing its assumptions and conclusions in this ACAR. These relate to, among other things, the assumptions regarding the interpretation of the operational data, preparation of the SOP, the assessment of how the CQCN operates in

practice and the interpretation of the various factors that the Independent Expert must have regard to in deriving the DNC of each Coal System.

The Independent Expert has built on the initial DSM that was used for the 2021 ICAR and made a number of enhancements and changes.

Since the 2021 ICAR was completed, there has been considerable engagement with industry as part of the Transitional Arrangements process and also as part of sourcing the latest industry data. From this there still remains a number of opportunities to improve the DSM. Some of these are listed below and will be a focus before the 2023 ACAR is finalised:

- Work with Integrated Logistics Company (ILC) and AN on key model assumptions around 'safe to stop' methodology;

- Work with AN and the Rail Industry Group on detailed planned maintenance data for future years (i.e., more than 12 months) to make future year DNC estimates more accurate;

- Work with AN on capturing more detailed data on "moving maintenance" e.g. hi rail, moving equipment to site and rail grinding operations in terms of utilisation of committed paths/or scheduling between;

- Undertake further analysis of yard operations and stowage impact on DNC and consider if these inclusions could potentially enhance the DSM;

- Ensure the DSM can fully capture the outcomes of the DBCT delivery window improvement works;

- Undertake further analysis of terminal operations (separate to Supply Chain model development) to determine if there are any terminals where there is a hybrid operation that impacts even railing assumptions; and

- Work with AN, Above Rail operators and supply chain participants on a more detailed level of data for cancellations, general delays, unplanned maintenance and emergency possessions to ensure data is captured by the primary cause.

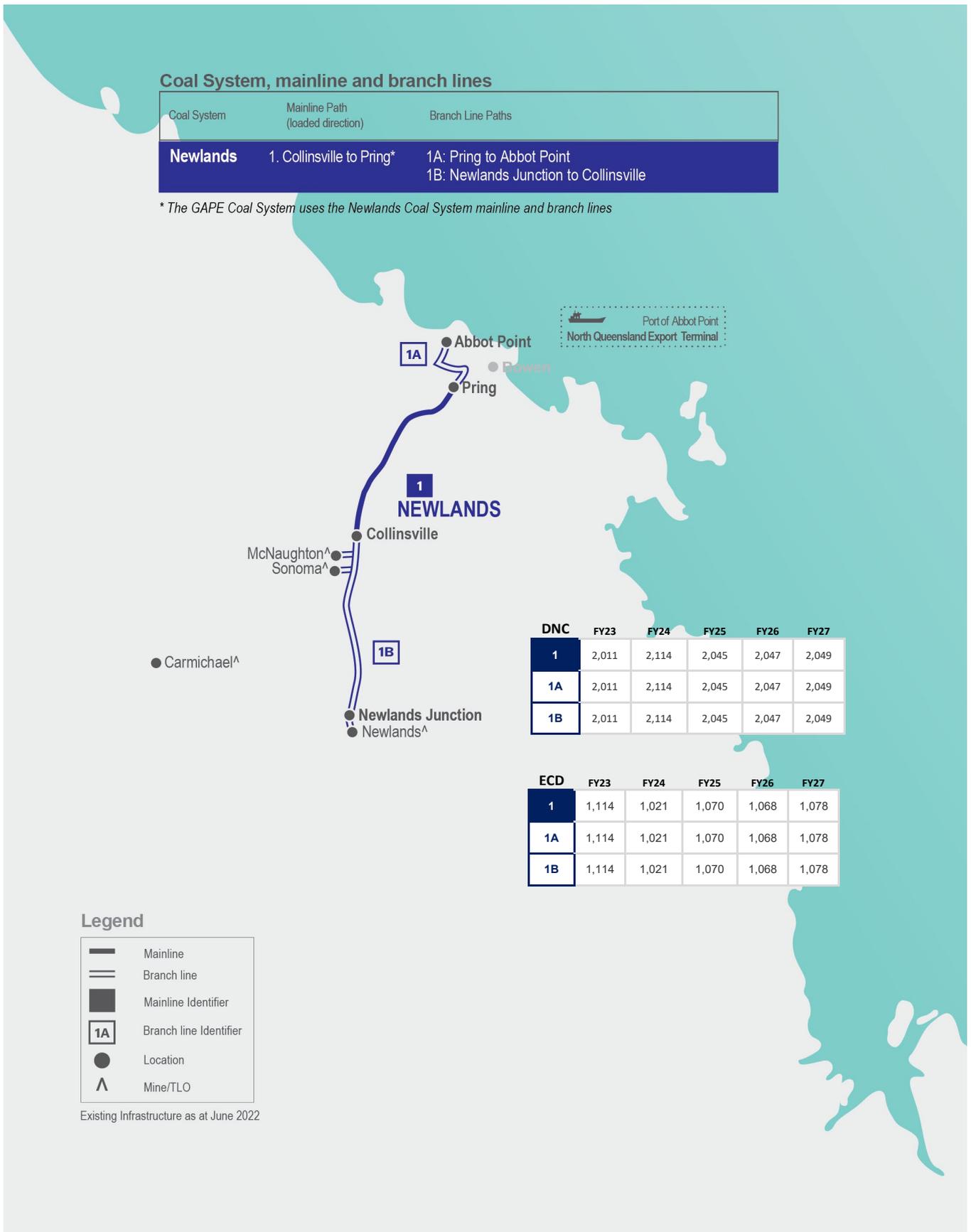# 5. Newlands Coal System

5.1 Overview of Coal System

A map of the Newlands Coal System is provided in **figure 12**. It shows the Coal System and each mainline and branch line that makes up the Newlands Coal System with the DNC and ECD for each for the five-year assessment period.

The Newlands Coal System refers to the Rail Infrastructure comprising the rail corridor from the terminal at NQXT to Newlands Mine. The Newlands Coal System Rail Infrastructure is also used by GAPE Coal System traffic.

The major changes considered since the 2021 ICAR are:

- included the latest historical data in analysis;

- optimised ballast cleaning program included;

- improved modelling around terminal operations for inloaders;

- included the introduction of the BRC yard actual location; and

- used updated contract demand information.

Figure 12   Newlands Coal System

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
Newlands	1. Collinsville to Pring*	1A: Pring to Abbot Point 1B: Newlands Junction to Collinsville

The GAPE Coal System uses the Newlands Coal System mainline and branch lines

DNC	FY23	FY24	FY25	FY26	FY27
1	2,011	2,114	2,045	2,047	2,049
1A	2,011	2,114	2,045	2,047	2,049
1B	2,011	2,114	2,045	2,047	2,049

ECD	FY23	FY24	FY25	FY26	FY27
1	1,114	1,021	1,070	1,068	1,078
1A	1,114	1,021	1,070	1,068	1,078
1B	1,114	1,021	1,070	1,068	1,078

Legend

▬	Mainline
═	Branch line
■	Mainline Identifier
1A	Branch line Identifier
●	Location
∧	Mine/TLO

Existing Infrastructure as at June 2022

5.2 Deliverable Network Capacity

5.2.1 Coal System Level

The DNC, Committed Capacity and ECD for Newlands Coal System for the FY23 to FY27 assessment period is shown in **figure 13** in Train paths and **figure 14** in Tonnes. A comparison with the 2021 ICAR results for FY23 and FY24 is also shown.

Figure 13   Newlands summary for FY23 to FY27 (Train Paths)

**Figure 14   Newlands summary for FY23 to FY27 (Tonnes)**
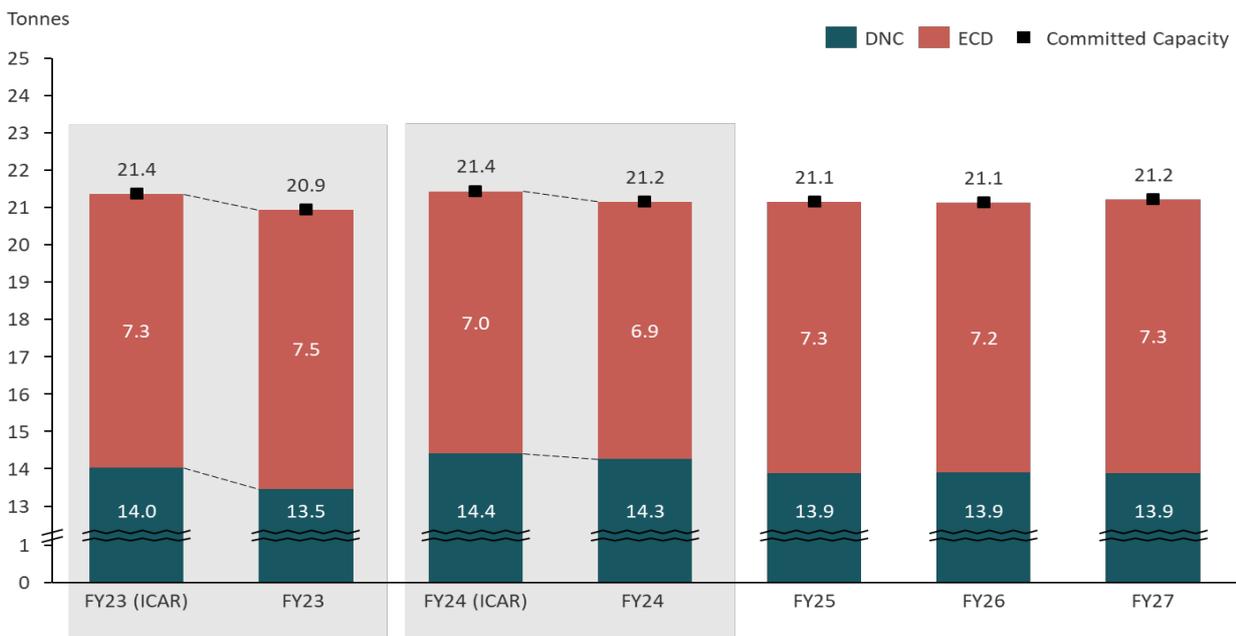
In summary:

- The Committed Capacity has remained basically unchanged from the ICAR for FY23 and FY24 at ~ 21 Mtpa;

- The DNC has decreased slightly in FY23 as compared to 2021 ICAR however is similar for FY24. This is due primarily to a deterioration in operational data performance around cancellations, TSR frequency and reduction in expected payload;

- The maximum achievement of Committed Capacity occurs in FY24 at 67% however then settles to ~ 66% for balance of years similar to 2021 ICAR results;

- FY24 has the highest achieved DNC; and

- The ECD has remained similar to ICAR at ~ 7 Mtpa.

The DNC calculated for the Newlands Coal System by month for the five-year assessment period is shown in **Appendix A**.

The achievement of DNC by month, for the five-year assessment period, as a percentage of Committed Capacity is shown in **figure 15.** The ICAR results for FY23 and FY24 are also shown for comparison.

The percentage is the percent DNC of committed Train Paths. Where this value is less than 100%, the DNC representing the capacity of the Rail Infrastructure is not able to meet the Committed Capacity at a Coal System level.

Figure 15   Percent achievement DNC to Committed Capacity Newlands (monthly)
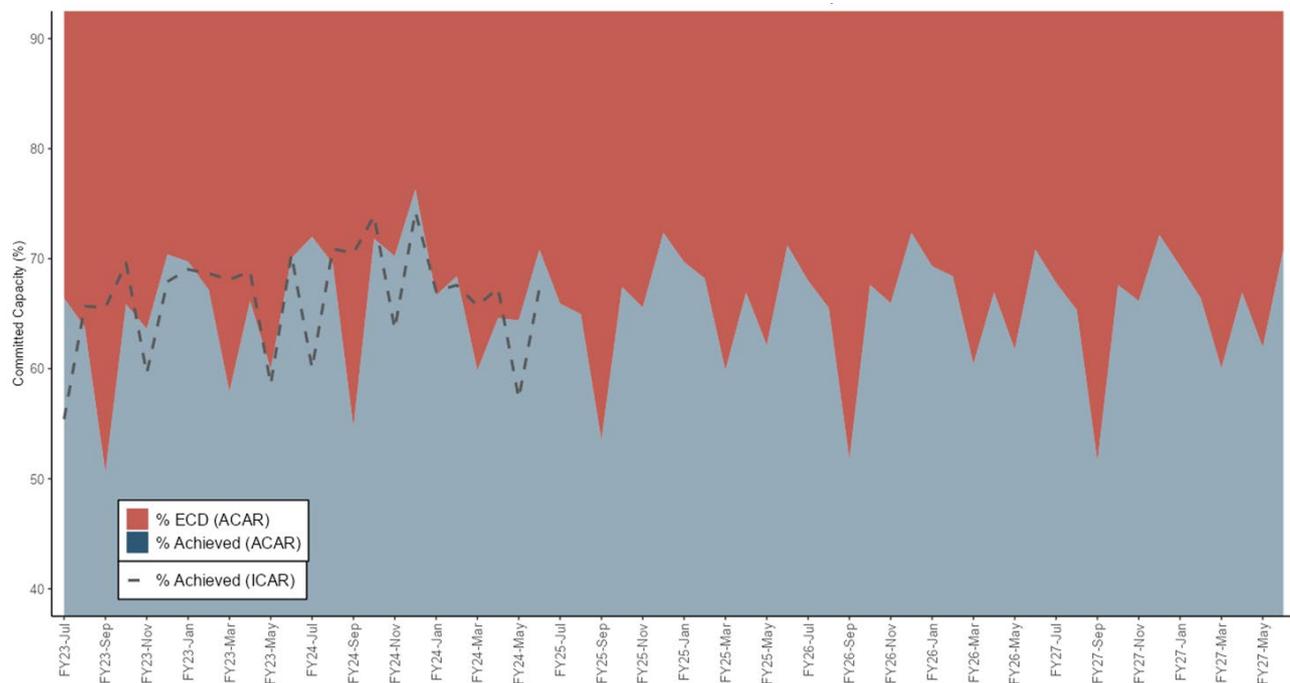
In Summary:

- There has been a slight deterioration in achievement to Committed Capacity for some months in FY23 and FY24 compared to 2021 ICAR results; and

- There are several months when DNC achievement can reach ~ 75% (~ 16 Mtpa) and this is typically when there is low planned maintenance for that period.

5.2.2 Mainline/Branch Line Level

The DNC calculated for Newlands Coal System by mainline and branch line by month and year for the five-year assessment period is shown in **Appendix A**.

While Newlands Coal System is shown separately, the DSM models Newlands Coal System and GAPE Coal Systems together, as there is some Rail Infrastructure that is common to both Coal Systems.

If an individual branch line or mainline is showing a DNC less than 100% for the year, this does not necessarily indicate that line of the Rail Infrastructure is unable to meet Committed Capacity. The DNC is calculated using the origin (mine) to destination (terminal) Train Path and if anywhere on that Train Path the Committed Capacity cannot be met it will influence the allocation of DNC to the branch line or mainline level.

There has been minimal change to the DNC levels for all main lines and branch lines in Newlands for FY23 and F24 between the ICAR and ACAR.

5.2.3 Origin/Destination Level

The Independent Expert is required to report the DNC by Coal System and mainline and branch line. The DNC has also been calculated for each origin/destination pair by month for the five-year assessment period. This is shown in **Appendix A**.

5.3 DNC Materiality Analysis

All operational data was analysed extensively for the ACAR. The key data changes since the 2021 ICAR for Newlands is shown in **table 6**. Commentary is provided on key changes.

Table 6   Newlands operational Data Comparison

Key Operating Parameter		Measure	Change from 2021 ICAR	Comments
Demand	Committed Capacity	Train Paths	➡	
Rail Infrastructure	Sectional Run Times - Coal	Minutes	➡	
	Sectional Run Times - Non-coal	Minutes	➡	
Train Loadouts (TLO)	Expected Payload	Tonnes	⬇	Slight reduction in expected payload with an increase in light loaded trains for some TLOs, however the data showed improvement in planned maintenance for some TLOs.
	TLO Gross Load Rate	Tonnes / Minute	➡	
	TLO Planned Maintenance	Hours	⬆	
Inloaders (IL)	IL Unload Rate	Tonnes / Minute	⬆	Expanded data set has shown improvements in unload rates.
	IL Planned Maintenance	Hours	➡	
Below Rail Operations	Planned Maintenance	Hours	⬆	RIG approved MRSB activities showed improvement in planned maintenance and full system shut hours.
	Full System Shuts	Hours	⬆	
Above Rail Operations	Yard Provisioning Times	Minutes	➡	
Non-coal Traffic	Timetables	Train Paths	➡	
System Delays	General Delays	Minutes / 100 km	⬆	The data shows that crew change delays and general delays have improved across all Coal Systems.
	Crew Change Delays	Minutes	⬆	
	Temporary Speed Restrictions	Minutes / 100 km	⬇	The data shows that the duration of TSRs has improved, however the frequency of TSR events has increased for all Coal Systems.
	Cancellations	%	⬇	Cancellation rates have deterioriated across all Coal Systems.

Better ⬆   Marginal Change ➡   Worse ⬇

For some key operating parameters, the sensitivity analysis in **figure 16** shows the impact to DNC of changes to these variables for Newlands Coal System.

Figure 16 Newlands sensitivity impact to DNC of key operating parameters
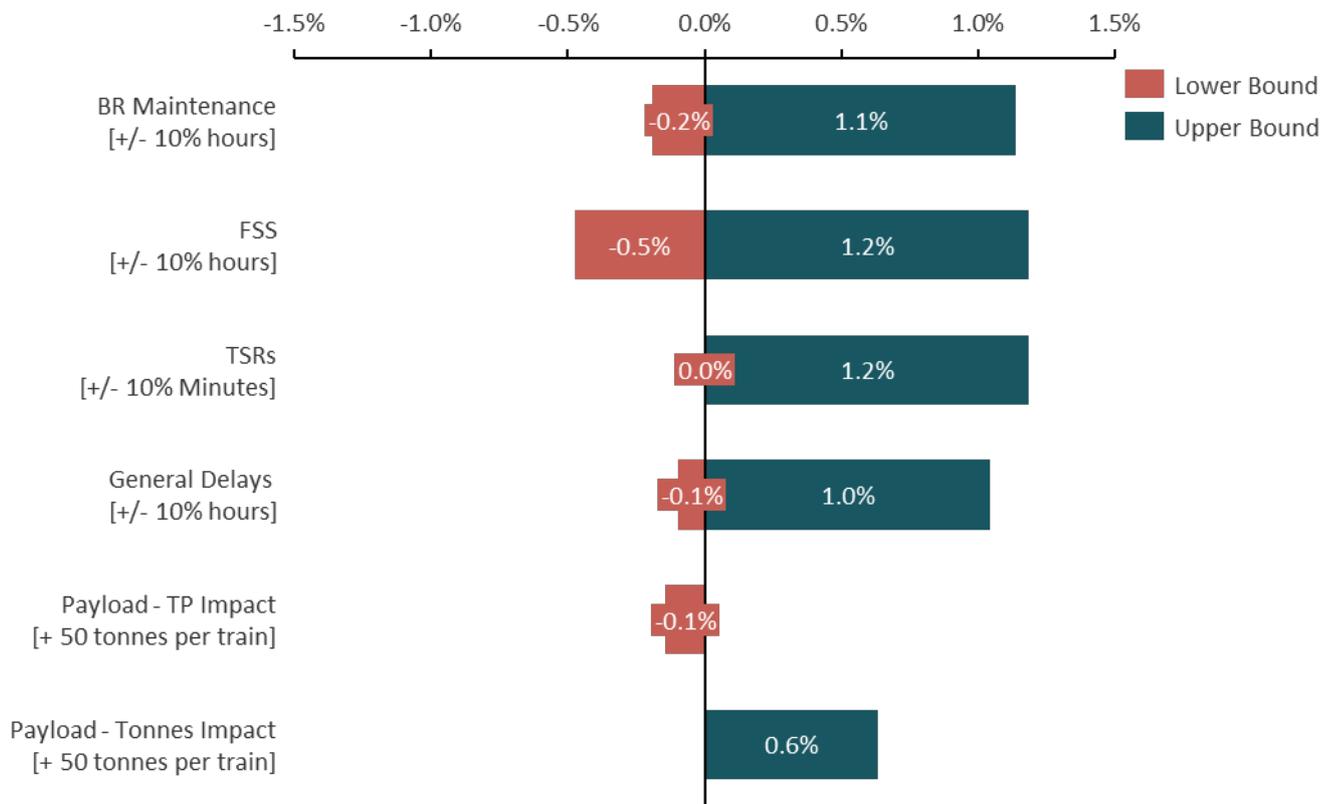
Summary:

- FSS hours and TSRs have the greatest impact on capacity at ~1.2% improvement if both see 10% improvement from current performance;

- A similar improvement would be realised in Below Rail maintenance hours; and

- An increase in expected payload of 50 tonnes per train would see a slight decrease in Train Path achievement (longer time to load and unload) however would improve total tonnes throughput by ~ 0.6%.

The modelled train cycle time changes for Newlands from 2021 ICAR to ACAR is shown in **figure 17** for FY24.

Figure 17   Cycle time comparison Newlands

Time Measure	Change from 2021 ICAR		Comments
Cycle Time	⬇	3%	Cycle Time is impacted by additional throughput in the Goonyella Coal System.

Better 🡑   Marginal Change 🡒   Worse 🡓

6.   GAPE Coal System

6.1   Overview of Coal System

A map of the GAPE Coal System is provided in **figure 18**. It shows the only branch line that makes up the GAPE Coal System with the DNC and ECD for each for the five-year assessment period. It also shows the branch lines that feed any Committed Capacity to the GAPE Coal System from the Goonyella Coal System and to the Newlands Coal System.
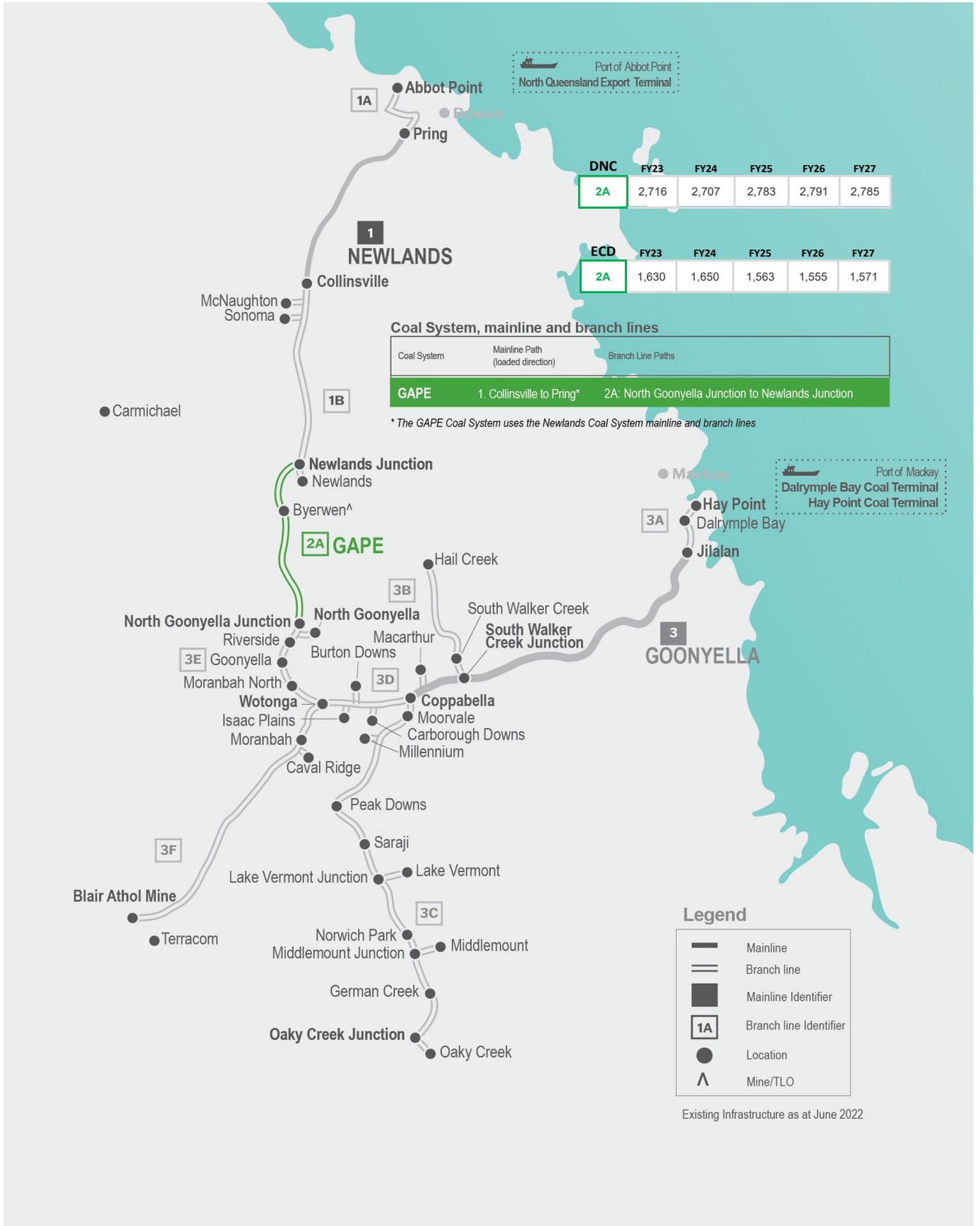
The GAPE Coal System refers to the Rail Infrastructure comprising the rail corridor from North Goonyella Junction to Newlands Junction. There are a number of contracts however that originate from the Goonyella Coal System that also traverse through the GAPE Coal System. These are via branch lines 3F Blair Athol Mine to Wotonga, 3E North Goonyella Mine to Wotonga, 3C Oaky Creek Junction to Coppabella and 3D Coppabella to Wotonga.

The Newlands Coal System Rail Infrastructure is also used by GAPE Coal System traffic.

The major changes considered since the 2021 ICAR are;

- included the latest historical data in analysis;
- optimised ballast cleaning program included;
- improved modelling around terminal operations for inloaders; and
- used updated contract demand information.

Figure 18   GAPE Coal system

DNC	FY23	FY24	FY25	FY26	FY27
2A	2,716	2,707	2,783	2,791	2,785

ECD	FY23	FY24	FY25	FY26	FY27
2A	1,630	1,650	1,563	1,555	1,571

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
GAPE	1. Collinsville to Pring*	2A: North Goonyella Junction to Newlands Junction

The GAPE Coal System uses the Newlands Coal System mainline and branch lines

Legend

▬	Mainline
▬	Branch line
■	Mainline Identifier
1A	Branch line Identifier
●	Location
∧	Mine/TLO

Existing Infrastructure as at June 2022

6.2 Deliverable Network Capacity

6.2.1 Coal System Level

The DNC, Committed Capacity and ECD for the GAPE Coal System for the FY23 to FY27 assessment period is shown in **figure 19** in Train paths and **figure 20** in Tonnes. A comparison with the 2021 ICAR results for FY23 and FY24 is also shown.

Figure 19   GAPE summary for FY23 to FY27 (Train Paths)
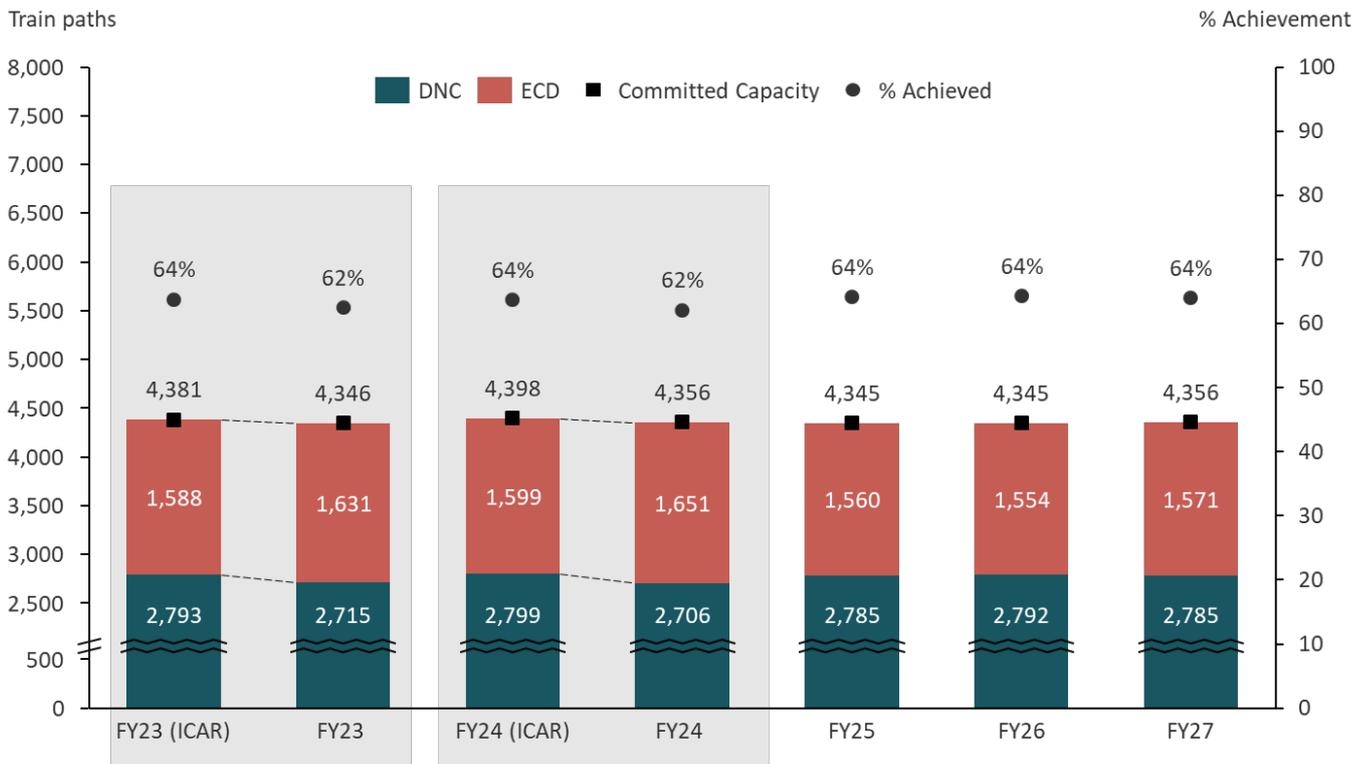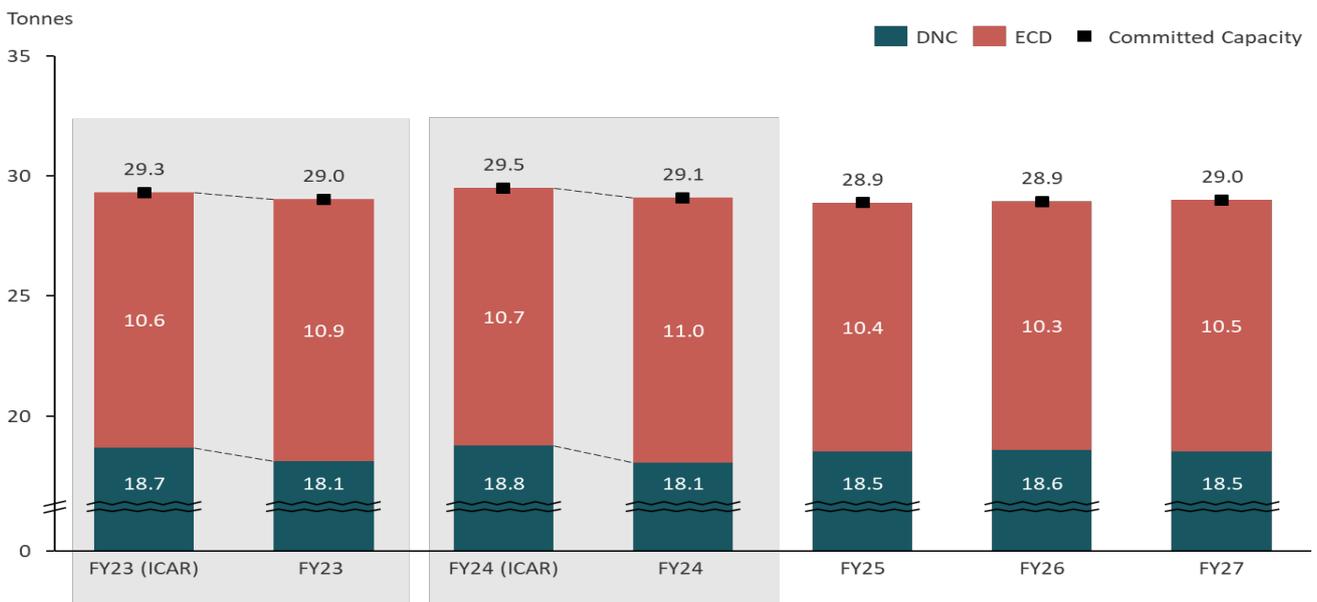

**Figure 20   GAPE summary for FY23 to FY27 (Tonnes)**

In summary;

- The Committed Capacity has remained relatively unchanged from the ICAR for FY23 and FY24 at 29 Mtpa;

- The DNC for FY23 and FY24 has decreased slightly from 2021 ICAR results;

- The maximum achievement of Committed Capacity occurs at 64% for most years; and

- FY26 has the highest achieved DNC at 18.6 Mtpa.

The DNC calculated for the GAPE Coal System by month for the five-year assessment period is shown in **Appendix B**.

The achievement of DNC by month, for the five-year assessment period, as a percentage of Committed Capacity is shown in **figure 21** below. The ICAR results for FY23 and FY24 are also shown for comparison.

Figure 21   Percent achievement DNC to Committed Capacity GAPE (monthly)
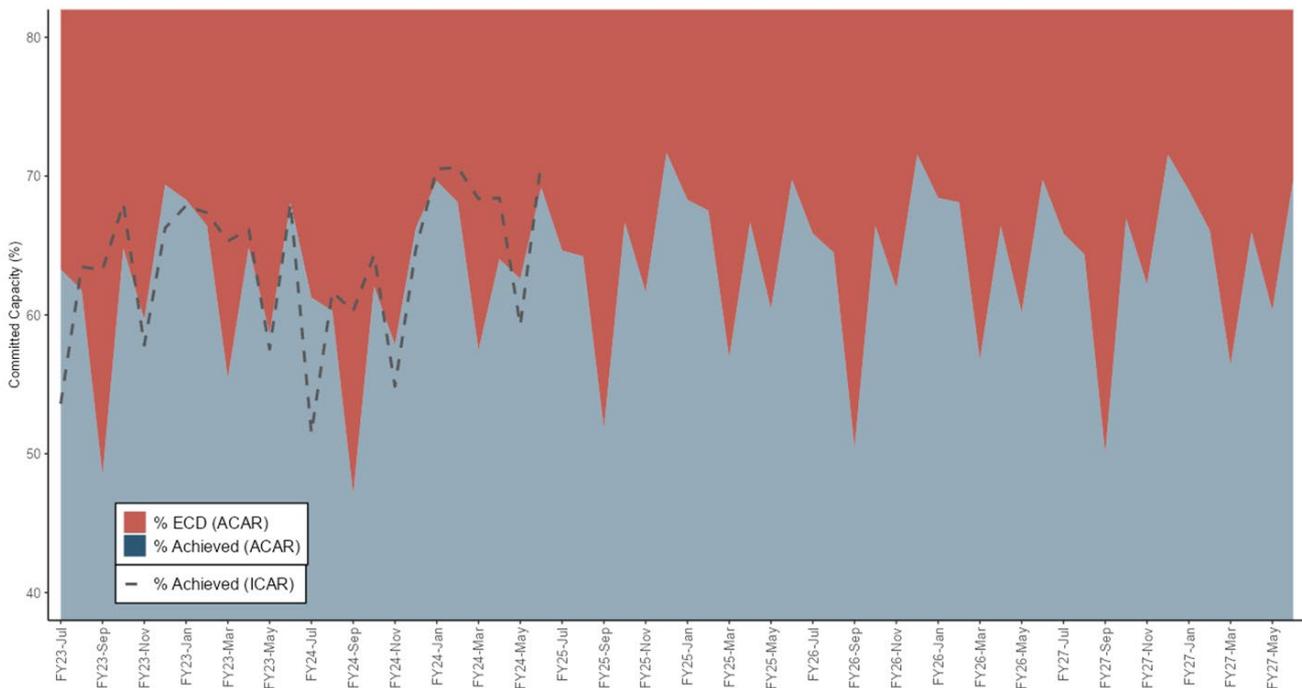
In Summary:

- There has been little change in achievement for FY23 and FY24 compared to ICAR, however a very small improvement overall for the five-year assessment period;

- There are several months when DNC achievement can reach ~ 75% (~ 20 Mtpa) and this is typically when there is low planned maintenance for that period; and

- For the months where maximum DNC is achieved for both Newlands and GAPE combined, then a DNC of ~ 36 Mtpa can be achieved at times.

6.2.2   Mainline/Branch Line Level

The DNC calculated for GAPE Coal System by mainline and branch line by month and year for the five-year assessment period is shown in **Appendix B**. Note – all branch lines that have an origin entering the GAPE Coal

System is shown and only branch line 2A North Goonyella Junction to Newlands Junction is considered GAPE Coal System infrastructure. The percentage is the percent DNC of committed Train Paths. Where this value is less than 100%, the DNC representing the capacity of the Rail Infrastructure is not able to meet the Committed Capacity at a Coal System level.

While GAPE Coal System is shown separately, the DSM models Newlands Coal System and GAPE Coal Systems together, as there is some critical Rail Infrastructure that is common to both Coal Systems.

If an individual branch line or mainline is showing a DNC less than 100% for the year, this does not necessarily indicate that line of the Rail Infrastructure is unable to meet Committed Capacity. The DNC is calculated using the origin (mine) to destination (terminal) Train Path and if anywhere on that Train Path the Committed Capacity cannot be met it will influence the allocation of DNC to the branch line or mainline level.

There has been minimal change to the DNC levels for all main lines and branch lines in GAPE for FY23 And F24 between the ICAR and ACAR.

6.2.3 Origin/Destination Level

The IE is required to report the DNC by Coal System and mainline and branch line. However, given Below Rail contracts are at origin/destination level the DNC has been calculated for each origin/destination pair by month for the five-year assessment period. This is shown in **Appendix B**.

6.3 DNC Materiality Analysis

All operational data was analysed extensively for the ACAR. The key data changes since the ICAR is shown in **Table 7** below. Commentary is provided in the table on key areas of change.

Table 7   **GAPE operational Data Comparison**

Key Operating Parameter		Measure	Change from 2021 ICAR	Comments
Demand	Committed Capacity	Train Paths	➡	
Rail Infrastructure	Sectional Run Times - Coal	Minutes	➡	
	Sectional Run Times - Non-coal	Minutes	➡	
Train Loadouts (TLO)	Expected Payload	Tonnes	➡	Limited change to Expected Payload in the ACAR data, however the data showed improvement in planned maintenance for some TLOs.
	TLO Gross Load Rate	Tonnes / Minute	➡	
	TLO Planned Maintenance	Hours	⬆	
Inloaders (IL)	IL Unload Rate	Tonnes / Minute	⬆	Expanded data set has shown improvements in Unload Rates.
	IL Planned Maintenance	Hours	➡	
Below Rail Operations	Planned Maintenance	Hours	⬆	RIG approved MRSB activities showed improvement in planned maintenance and full system shut hours.
	Full System Shuts	Hours	⬆	
Above Rail Operations	Yard Provisioning Times	Minutes	➡	
Non-coal Traffic	Timetables	Train Paths	➡	
System Delays	General Delays	Minutes / 100 km	⬆	The data shows that crew change delays and general delays have improved across all Coal Systems.
	Crew Change Delays	Minutes	⬆	
	Temporary Speed Restrictions	Minutes / 100 km	⬇	The data shows that the duration of TSRs has improved, however the frequency of TSR events has increased for all Coal Systems.
	Cancellations	%	⬇	Cancellation rates have deterioriated across all Coal Systems.

Better ⬆ Marginal Change ➡ Worse ⬇

For the key operating parameters, the sensitivity analysis in **figure 22** shows the impact to DNC of changes to these variables.

Figure 22   GAPE sensitivity impact to DNC of key operating parameters
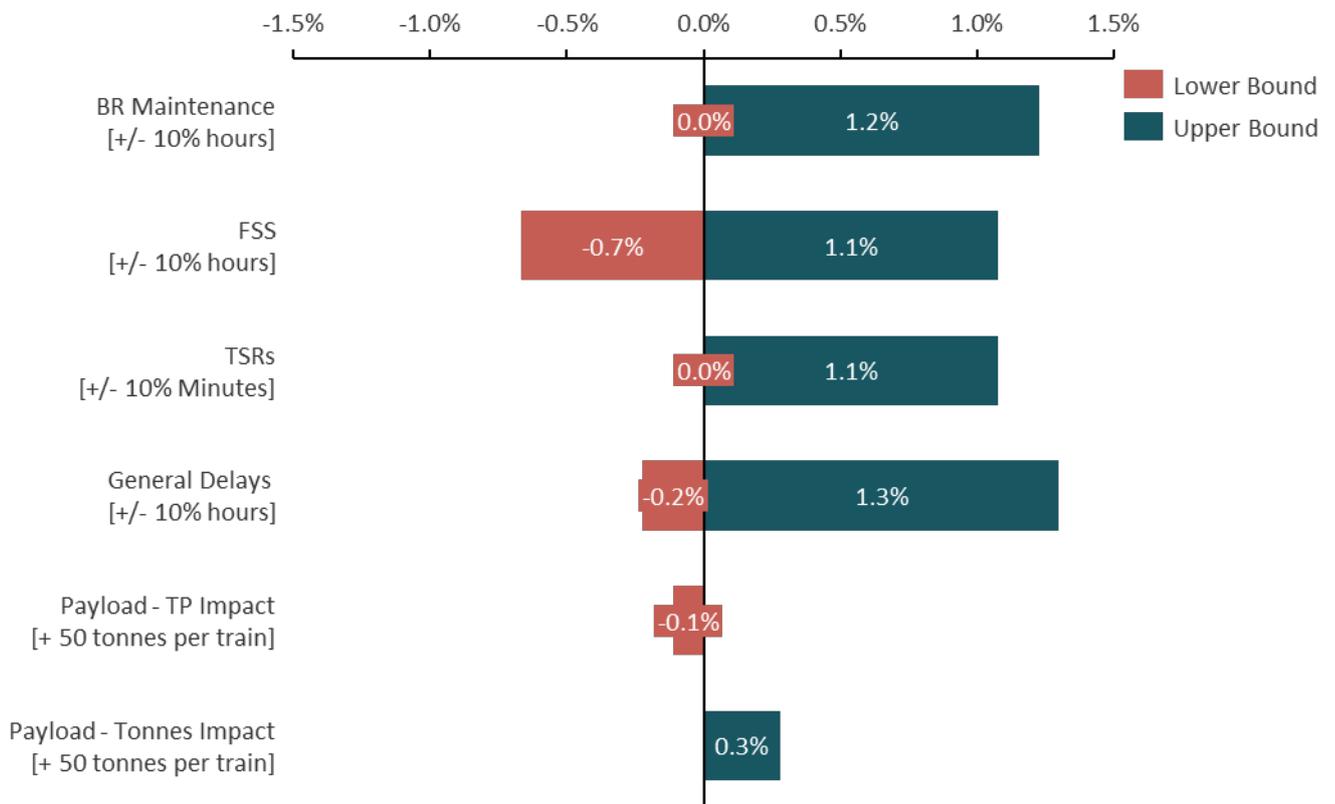
Summary:

- Below Rail planned maintenance and General Delays have the greatest impact on capacity at ~ 1.2% and ~1.3% respectively with an improvement if both see 10% improvement from current performance;

- A similar improvement would be realised in TSRs and reduction in FSS hours; and

- An increase in expected payload of 50 tonnes per train would see a slight decrease in Train Path achievement (longer time to load and unload) however would improve total tonnes throughput by ~ 0.3%.

The modelled train cycle time changes for GAPE from 2021 ICAR to ACAR is shown in **figure 23**.

Figure 23   Cycle Time comparison GAPE

Time Measure	Change from 2021 ICAR		Comments
Cycle Time	⬇	5%	Cycle Time is impacted by additional throughput in the Goonyella Coal System.

Better 🔼   Marginal Change ➡   Worse ⬇

7. Goonyella Coal System

7.1 Overview of Coal System

A map of the Goonyella Coal System is provided in **figure 24**. It shows the system and each mainline and branch line that makes up the Goonyella Coal System with the DNC and ECD for each for the five-year assessment period.

The Goonyella Coal System refers to the Rail Infrastructure comprising the rail corridor from the terminals at the Port of Hay Point (i.e., Hay Point Services Coal Terminal and Dalrymple Bay Coal Terminal) to Hail Creek mine, Blair Athol mine, North Goonyella mine and the junction with the Oaky Creek branch line and all branch lines directly connecting coal mine loading facilities to those corridors.

The major changes considered since the 2021 ICAR are:

- included the latest historical data in analysis;
- optimised ballast cleaning program included;
- improved modelling around terminal operations for inloaders; and
- used updated contract demand information.

Figure 24   Goonyella Coal System

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
Goonyella	3. Coppabella to Jilalan	3A: Jilalan to Port of Hay Point 3B: Hail Creek Mine to South Walker Creek Junction 3C: Oaky Creek Junction to Coppabella 3D: Coppabella to Wotonga 3E: North Goonyella Mine to Wotonga 3F: Blair Athol Mine to Wotonga

DNC	FY23	FY24	FY25	FY26	FY27
3	13,203	13,187	13,190	13,170	13,089
3A	13,203	13,187	13,190	13,170	13,089
3B	1,508	1,564	1,555	1,584	1,589
3C	5,135	5,093	5,148	5,267	5,132
3D	6,196	6,147	6,092	5,924	5,973
3E	3,180	3,367	3,190	2,964	3,209
3F	2,484	2,246	2,347	2,386	2,214

ECD	FY23	FY24	FY25	FY26	FY27
3	651	882	782	831	964
3A	651	882	782	831	964
3B	-	-	-	-	-
3C	494	546	518	555	569
3D	268	489	437	455	562
3E	-	69	32	23	93
3F	194	301	292	312	325

Legend

▬	Mainline
═	Branch line
■	Mainline Identifier
1A	Branch line Identifier
●	Location
∧	Mine/TLO

Existing Infrastructure as at June 2022

Information Classification: **PROTECTED**

7.2 Deliverable Network Capacity

7.2.1 Coal System Level

The DNC, Committed Capacity and ECD for Goonyella Coal System for the FY23 to FY27 assessment period is shown in **figure 25** in Train paths and **figure 26** in Tonnes. A comparison with the 2021 ICAR results for FY23 and FY24 is also shown.

Figure 25   **Goonyella summary for FY23 to FY27 (Train Paths)**
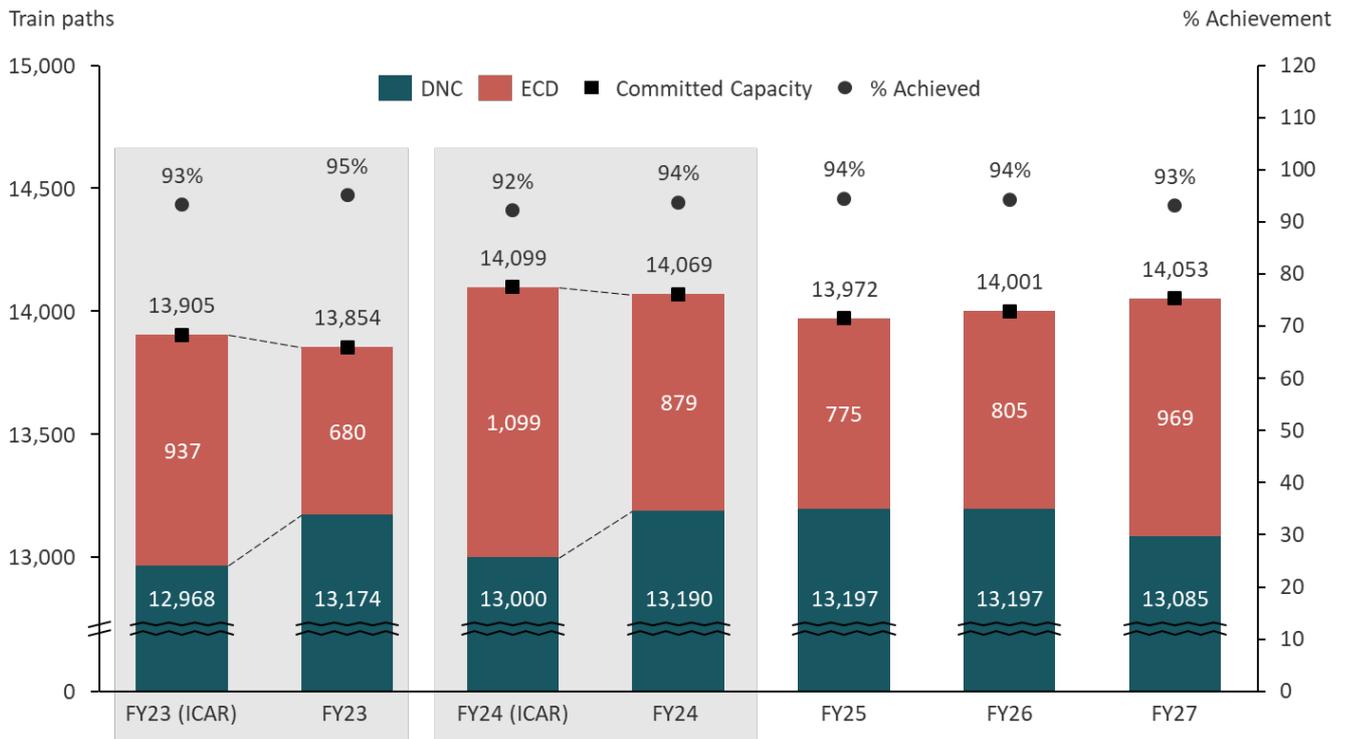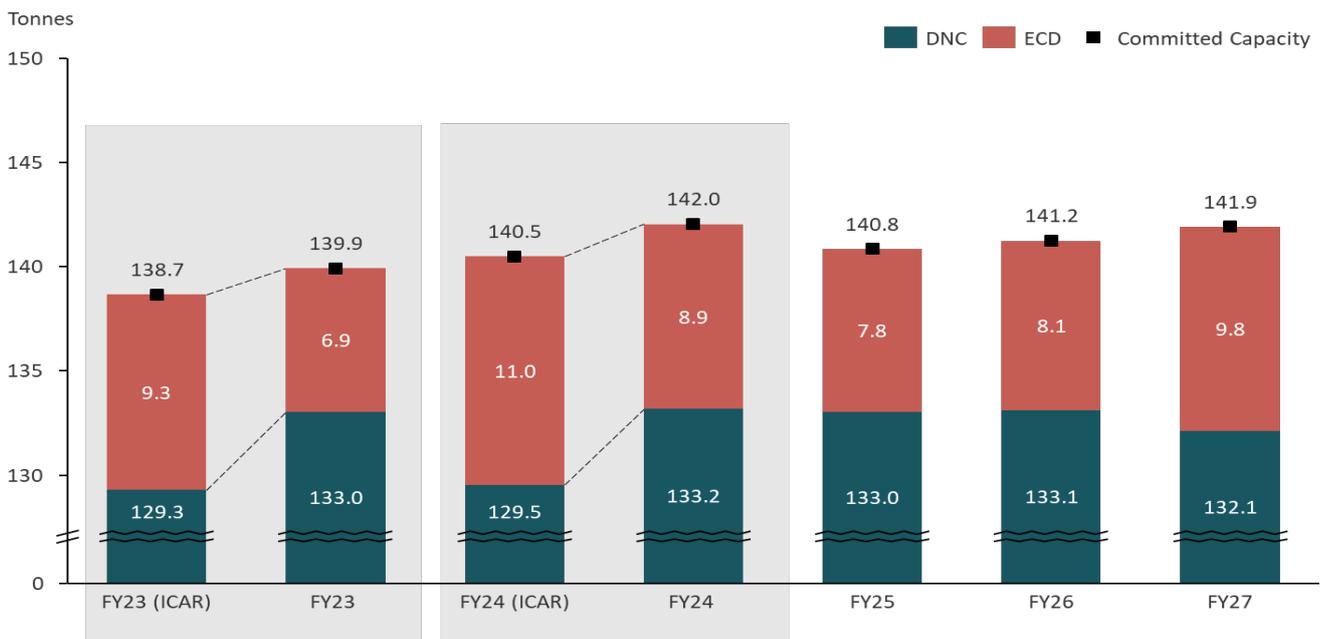

**Figure 26**   **Goonyella summary for FY23 to FY27 (Tonnes)**

In summary;

- The Committed Capacity has remained relatively unchanged from the ICAR for FY23 and FY24 at ~ 141 Mtpa;

- The DNC for FY23/FY24 has increased by ~ 3.7 Mtpa from 2021 ICAR levels. This is as a result of the optimised ballast cleaning machine program implementation and improvement in a number of key operational performance areas - general delays, expected payload and TLO planned maintenance;

- The maximum achievement of Committed Capacity is generally consistent at ~ 94%; and

- Maximum DNC is achieved in FY24.

The DNC calculated for the Goonyella Coal System by month for the five-year assessment period is shown in **Appendix C**.

The achievement of DNC by month, for the five-year assessment period, as a percentage of Committed Capacity is shown in **figure 27** below. The ICAR results for FY23 and FY24 are also shown for comparison.

The percentage is the percent DNC of committed Train Paths. Where this value is less than 100%, the DNC representing the capacity of the Rail Infrastructure is not able to meet the Committed Capacity at a Coal System level.

Figure 27   Percent achievement DNC to Committed Capacity Goonyella (monthly)
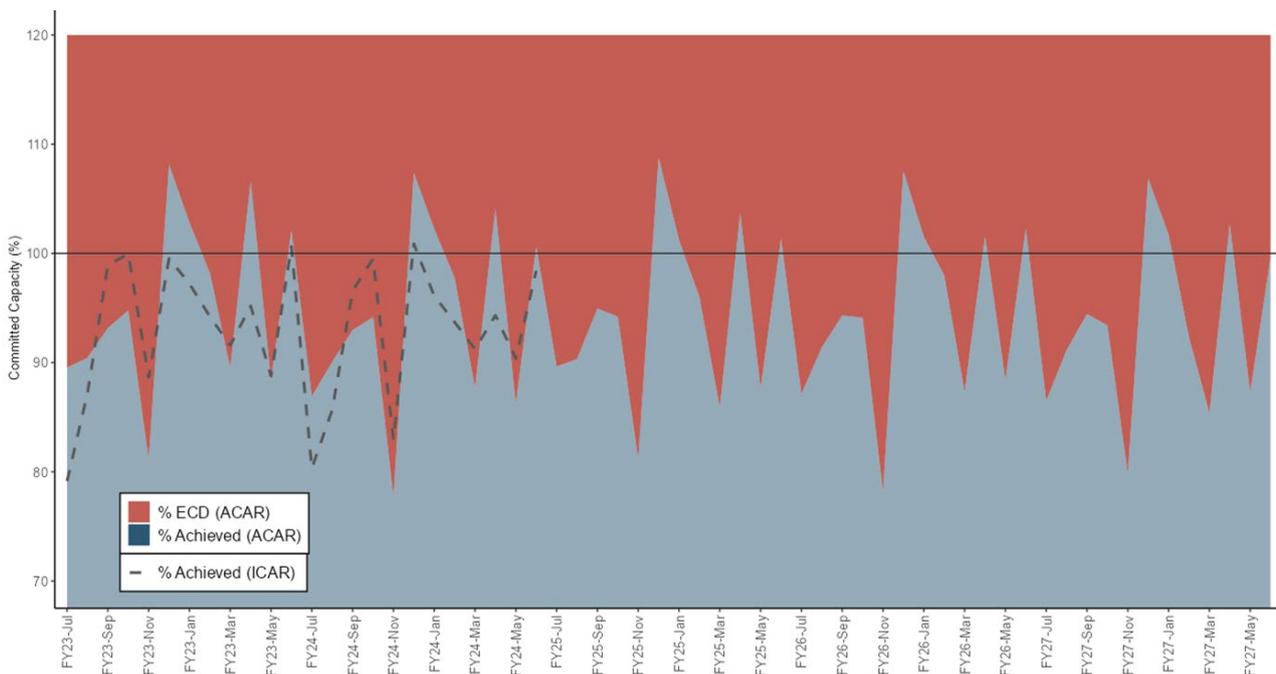
In Summary:

- There has been an on average improvement in achievement for all years;

- There are some months (typically 3-4 months per year) when DNC achievement can reach 100% or greater (~ 141 Mtpa) and this is typically when there is low planned maintenance for that period; and

- Overall Goonyella Coal System is now averaging ~ 93 - 95% achievement rate.

7.2.2   Mainline/Branch Line Level

The DNC calculated for Goonyella Coal System by mainline and branch line by month and year for the five-year assessment period is shown in **Appendix C**.

If an individual branch line or mainline is showing a DNC less than 100% for the year, this does not necessarily indicate that line of the Rail Infrastructure is unable to meet Committed Capacity. The DNC is calculated using the origin (mine) to destination (terminal) Train Path and if anywhere on that Train Path the Committed Capacity cannot be met it will influence the allocation of DNC to the branch line or mainline level.

There has been minimal change to the DNC levels for all main lines and branch lines in GAPE for FY23 and F24 between the ICAR and ACAR.

7.2.3   Origin/Destination Level

The IE is required to report the DNC by Coal System and mainline and branch line. However, given Below Rail contracts are at origin/destination level the DNC has been calculated for each origin/destination pair by month for the five-year assessment period. This is shown in **Appendix C**.

7.3   DNC Materiality Analysis

All operational data was analysed extensively for the ACAR. The key data changes since the ICAR is shown in **table 8**. Commentary is provided in the table for major changes.

Table 8   **Goonyella operational Data Comparison**

Key Operating Parameter		Measure	Change from 2021 ICAR	Comments
Demand	Committed Capacity	Train Paths	➡	
Rail Infrastructure	Sectional Run Times - Coal	Minutes	➡	
	Sectional Run Times - Non-coal	Minutes	➡	
Train Loadouts (TLO)	Expected Payload	Tonnes	⬆	The data indicates improvements in expected payload driven by improved light loading probability and a reduction in loading delays for some TLOs.
	TLO Gross Load Rate	Tonnes / Minute	⬆	
	TLO Planned Maintenance	Hours	⬆	
Inloaders (IL)	IL Unload Rate	Tonnes / Minute	➡	Expanded data set has shown limited change in IL variables.
	IL Planned Maintenance	Hours	➡	
Below Rail Operations	Planned Maintenance	Hours	➡	RIG approved MRSB activities showed limited change in planned maintenance hours, however a deterioriation in FSS hours.
	Full System Shuts	Hours	⬇	
Above Rail Operations	Yard Provisioning Times	Minutes	➡	
Non-coal Traffic	Timetables	Train Paths	➡	
System Delays	General Delays	Minutes / 100 km	⬆	The data shows that crew change delays and general delays have improved across all Coal Systems.
	Crew Change Delays	Minutes	⬆	
	Temporary Speed Restrictions	Minutes / 100 km	⬇	The data shows that the duration of TSRs has improved, however the frequency of TSR events has increased for all Coal Systems.
	Cancellations	%	⬇	Cancellation rates have deterioriated across all Coal Systems.

Better ⬆   Marginal Change ➡   Worse ⬇

For the key operating parameters, the sensitivity analysis in **figure 28** shows the impact to DNC of changes to these variables.

Figure 28   Goonyella sensitivity impact to DNC of key operating parameters
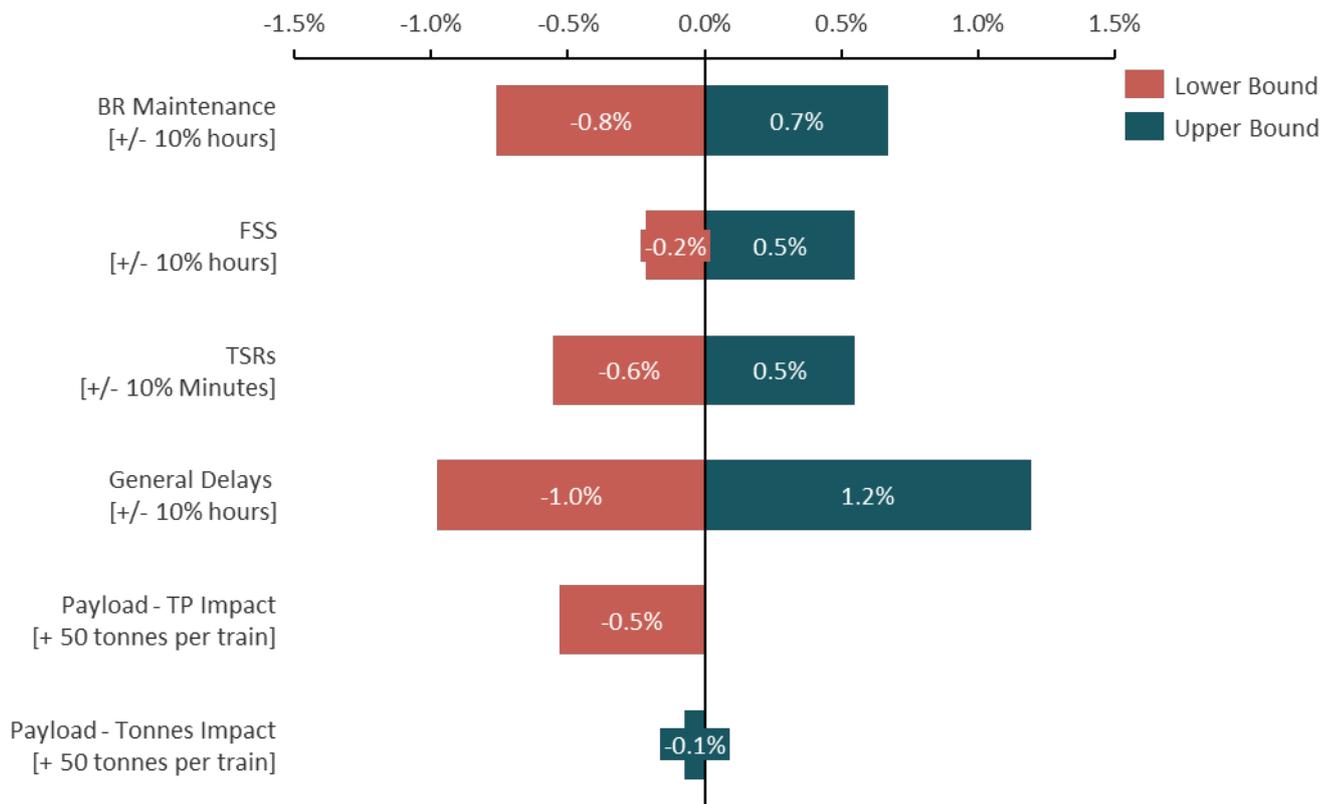
Summary:

- General delays has the greatest impact on capacity at ~1.2% improvement if there is a 10% improvement from current performance;

- For Below Rail planned maintenance, TSR and FSS hours improvements provides similar improvement opportunities; and

- An increase in expected payload of 50 tonnes per train would see decrease in Train Path achievement (longer time to load and unload) and minimal improvement in tonnes and this is thought to be linked to constraints at some TLO re balloon loop capacity and dwell time impact.

The modelled train cycle time changes for Goonyella from ICAR to ACAR is shown in **figure 29.**

Figure 29   Cycle Time comparison Goonyella

Time Measure	Change from 2021 ICAR		Comments
Cycle Time	⬆	-2%	Cycle Time has improved due largely to the reduction in crew change delays and general delays and optimised BCM program.

Better ⬆   Marginal Change ➡   Worse ⬇

8.   Blackwater Coal System

8.1 Overview of Coal System

A map of the Blackwater Coal System is provided in **figure 30.** It shows the Coal System and each mainline and branch line that makes up the Blackwater Coal System with the DNC and ECD for each for the five-year assessment period. Where there is no value shown then no ECD exists.

The Blackwater Coal System refers to the Rail Infrastructure comprising the rail corridor from terminals at Wiggins Island Coal Export Terminal and RG Tanna Coal Terminal to Rolleston mine, Burngrove and Oaky Creek Junction and all branch lines directly connecting coal mine loading facilities to those corridors. Blackwater Coal System also has a number of domestic coal users that are considered.

Some of the Moura Coal System traffic utilises Blackwater Coal System from Callemondah to Port of Gladstone and to the two (2) export coal terminals.

The major changes considered since the 2021 ICAR are:

- included the latest historical data in analysis;

- optimised ballast cleaning program included;

- included updated data around improvements in Callemondah Yard Above Rail operations;

- improved modelling around terminal operations for inloaders; and

- used updated contract demand information.

Figure 30   **Blackwater Coal System**

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
Blackwater	4. Bluff to Callemondah	4A: Callemondah to Port of Gladstone, including domestic coal terminals in vicinity (South Gladstone Junction) 4B: Burngrove to Bluff 4C: Rolleston Mine to Rangal 4D: Oaky Creek Junction to Burngrove 4E: Minerva Mine to Burngrove

DNC

	FY23	FY24	FY25	FY26	FY27
4	10,104	10,132	10,126	10,105	10,125
4A	9,667	9,694	9,689	9,668	9,687
4B	10,104	10,132	10,126	10,105	10,125
4C	4,115	4,072	4,059	4,096	4,119
4D	3,160	3,255	3,244	3,161	3,144
4E	■	■	■	■	■

ECD

	FY23	FY24	FY25	FY26	FY27
4	281	226	117	23	6
4A	353	298	189	95	78
4B	281	226	117	23	6
4C	122	121	63	20	10
4D	101	39	15	-	-
4E	■	■	■	■	■

Legend

▬	Mainline
═	Branch line
■	Mainline Identifier
1A	Branch line Identifier
●	Location
∧	Mine/TLO

Existing Infrastructure as at June 2022

Gladstone area inset

8.2 Deliverable Network Capacity

8.2.1 Coal System Level

The DNC, Committed Capacity and ECD for Blackwater Coal System for the FY23 to FY27 assessment period is shown in **figure 31** in Train paths and **figure 32** in Tonnes. A comparison with the 2021 ICAR results for FY23 and FY24 is also shown.

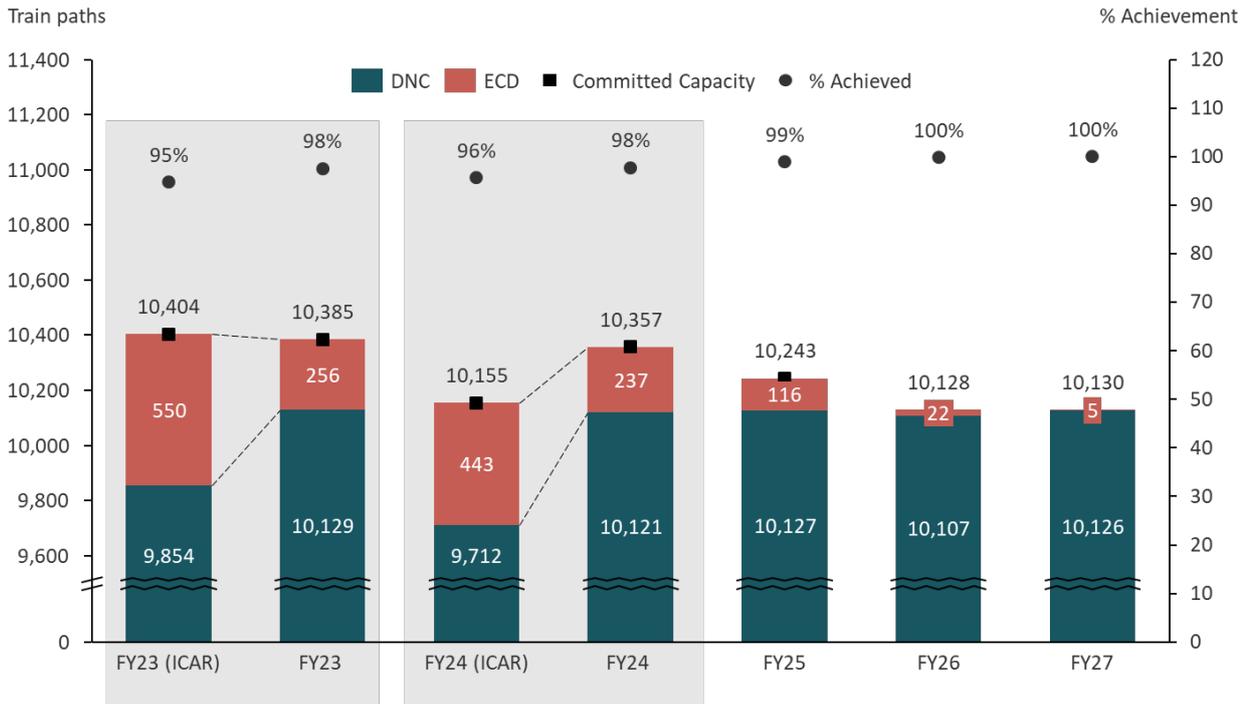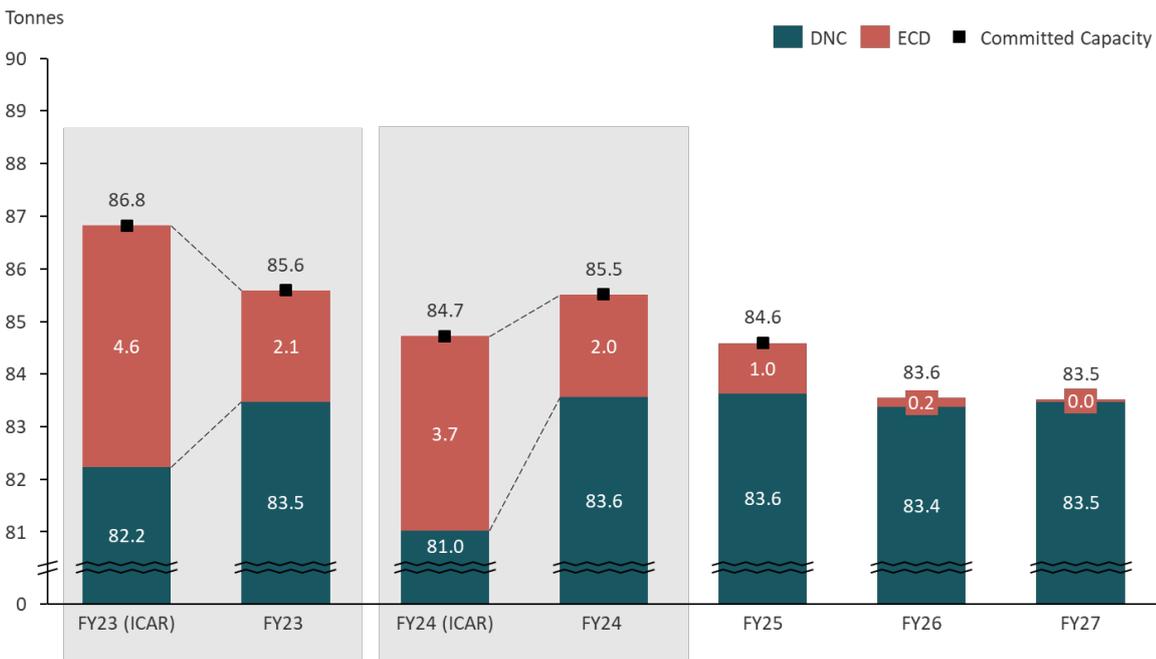**Figure 31**   **Blackwater summary for FY23 to FY27 (Train Paths)**

Figure 32   **Blackwater summary for FY23 to FY27 (Tonnes)**
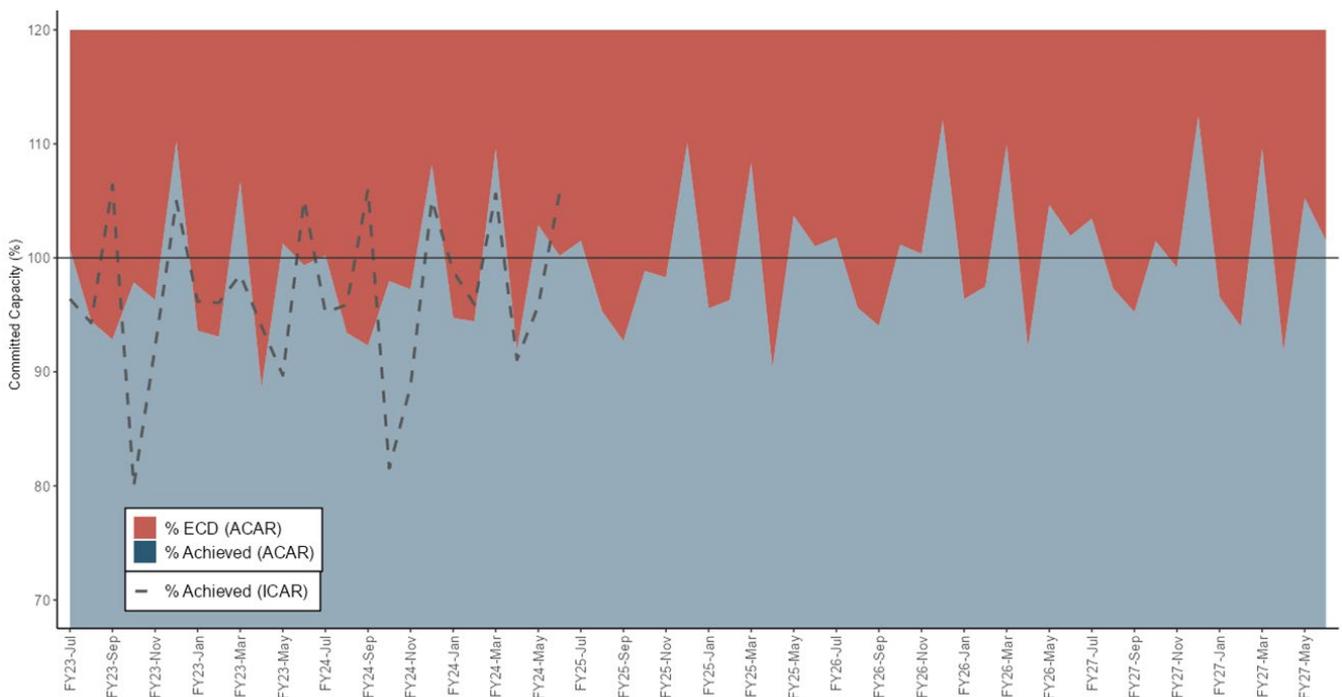

In summary;

- The Committed Capacity does reduce over the five-year period by ~ 1-1.5%;

- The DNC for FY24 has increased by ~ 2.6 Mtpa from 2021 ICAR. This is a result of improved Above Rail yard operational performance at Callemondah, crew changes at Stirrit being introduced and an improvement in some key operational areas – general delays and load and unload rates;

- The maximum achievement of Committed Capacity occurs in FY26 and FY27 at 100%; and

- FY25 and FY27 has the highest achieved DNC.

The DNC calculated for the Blackwater Coal System by month for the five-year assessment period is shown in **Appendix D**.

The achievement of DNC by month, for the five-year assessment period, as a percentage of Committed Capacity is shown in **figure 33** below. The ICAR results for FY23 and FY24 are also shown for comparison.

The percentage is the percent DNC of contracted Train Paths. Where this value is less than 100%, the DNC representing the capacity of the Rail Infrastructure is not able to meet the Committed Capacity at a Coal System level.

Figure 33   Percent achievement DNC to Committed Capacity Blackwater (monthly)

In Summary:

- There has been a general improvement in achievement for all years;

- Compared to 2021 ICAR there is less lower achievement months and more consistency in monthly achievement;

- There are now many months when DNC achievement can reach 100% or greater (~ 83 Mtpa); and

- Overall Blackwater Coal System is now averaging ~ 99% achievement rate.

8.2.2   Mainline/Branch Line Level

The DNC calculated for the Blackwater Coal System by mainline and branch line by month for the five-year assessment period is shown in **Appendix D**. Branch line 3C Oaky Creek Junction to Coppabella has been included for the origin/destination contracts from the Goonyella Coal System to the Blackwater Coal System coal terminals.

8.2.3   Origin/Destination Level

The IE is required to report the DNC by Coal System and mainline and branch line. However, given Below Rail contracts are at origin/destination level the DNC has been calculated for each origin/destination pair by month for the five-year assessment period. This is shown in **Appendix D**.

8.3   DNC Materiality Analysis

All operational data was analysed extensively for the ACAR. The key data changes since the ICAR is shown in **Table 9**. Commentary is provided in the table for key changes.

Table 9   **Blackwater operational Data Comparison**

Key Operating Parameter		Measure	Change from 2021 ICAR	Comments
Demand	Committed Capacity	Train Paths	➡	
Rail Infrastructure	Sectional Run Times - Coal	Minutes	➡	
	Sectional Run Times - Non-coal	Minutes	⬆	SRT's for most non-coal services have improved.
Train Loadouts (TLO)	Expected Payload	Tonnes	⬇	The data indicates minor reductions in expected payload with an increase in light loaded trains for some TLOs, however, there is an improvement in GLR and planned maintenance for some TLOs.
	TLO Gross Load Rate	Tonnes / Minute	⬆	
	TLO Planned Maintenance	Hours	⬆	
Inloaders (IL)	IL Unload Rate	Tonnes / Minute	⬆	Expanded data set has shown improvements in unload rates.
	IL Planned Maintenance	Hours	➡	
Below Rail Operations	Planned Maintenance	Hours	⬆	RIG approved MRSB activities showed improvement in planned maintenance, however a deterioiation in FSS hours.
	Full System Shuts	Hours	⬇	
Above Rail Operations	Yard Provisioning Times	Minutes	⬆	Provisioning times have improved with a number of above rail initiatives at Callemondah yard.
Non-coal Traffic	Timetables	Train Paths	⬆	Improvement in some non-coal timetables.
System Delays	General Delays	Minutes / 100 km	⬆	The data shows that crew change delays and general delays have improved across all Coal Systems.
	Crew Change Delays	Minutes	⬆	
	Temporary Speed Restrictions	Minutes / 100 km	⬇	The data shows that the duration of TSRs has improved, however the frequency of TSR events has increased for all Coal Systems.
	Cancellations	%	⬇	Cancellation rates have deterioriated across all Coal Systems.

Better ⬆   Marginal Change ➡   Worse ⬇

For the key operating parameters, the sensitivity analysis in **figure 34** shows the impact to DNC of changes to these variables.

Figure 34   Blackwater sensitivity impact to DNC of key operating parameters
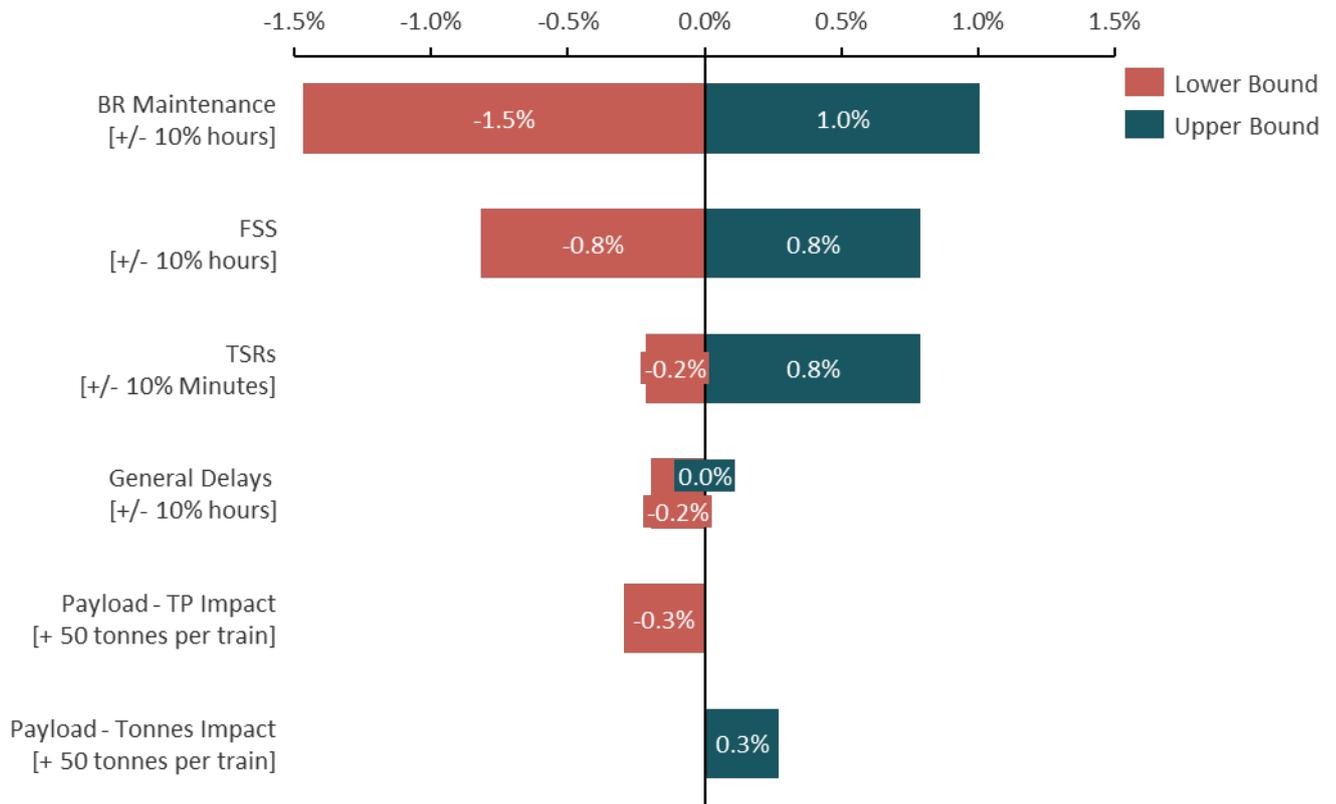
Summary:

- Below Rail planned maintenance, FSS hours and TSR's have the greatest impact on capacity at ~0.8 – 1.0% improvement if there is a 10% improvement from current performance;

- Below Rail planned maintenance hs the highest impact on sensitivity by ~ 1.5% wen hours are reduced by 10%; and

- An increase in expected payload of 50 tonnes per train would see decrease in Train Path achievement (longer time to load and unload) and similar improvement in tonnes.

The modelled train cycle time changes for Blackwater from ICAR to ACAR is shown in **figure 35**. Due to the recent Above Rail operational improvements around Callemondah yard and in some improvement in key operational performance areas, the number of consists has been reduced by 2 to achieve maximum DNC. This has resulted in an improvement in cycle time.

Figure 35   Cycle Time comparison Blackwater

Time Measure	Change from 2021 ICAR		Comments
Cycle Time	⬆	-8%	Cycle Time has improved as a result of a reduction in provisioning times from a number of above rail initiatives at Callemondah yard, as well as a reduction in crew change delays and general delays.

Better ⬆   Marginal Change ➡   Worse ⬇

9. Moura Coal System

9.1 Overview of Coal System

A map of the Moura Coal System is provided in **figure 36**. It shows the system and each mainline and branch line that makes up the Moura Coal System with the DNC and ECD for each for the five-year assessment period.

The Moura Coal System refers to the Rail Infrastructure comprising the rail corridor from the RG Tanna Coal Terminal and Domestic user sites to Moura mine, Callide and Earlsfield and all branch lines directly connecting coal mine loading facilities to those corridors. The Moura Coal System has a number of domestic coal users that are considered.

The Blackwater Coal System branch line 4A Callemondah to Port of Gladstone is also utilised by Moura Coal System traffic.

The major changes considered since the 2021 ICAR are:

- included the latest historical data in analysis;

- optimised ballast cleaning program included;

- included updated data around improvements in Callemondah Yard Above Rail operations;

- included new crew change location at Stirrit;

- improved modelling around terminal operations for inloaders; and

- used updated contract demand information.

Figure 36   Moura Coal System

Coal System, mainline and branch lines

Coal System	Mainline Path (loaded direction)	Branch Line Paths
Moura	5. Dumgree to Callemondah	5A: Dumgree to Earlsfield 5B: Earlsfield to Callide 5C: Earlsfield to Moura

Callemondah

Port of Gladstone
Wiggins Island Coal Terminal
RG Tanna Coal Terminal

5A

Earlsfield   **Dumgree**
Boundary Hill^

5
MOURA

5C   **Callide**   Callide Coalfield^

5B

Baralaba Coal^
Moura   Moura Mine^

DNC	FY23	FY24	FY25	FY26	FY27
5	2,311	2,311	2,302	2,303	2,306
5A	2,311	2,311	2,302	2,303	2,306
5B	■	■	■	■	■
5C	1,201	1,199	1,195	1,196	1,196

ECD	FY23	FY24	FY25	FY26	FY27
5	17	24	26	25	29
5A	17	24	26	25	29
5B	■	■	■	■	■
5C	21	26	28	26	29

Legend

▬	Mainline
═	Branch line
■	Mainline Identifier
1A	Branch line Identifier
●	Location
∧	Mine/TLO

Existing Infrastructure as at June 2022

9.2 Deliverable Network Capacity

9.2.1 Coal System level

The DNC, Committed Capacity and ECD for Moura Coal System for the FY23 to FY27 assessment period is shown in **figure 37** in Train paths and **figure 38** in Tonnes. A comparison with the 2021 ICAR results for FY23 and FY24 is also shown.

Figure 37   Moura summary for FY23 to FY27 (Train Paths)
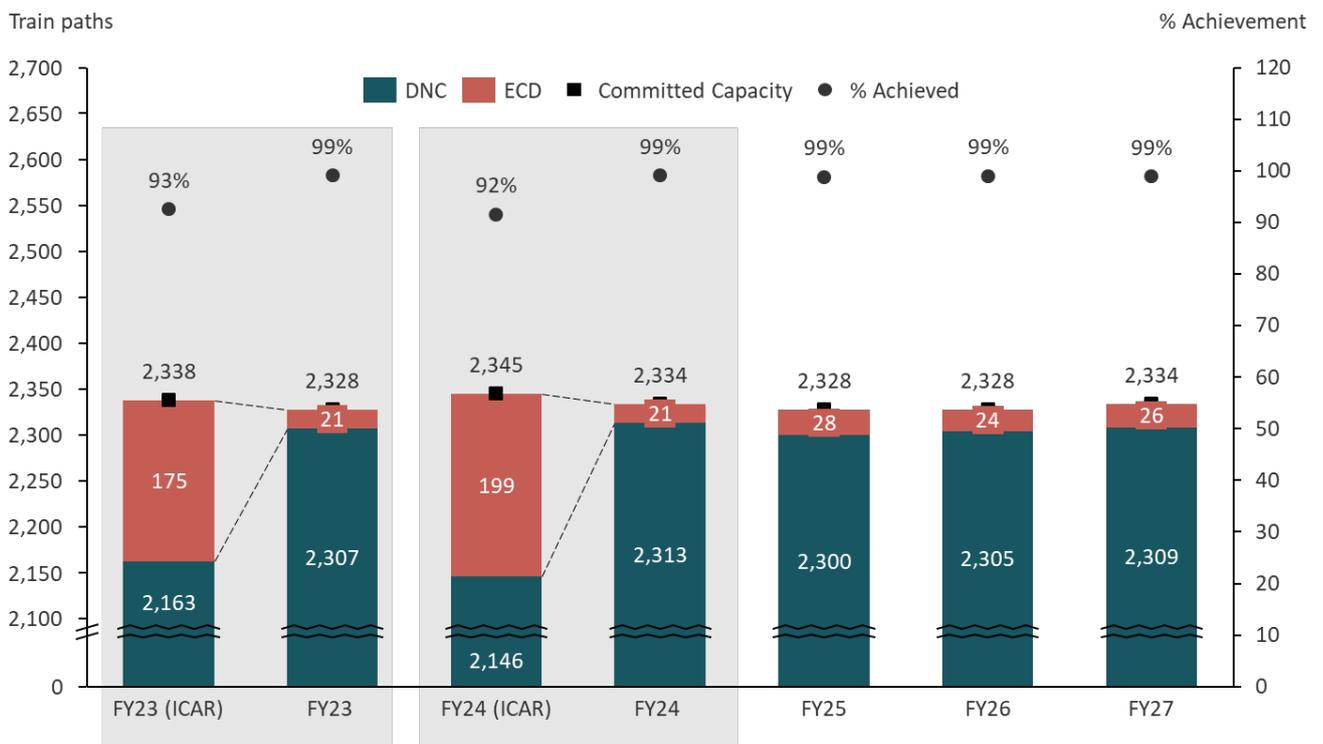
Figure 38   Moura summary for FY23 to FY27 (Tonnes)
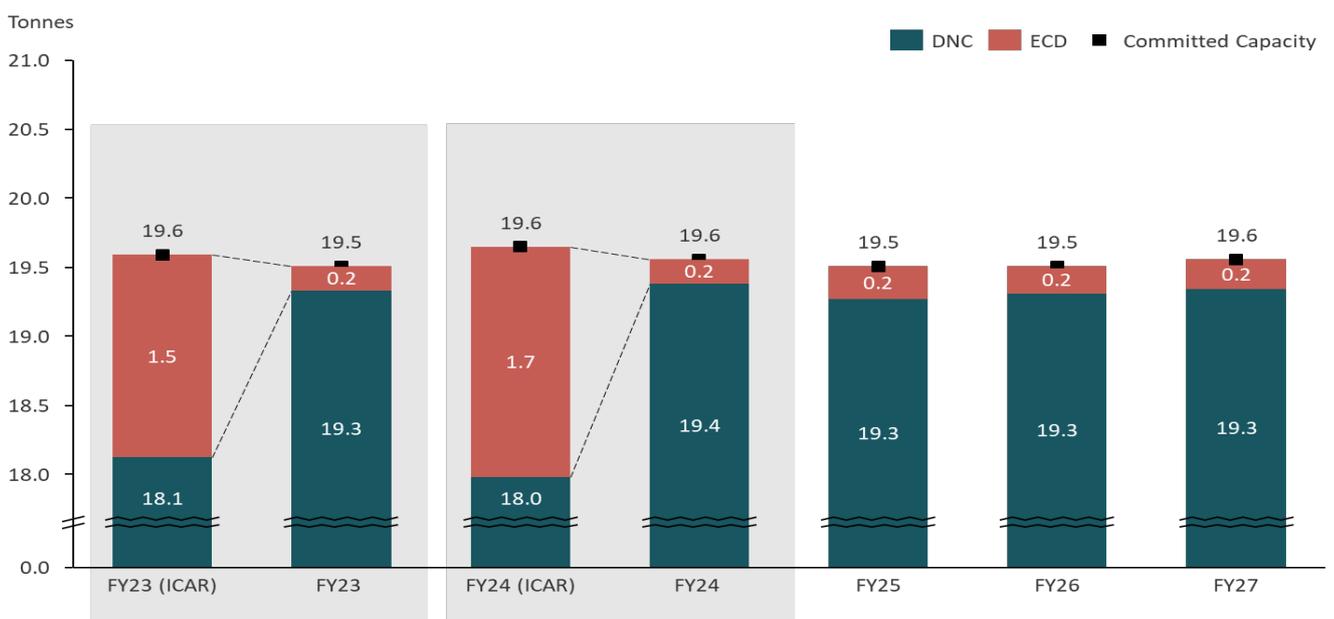
In summary;

- The Committed Capacity has remained unchanged from the ICAR at ~ 19 Mtpa;

- The DNC for FY23/FY24 has increased by ~ 1.2 – 1.4 Mtpa. This is a result of improved Above Rail yard operational performance at Callemondah, crew changes at Stirrit being introduced and an improvement in some key operational areas;

- The maximum achievement of Committed Capacity is at 99% for all years; and

- FY24 has the highest achieved DNC.

The DNC calculated for the Moura Coal System by month for the five-year assessment period is shown in **Appendix E.**

The achievement of DNC by month, for the five-year assessment period, as a percentage of committed capacity is shown in **figure 39** below. The ICAR results for FY23 and FY24 are also shown for comparison.

Figure 39 **Percent achievement DNC to Committed Capacity Moura (monthly)**
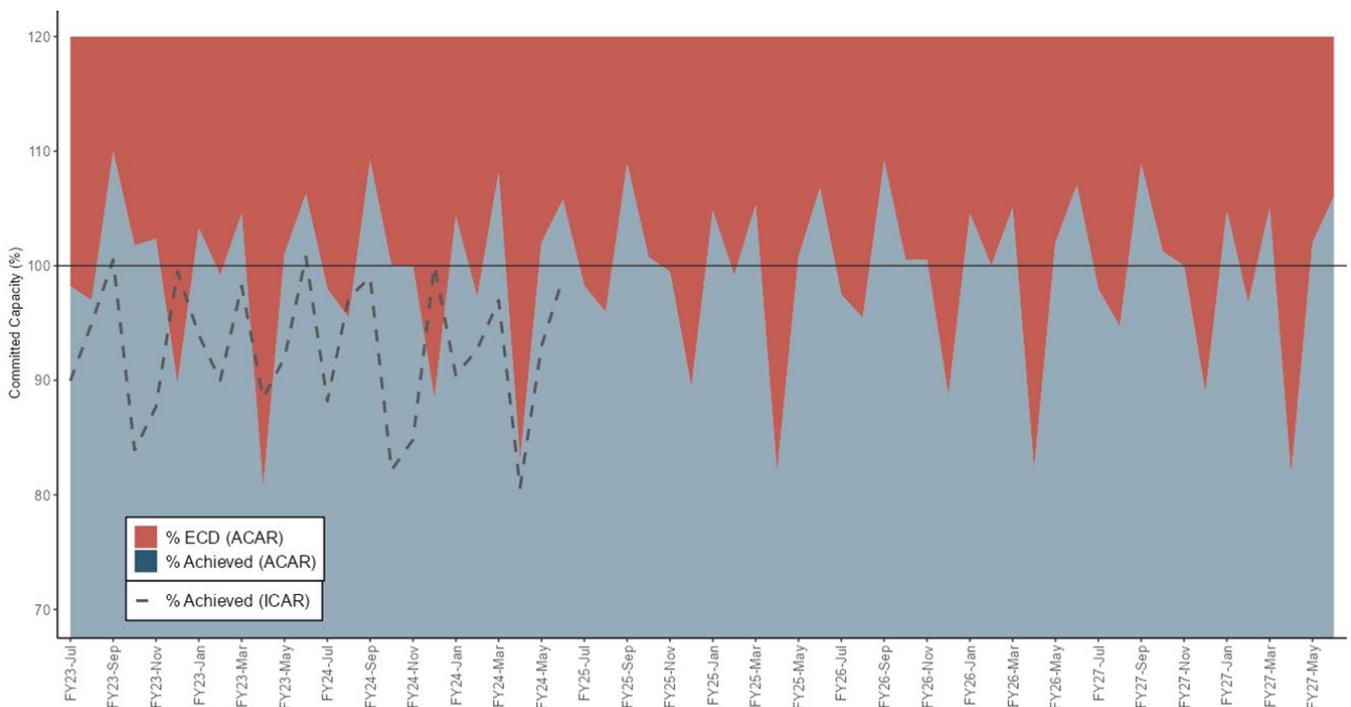
In Summary:

- There has been an improvement in achievement for all years;

- Most months now achieve near 100% (~ 19 Mtpa) with months that reduce due predominantly to timing of key planned maintenance events (typically 2 months per year); and

- Overall Moura Coal System is now averaging ~ 99% achievement rate.

9.2.2   Mainline/Branch Line Level

The DNC calculated for the Moura Coal System by mainline and branch line by month for the five-year assessment period is shown in **Appendix E**. The percentage is the percent DNC of contracted Train Paths. Where this value is less than 100%, the DNC representing the capacity of the Rail Infrastructure is not able to meet the Committed Capacity at a Coal System level.

9.2.3   Origin/Destination Level

The IE is required to report the DNC by Coal System and mainline and branch line. However, given Below Rail contracts are at origin/destination level the DNC has been calculated for each origin/destination pair by month for the five-year assessment period. This is shown in **Appendix E**.

9.3 DNC Materiality Analysis

The key data influence and change since the ICAR is shown in **table 10**. Commentary is provided in the table for key changes.

Table 10   Moura operational Data Comparison

Key Operating Parameter		Measure	Change from 2021 ICAR	Comments
Demand	Committed Capacity	Train Paths	➡	
Rail Infrastructure	Sectional Run Times - Coal	Minutes	➡	
	Sectional Run Times - Non-coal	Minutes	➡	
Train Loadouts (TLO)	Expected Payload	Tonnes	➡	Limited change to expected payload and GLR, however the data identified a deterioriation in planned maintenance for some TLOs.
	TLO Gross Load Rate	Tonnes / Minute	➡	
	TLO Planned Maintenance	Hours	⬇	
Inloaders (IL)	IL Unload Rate	Tonnes / Minute	⬆	Expanded data set has shown improvements in unload rates.
	IL Planned Maintenance	Hours	➡	
Below Rail Operations	Planned Maintenance	Hours	⬆	RIG approved MRSB activities showed improvement in planned maintenance and full system shut hours.
	Full System Shuts	Hours	⬆	
Above Rail Operations	Yard Provisioning Times	Minutes	⬆	Provisioning times have improved with a number of above rail initiatives at Callemondah yard.
Non-coal Traffic	Timetables	Train Paths	➡	
System Delays	General Delays	Minutes / 100 km	⬆	The data shows that crew change delays and general delays have improved across all Coal Systems.
	Crew Change Delays	Minutes	⬆	
	Temporary Speed Restrictions	Minutes / 100 km	⬇	The data shows that the duration of TSRs has improved, however the frequency of TSR events has increased for all Coal Systems.
	Cancellations	%	⬇	Cancellation rates have deterioriated across all Coal Systems.

Better ⬆   Marginal Change ➡   Worse ⬇

For the key operating parameters, the sensitivity analysis in **figure 40** shows the impact to DNC of changes to these variables.

Figure 40   Moura sensitivity impact to DNC of key operating parameters
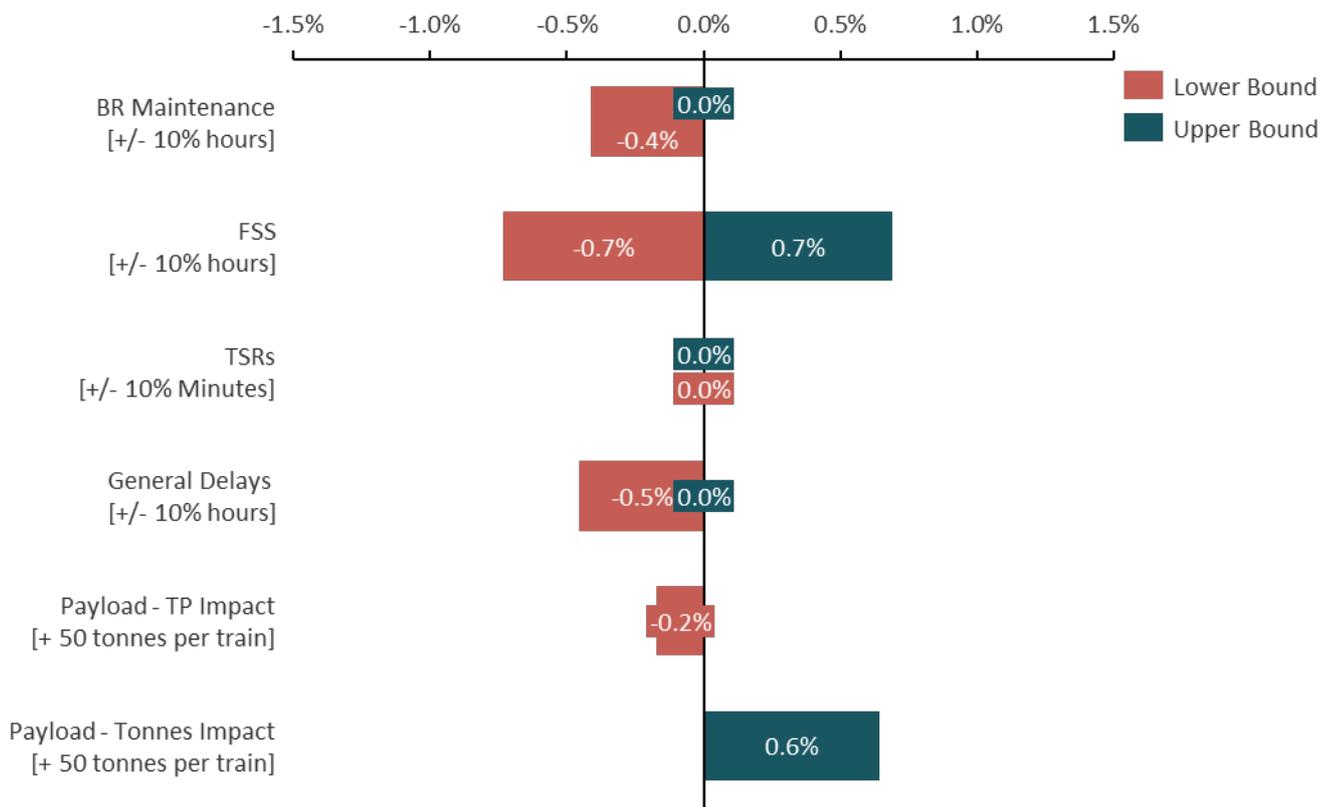
Summary:

- Given Moura operations there is minimal impact to a small change in some key operational performance except for FSS hours. Which has ~ 0.7% improvement.

The modelled train cycle time changes for Moura from ICAR to ACAR is shown in **figure 41**.

Figure 41   Cycle Time comparison Moura

Time Measure	Change from 2021 ICAR		Comments
Cycle Time	⬆	-7%	Cycle Time has improved as a result of a reduction in provisioning times from a number of above rail initiatives at Callemondah yard, as well as a reduction in crew change delays and general delays.

Better ⬆   Marginal Change ➡   Worse ⬇

APPENDIX A: Newlands Coal System Information

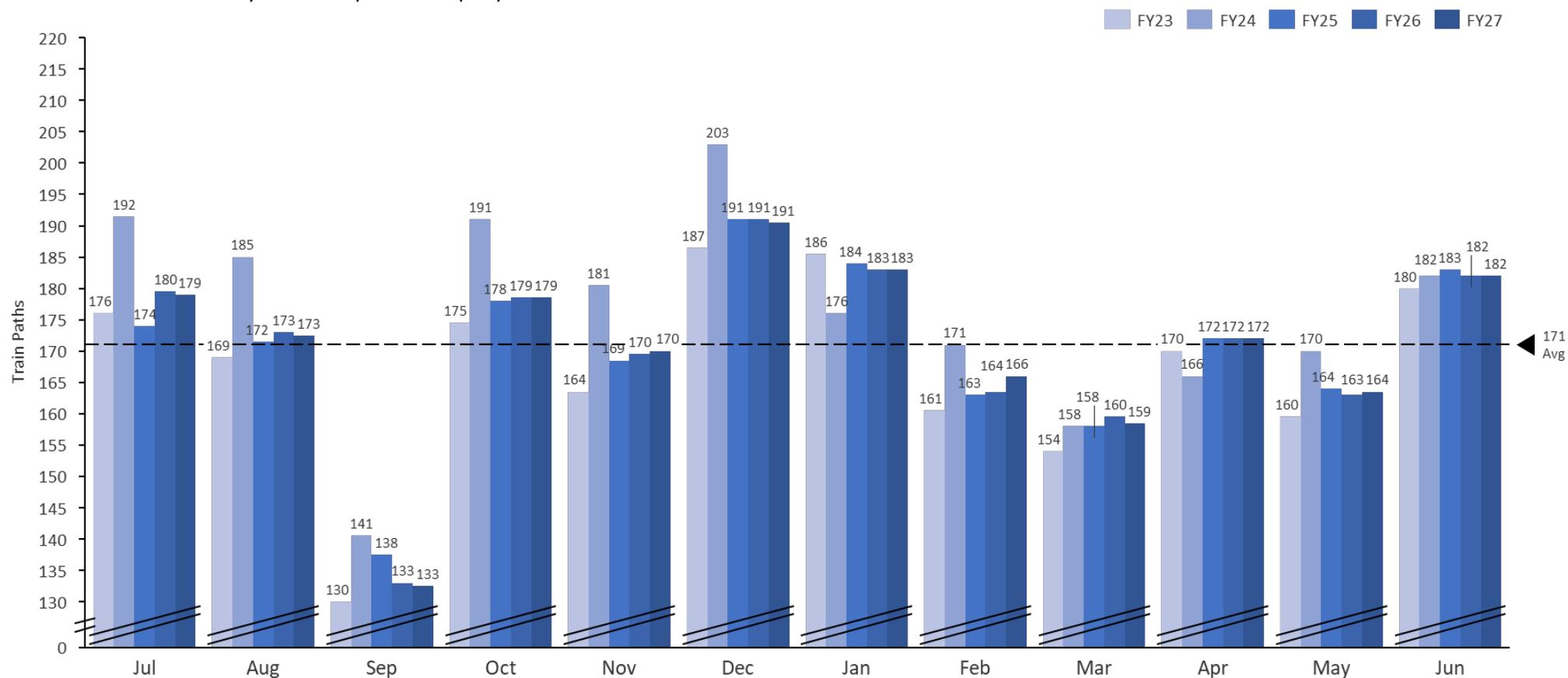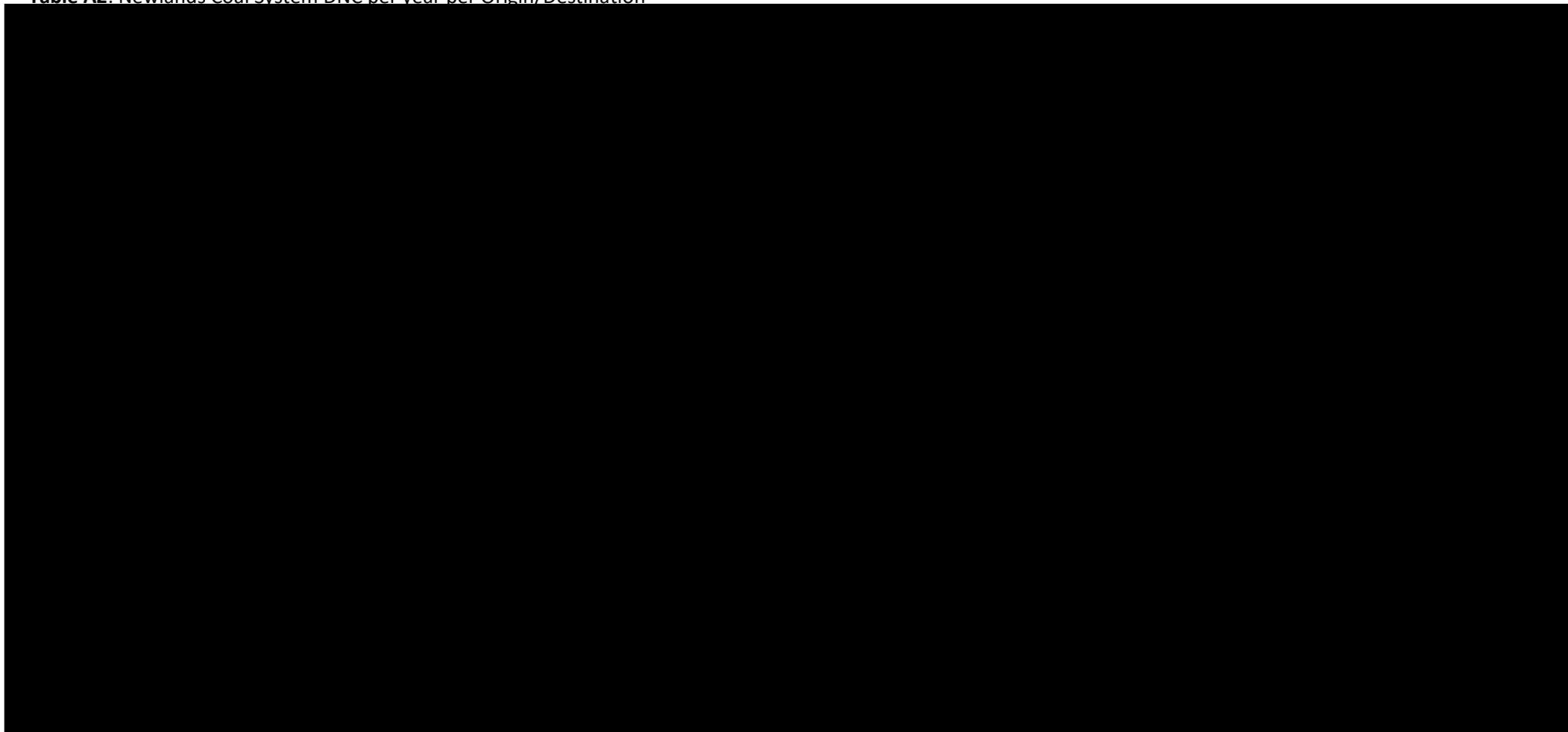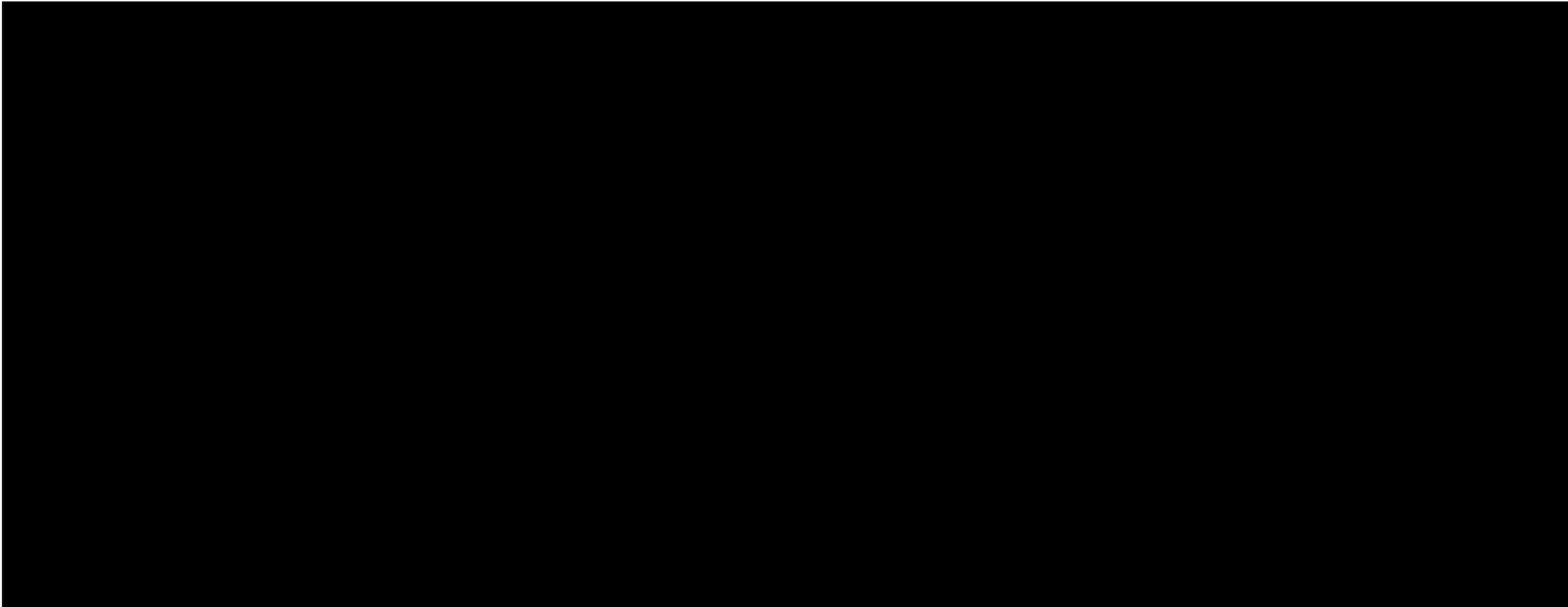**Chart A1**: Newlands Coal System DNC per month per year

Table A1: Newlands Coal System % achieved of contract per mainline and branch line per month per year

% Achieved		FY23	FY24	FY25	FY26	FY27							
Newlands Coal System		**64%**	**67%**	**66%**	**66%**	**65%**							
1	M.L. - Collinsville to Pring	64%	67%	66%	66%	66%							
1A	B.L. - Pring to Abbot Point	64%	67%	66%	66%	66%							
1B	B.L. - Newlands Mine to Collinsville	64%	67%	66%	66%	66%							

FY23 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Newlands Coal System		**66%**	**64%**	**51%**	**66%**	**64%**	**70%**	**70%**	**67%**	**58%**	**66%**	**60%**	**70%**	**64%**
1	M.L. - Collinsville to Pring	66%	64%	51%	66%	64%	70%	70%	67%	58%	66%	60%	70%	64%
1A	B.L. - Pring to Abbot Point	66%	64%	51%	66%	64%	70%	70%	67%	58%	66%	60%	70%	64%
1B	B.L. - Newlands Mine to Collinsville	66%	64%	51%	66%	64%	70%	70%	67%	58%	66%	60%	70%	64%

FY24 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Newlands Coal System		**72%**	**70%**	**55%**	**72%**	**70%**	**76%**	**67%**	**68%**	**60%**	**65%**	**64%**	**71%**	**67%**
1	M.L. - Collinsville to Pring	72%	70%	55%	72%	70%	76%	67%	68%	60%	65%	64%	71%	67%
1A	B.L. - Pring to Abbot Point	72%	70%	55%	72%	70%	76%	67%	68%	60%	65%	64%	71%	67%
1B	B.L. - Newlands Mine to Collinsville	72%	70%	55%	72%	70%	76%	67%	68%	60%	65%	64%	71%	67%

FY25 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Newlands Coal System		**66%**	**65%**	**54%**	**67%**	**66%**	**72%**	**70%**	**68%**	**60%**	**67%**	**62%**	**71%**	**66%**
1	M.L. - Collinsville to Pring	66%	65%	54%	67%	66%	72%	70%	68%	60%	67%	62%	71%	66%
1A	B.L. - Pring to Abbot Point	66%	65%	54%	67%	66%	72%	70%	68%	60%	67%	62%	71%	66%
1B	B.L. - Newlands Mine to Collinsville	66%	65%	54%	67%	66%	72%	70%	68%	60%	67%	62%	71%	66%

FY26 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Newlands Coal System		**68%**	**66%**	**52%**	**68%**	**66%**	**72%**	**69%**	**68%**	**60%**	**67%**	**62%**	**71%**	**66%**
1	M.L. - Collinsville to Pring	68%	66%	52%	68%	66%	72%	69%	68%	60%	67%	62%	71%	66%
1A	B.L. - Pring to Abbot Point	68%	66%	52%	68%	66%	72%	69%	68%	60%	67%	62%	71%	66%
1B	B.L. - Newlands Mine to Collinsville	68%	66%	52%	68%	66%	72%	69%	68%	60%	67%	62%	71%	66%

FY27 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Newlands Coal System		**68%**	**65%**	**52%**	**68%**	**66%**	**72%**	**69%**	**66%**	**60%**	**67%**	**62%**	**71%**	**65%**
1	M.L. - Collinsville to Pring	68%	65%	52%	68%	66%	72%	69%	66%	60%	67%	62%	71%	66%
1A	B.L. - Pring to Abbot Point	68%	65%	52%	68%	66%	72%	69%	66%	60%	67%	62%	71%	66%
1B	B.L. - Newlands Mine to Collinsville	68%	65%	52%	68%	66%	72%	69%	66%	60%	67%	62%	71%	66%

Table A2: Newlands Coal System DNC per year per Origin/Destination

APPENDIX B: GAPE Coal System Information

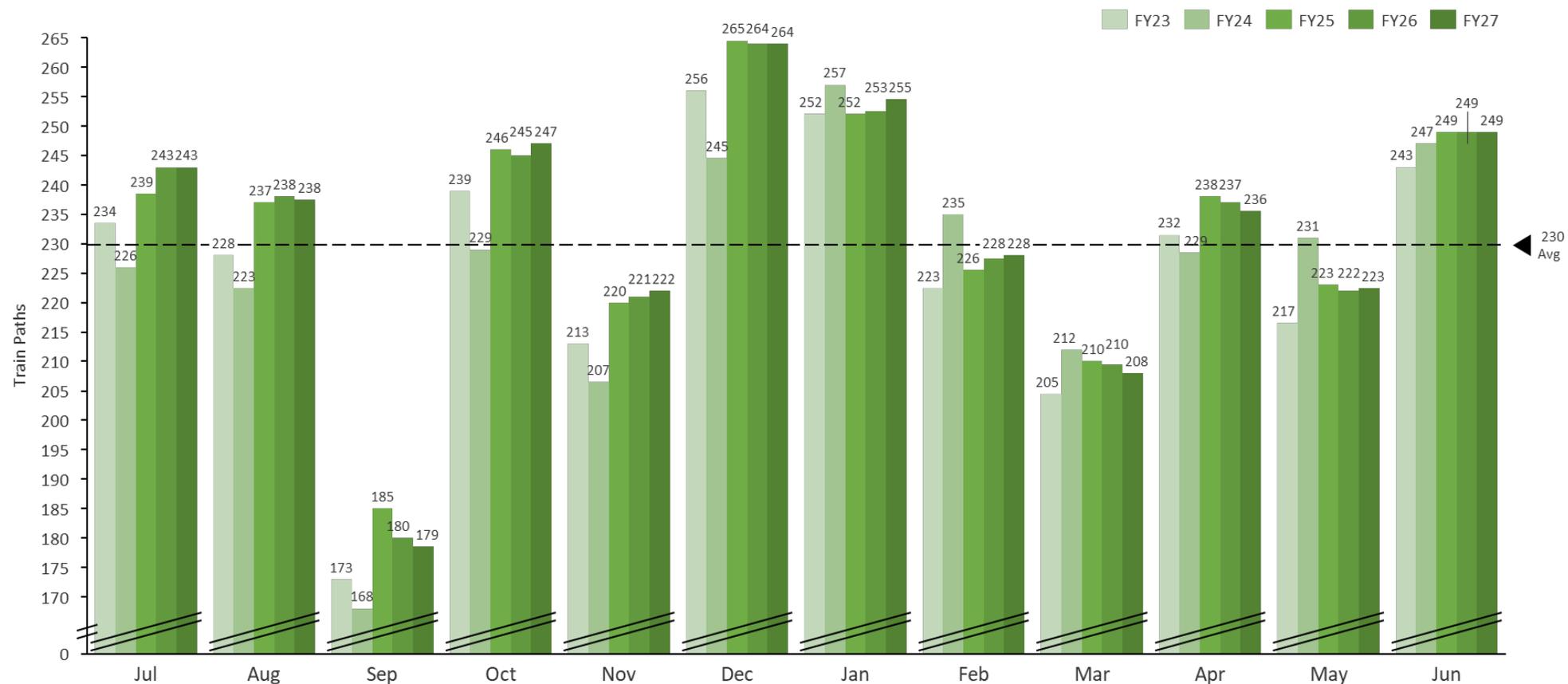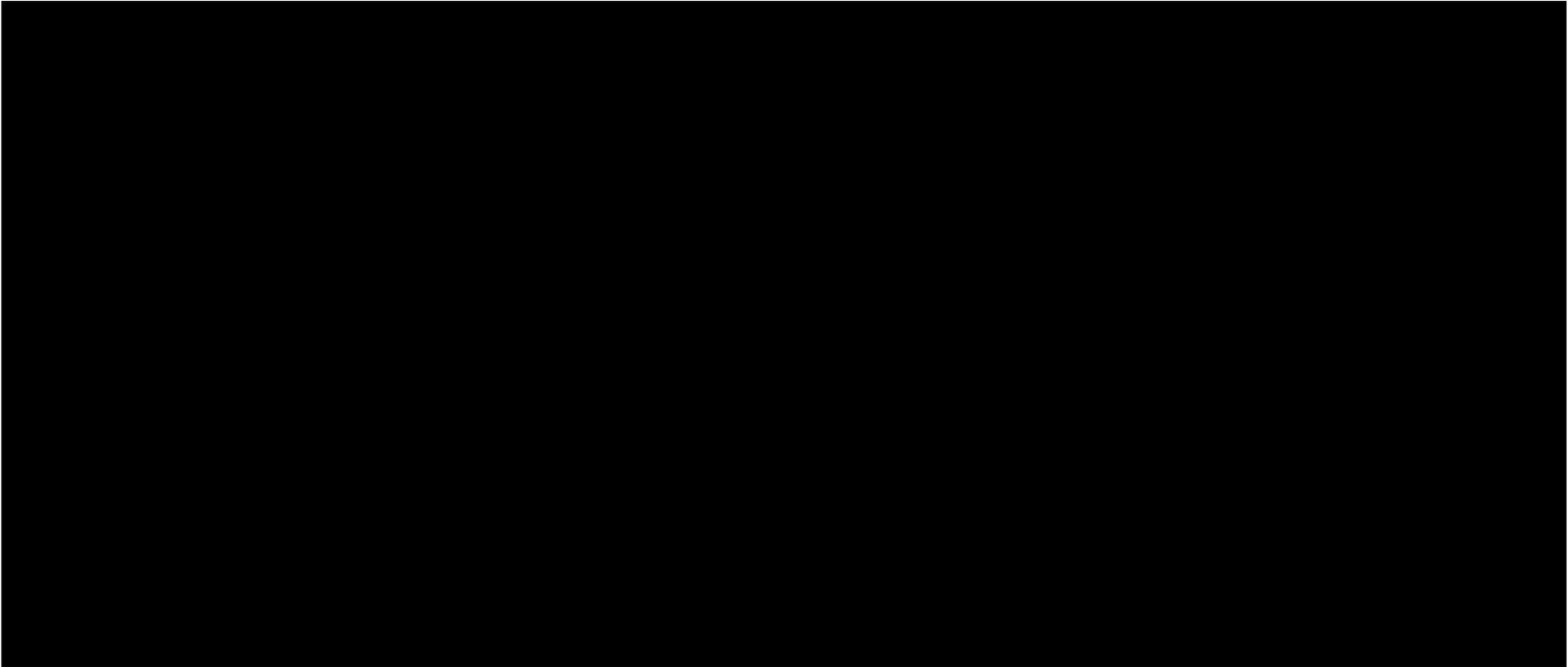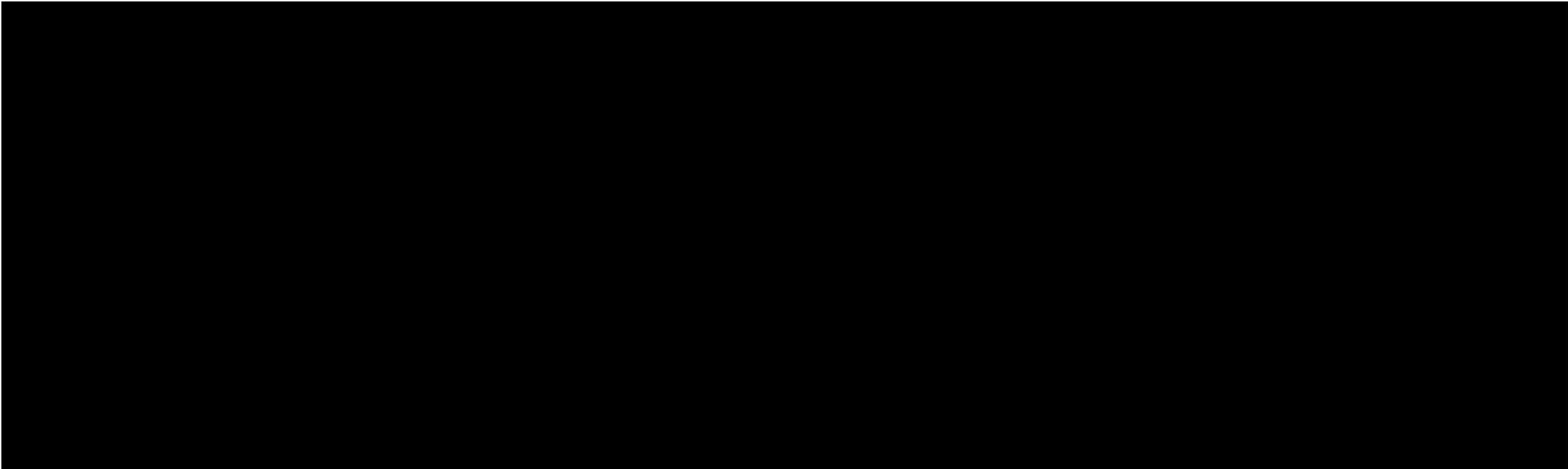**Chart B1**: GAPE Coal System DNC per month per year

Table B1: GAPE Coal System % Achieved of contract per mainline and branch line per month per year

% Achieved		FY23	FY24	FY25	FY26	FY27
GAPE Coal System		**62%**	**62%**	**64%**	**64%**	**64%**
1	M.L. - Collinsville to Pring	62%	62%	64%	64%	64%
1A	B.L. - Pring to Abbot Point	62%	62%	64%	64%	64%
1B	B.L. - Newlands Mine to Collinsville	62%	62%	64%	64%	64%
2A	B.L. - North Goonyella Junction to Newlands Junction	62%	62%	64%	64%	64%
3C	B.L. - Oaky Creek Junction to Coppabella	62%	62%	64%	64%	64%
3D	B.L. - Coppabella to Wotonga	62%	62%	64%	64%	64%
3E	B.L. - Wotonga to North Goonyella	63%	62%	65%	65%	64%
3F	B.L. - Blair Athol Mine to Wotonga	62%	61%	62%	62%	62%

FY23 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
GAPE Coal System		**63%**	**62%**	**48%**	**65%**	**60%**	**69%**	**68%**	**66%**	**55%**	**65%**	**59%**	**68%**	**62%**
1	M.L. - Collinsville to Pring	63%	62%	48%	65%	60%	69%	68%	66%	55%	65%	59%	68%	62%
1A	B.L. - Pring to Abbot Point	63%	62%	48%	65%	60%	69%	68%	66%	55%	65%	59%	68%	62%
1B	B.L. - Newlands Mine to Collinsville	63%	62%	48%	65%	60%	69%	68%	66%	55%	65%	59%	68%	62%
2A	**B.L. - North Goonyella Junction to Newlands Junction** *	63%	62%	48%	65%	60%	69%	68%	66%	55%	65%	59%	68%	62%
3C	B.L. - Oaky Creek Junction to Coppabella	62%	61%	48%	65%	60%	69%	68%	66%	55%	65%	59%	68%	62%
3D	B.L. - Coppabella to Wotonga	62%	61%	48%	65%	60%	69%	68%	66%	55%	65%	59%	68%	62%
3E	B.L. - Wotonga to North Goonyella	63%	62%	49%	65%	60%	70%	69%	67%	56%	65%	59%	68%	63%
3F	B.L. - Blair Athol Mine to Wotonga	63%	61%	49%	64%	60%	69%	67%	66%	55%	64%	58%	68%	62%

FY24 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
GAPE Coal System		**61%**	**60%**	**47%**	**62%**	**58%**	**66%**	**70%**	**68%**	**57%**	**64%**	**63%**	**69%**	**62%**
1	M.L. - Collinsville to Pring	61%	60%	47%	62%	58%	66%	70%	68%	57%	64%	63%	69%	62%
1A	B.L. - Pring to Abbot Point	61%	60%	47%	62%	58%	66%	70%	68%	57%	64%	63%	69%	62%
1B	B.L. - Newlands Mine to Collinsville	61%	60%	47%	62%	58%	66%	70%	68%	57%	64%	63%	69%	62%
2A	**B.L. - North Goonyella Junction to Newlands Junction** *	61%	60%	47%	62%	58%	66%	70%	68%	57%	64%	63%	69%	62%
3C	B.L. - Oaky Creek Junction to Coppabella	60%	60%	46%	62%	57%	66%	69%	69%	58%	65%	63%	70%	62%
3D	B.L. - Coppabella to Wotonga	60%	60%	46%	62%	57%	66%	69%	69%	58%	65%	63%	70%	62%
3E	B.L. - Wotonga to North Goonyella	61%	60%	47%	62%	58%	66%	70%	69%	58%	65%	63%	70%	62%
3F	B.L. - Blair Athol Mine to Wotonga	61%	59%	48%	61%	58%	66%	70%	66%	56%	62%	60%	67%	61%

FY25 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
GAPE Coal System		**65%**	**64%**	**52%**	**67%**	**62%**	**72%**	**68%**	**68%**	**57%**	**67%**	**60%**	**70%**	**64%**
1	M.L. - Collinsville to Pring	65%	64%	52%	67%	62%	72%	68%	68%	57%	67%	60%	70%	64%
1A	B.L. - Pring to Abbot Point	65%	64%	52%	67%	62%	72%	68%	68%	57%	67%	60%	70%	64%
1B	B.L. - Newlands Mine to Collinsville	65%	64%	52%	67%	62%	72%	68%	68%	57%	67%	60%	70%	64%
2A	**B.L. - North Goonyella Junction to Newlands Junction** *	65%	64%	52%	67%	62%	72%	68%	68%	57%	67%	60%	70%	64%
3C	B.L. - Oaky Creek Junction to Coppabella	64%	65%	51%	67%	62%	72%	70%	69%	57%	67%	61%	71%	64%
3D	B.L. - Coppabella to Wotonga	64%	65%	51%	67%	62%	72%	70%	69%	57%	67%	61%	71%	64%
3E	B.L. - Wotonga to North Goonyella	65%	65%	52%	67%	62%	72%	69%	68%	57%	68%	61%	70%	65%
3F	B.L. - Blair Athol Mine to Wotonga	63%	62%	52%	64%	59%	69%	65%	65%	55%	65%	58%	67%	62%

FY26 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
GAPE Coal System		**66%**	**64%**	**50%**	**66%**	**62%**	**72%**	**68%**	**68%**	**57%**	**66%**	**60%**	**70%**	**64%**
1	M.L. - Collinsville to Pring	66%	64%	50%	66%	62%	72%	68%	68%	57%	66%	60%	70%	64%
1A	B.L. - Pring to Abbot Point	66%	64%	50%	66%	62%	72%	68%	68%	57%	66%	60%	70%	64%
1B	B.L. - Newlands Mine to Collinsville	66%	64%	50%	66%	62%	72%	68%	68%	57%	66%	60%	70%	64%
2A	**B.L. - North Goonyella Junction to Newlands Junction** *	66%	64%	50%	66%	62%	72%	68%	68%	57%	66%	60%	70%	64%
3C	B.L. - Oaky Creek Junction to Coppabella	64%	65%	50%	67%	62%	72%	70%	69%	56%	67%	61%	71%	64%
3D	B.L. - Coppabella to Wotonga	64%	65%	50%	67%	62%	72%	70%	69%	56%	67%	61%	71%	64%
3E	B.L. - Wotonga to North Goonyella	65%	65%	51%	67%	62%	72%	69%	69%	57%	67%	61%	70%	65%
3F	B.L. - Blair Athol Mine to Wotonga	66%	62%	49%	64%	60%	69%	65%	66%	56%	65%	58%	67%	62%

FY27 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
GAPE Coal System		**66%**	**64%**	**50%**	**67%**	**62%**	**72%**	**69%**	**66%**	**56%**	**66%**	**60%**	**70%**	**64%**
1	M.L. - Collinsville to Pring	66%	64%	50%	67%	62%	72%	69%	66%	56%	66%	60%	70%	64%
1A	B.L. - Pring to Abbot Point	66%	64%	50%	67%	62%	72%	69%	66%	56%	66%	60%	70%	64%
1B	B.L. - Newlands Mine to Collinsville	66%	64%	50%	67%	62%	72%	69%	66%	56%	66%	60%	70%	64%
2A	**B.L. - North Goonyella Junction to Newlands Junction** *	66%	64%	50%	67%	62%	72%	69%	66%	56%	66%	60%	70%	64%
3C	B.L. - Oaky Creek Junction to Coppabella	64%	65%	49%	68%	63%	72%	70%	67%	57%	67%	61%	71%	64%
3D	B.L. - Coppabella to Wotonga	64%	65%	49%	68%	63%	72%	70%	67%	57%	67%	61%	71%	64%
3E	B.L. - Wotonga to North Goonyella	65%	65%	50%	67%	63%	72%	69%	67%	57%	67%	61%	70%	64%
3F	B.L. - Blair Athol Mine to Wotonga	65%	62%	49%	64%	60%	69%	66%	64%	55%	64%	58%	67%	62%

Table B2: GAPE Coal System DNC per year per Origin/Destination

APPENDIX C: Goonyella Coal System Information

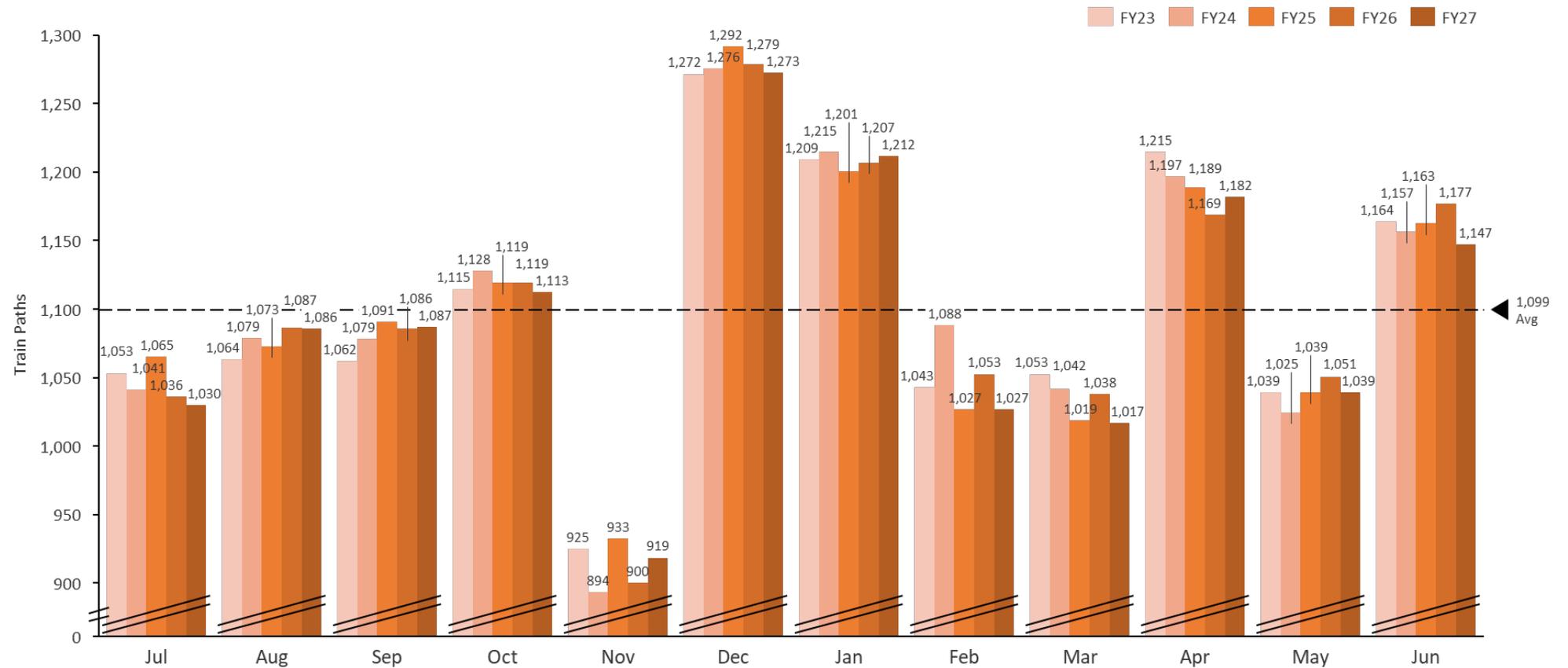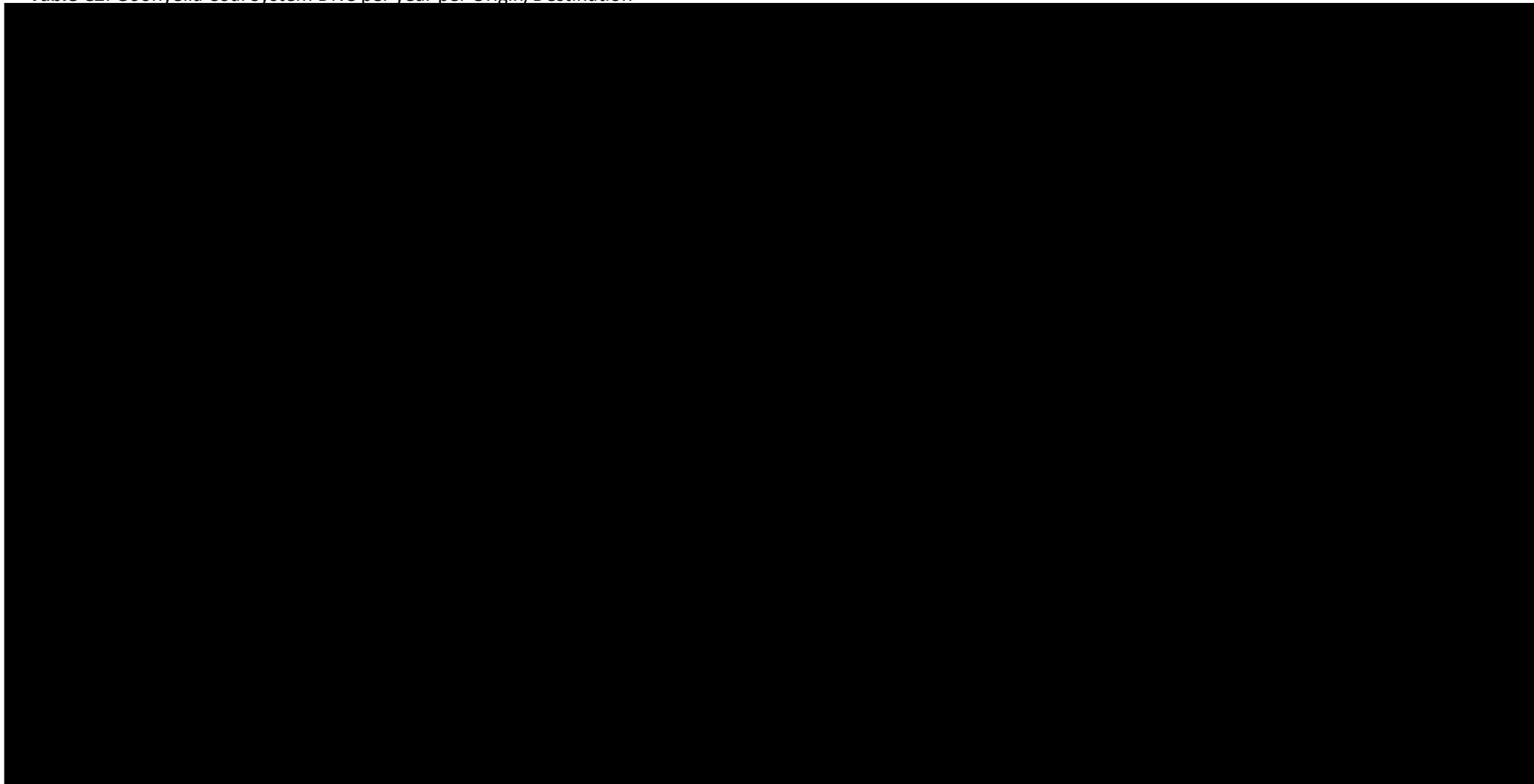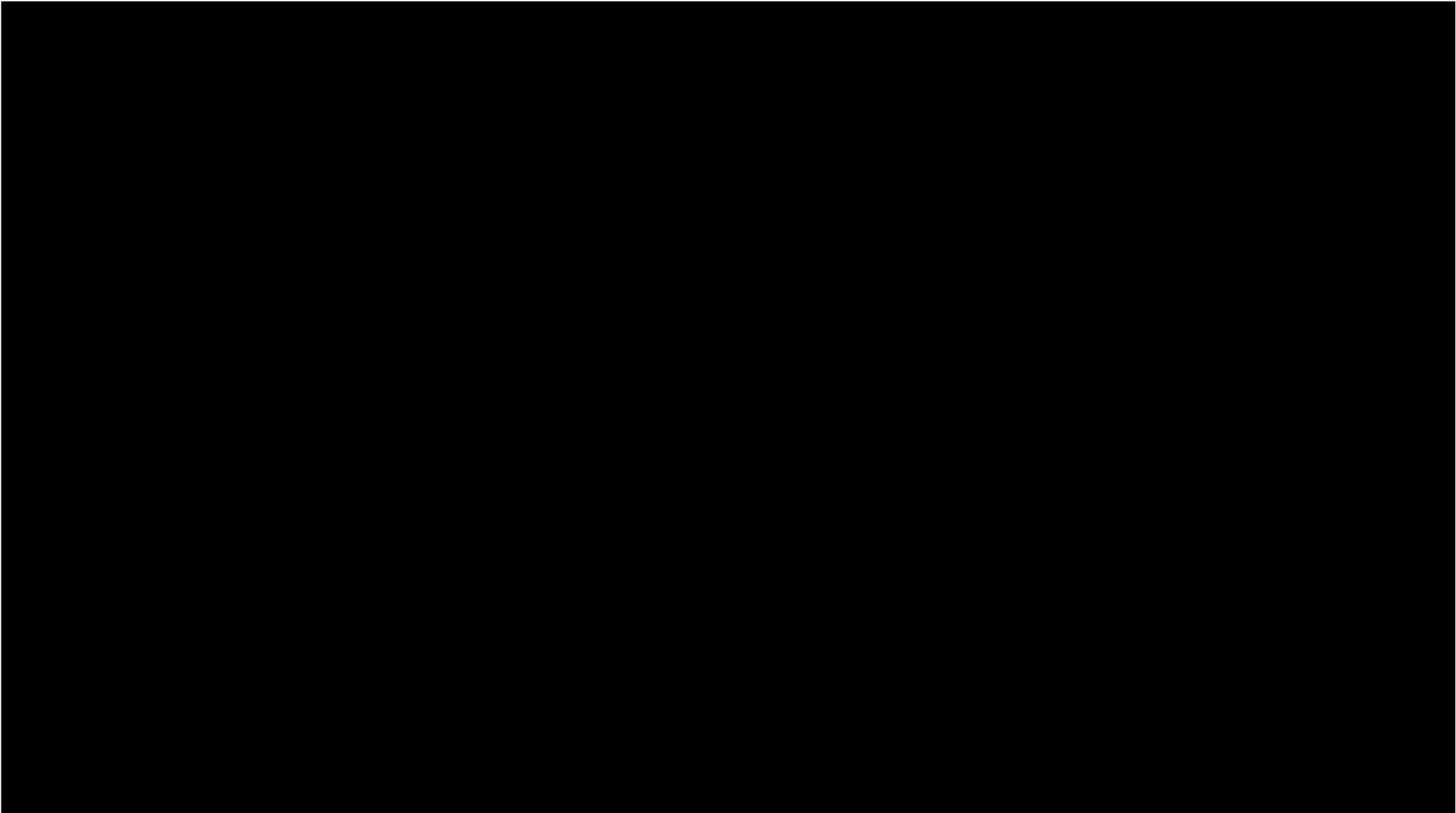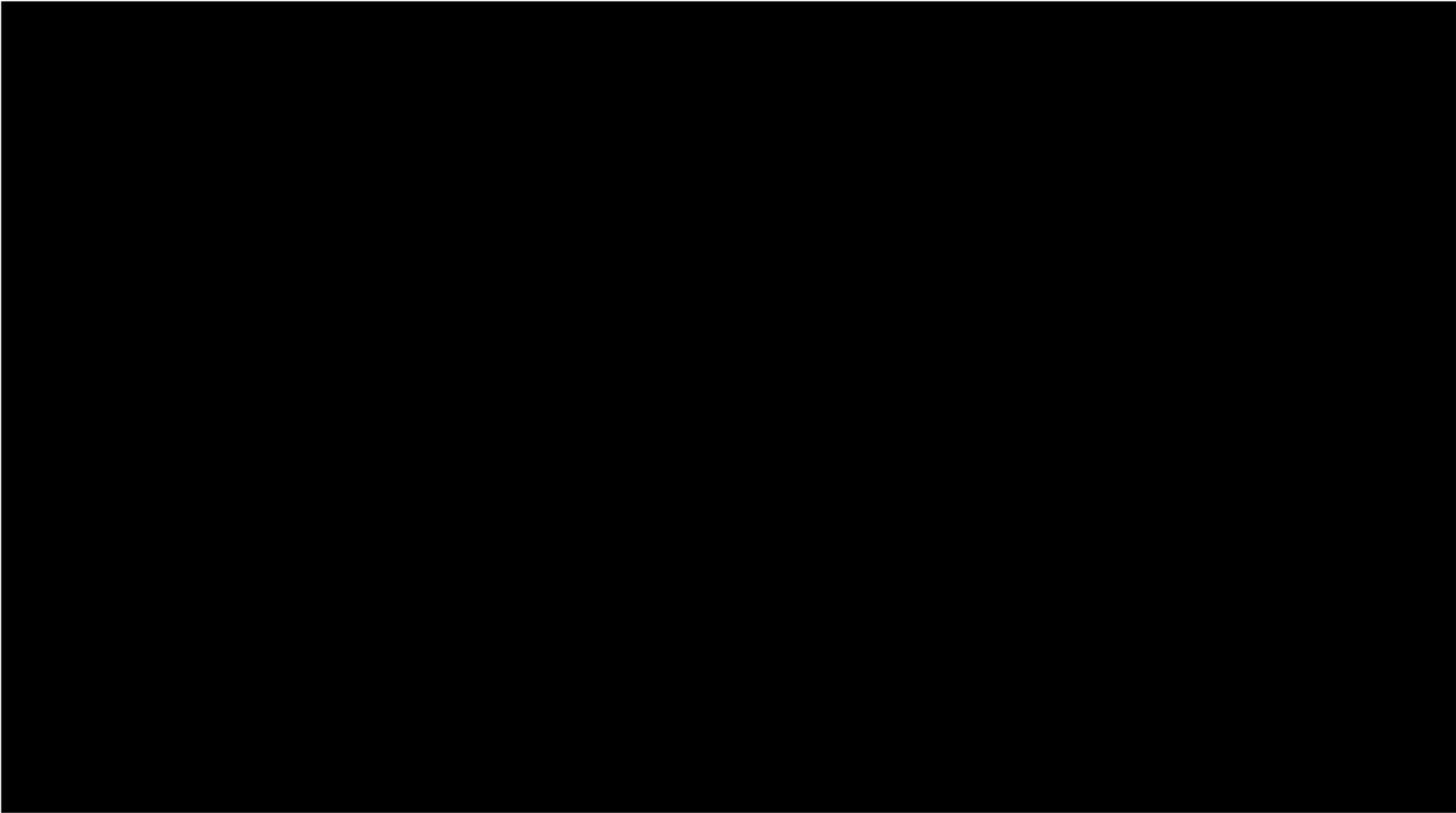**Chart C1**: Goonyella Coal System DNC per month per year

Table C1: Goonyella Coal System % Achieved of contract per mainline and branch line per month per year

% Achieved		FY23	FY24	FY25	FY26	FY27
Goonyella Coal System		**95%**	**94%**	**94%**	**94%**	**93%**
3	M.L. - Coppabella to Jilalan	95%	94%	94%	94%	93%
3A	B.L. - Jilalan to Port of Hay Point	95%	94%	94%	94%	93%
3B	B.L. - Hail Creek Mine to South Walker Creek Junction	106%	108%	108%	108%	108%
3C	B.L. - Oaky Creek Junction to Coppabella	91%	90%	91%	90%	90%
3D	B.L. - Coppabella to Wotonga	96%	93%	93%	93%	91%
3E	B.L. - Wotonga to North Goonyella	101%	98%	99%	99%	97%
3F	B.L. - Blair Athol Mine to Wotonga	93%	88%	89%	88%	87%

FY23 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Goonyella Coal System		**90%**	**90%**	**93%**	**95%**	**81%**	**108%**	**103%**	**98%**	**89%**	**107%**	**88%**	**102%**	**95%**
3	M.L. - Coppabella to Jilalan	90%	90%	93%	95%	81%	108%	103%	98%	89%	107%	88%	102%	95%
3A	B.L. - Jilalan to Port of Hay Point	90%	90%	93%	95%	81%	108%	103%	98%	89%	107%	88%	102%	95%
3B	B.L. - Hail Creek Mine to South Walker Creek Junction	106%	95%	108%	110%	92%	115%	111%	110%	106%	113%	104%	113%	106%
3C	B.L. - Oaky Creek Junction to Coppabella	84%	88%	89%	89%	77%	104%	99%	94%	84%	104%	83%	99%	91%
3D	B.L. - Coppabella to Wotonga	90%	92%	93%	96%	81%	110%	104%	99%	90%	107%	88%	102%	96%
3E	B.L. - Wotonga to North Goonyella	95%	98%	97%	101%	85%	116%	111%	104%	97%	114%	93%	108%	101%
3F	B.L. - Blair Athol Mine to Wotonga	87%	89%	93%	92%	80%	106%	99%	95%	87%	103%	85%	97%	93%

FY24 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Goonyella Coal System		**87%**	**90%**	**93%**	**94%**	**78%**	**107%**	**102%**	**98%**	**88%**	**104%**	**86%**	**101%**	**94%**
3	M.L. - Coppabella to Jilalan	87%	90%	93%	94%	78%	107%	102%	98%	88%	104%	86%	101%	94%
3A	B.L. - Jilalan to Port of Hay Point	87%	90%	93%	94%	78%	107%	102%	98%	88%	104%	86%	101%	94%
3B	B.L. - Hail Creek Mine to South Walker Creek Junction	102%	106%	105%	107%	103%	119%	113%	112%	104%	113%	102%	113%	108%
3C	B.L. - Oaky Creek Junction to Coppabella	83%	86%	89%	91%	73%	105%	99%	94%	84%	103%	83%	97%	90%
3D	B.L. - Coppabella to Wotonga	86%	89%	93%	93%	75%	106%	102%	97%	86%	102%	85%	100%	93%
3E	B.L. - Wotonga to North Goonyella	90%	93%	97%	99%	82%	111%	108%	104%	93%	109%	92%	105%	98%
3F	B.L. - Blair Athol Mine to Wotonga	83%	87%	89%	89%	68%	101%	96%	93%	81%	97%	78%	97%	88%

FY25 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Goonyella Coal System		**90%**	**90%**	**95%**	**94%**	**81%**	**109%**	**101%**	**96%**	**86%**	**104%**	**88%**	**101%**	**94%**
3	M.L. - Coppabella to Jilalan	90%	90%	95%	94%	81%	109%	101%	96%	86%	104%	88%	101%	94%
3A	B.L. - Jilalan to Port of Hay Point	90%	90%	95%	94%	81%	109%	101%	96%	86%	104%	88%	101%	94%
3B	B.L. - Hail Creek Mine to South Walker Creek Junction	104%	102%	110%	110%	102%	116%	112%	110%	104%	115%	104%	113%	108%
3C	B.L. - Oaky Creek Junction to Coppabella	86%	87%	91%	91%	78%	106%	99%	91%	82%	101%	82%	99%	91%
3D	B.L. - Coppabella to Wotonga	89%	89%	94%	92%	79%	108%	100%	97%	84%	103%	87%	100%	93%
3E	B.L. - Wotonga to North Goonyella	94%	95%	100%	97%	84%	113%	105%	102%	90%	109%	93%	104%	99%
3F	B.L. - Blair Athol Mine to Wotonga	84%	85%	89%	88%	75%	105%	96%	92%	79%	96%	83%	97%	89%

FY26 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Goonyella Coal System		**87%**	**91%**	**94%**	**94%**	**78%**	**108%**	**102%**	**98%**	**87%**	**102%**	**88%**	**102%**	**94%**
3	M.L. - Coppabella to Jilalan	87%	91%	94%	94%	78%	108%	102%	98%	87%	102%	88%	102%	94%
3A	B.L. - Jilalan to Port of Hay Point	87%	91%	94%	94%	78%	108%	102%	98%	87%	102%	88%	102%	94%
3B	B.L. - Hail Creek Mine to South Walker Creek Junction	107%	107%	110%	110%	97%	117%	114%	112%	106%	113%	103%	113%	108%
3C	B.L. - Oaky Creek Junction to Coppabella	82%	88%	91%	89%	73%	105%	98%	95%	83%	98%	85%	99%	90%
3D	B.L. - Coppabella to Wotonga	86%	90%	93%	93%	77%	107%	100%	97%	85%	101%	87%	101%	93%
3E	B.L. - Wotonga to North Goonyella	92%	98%	99%	99%	83%	112%	107%	104%	92%	107%	93%	109%	99%
3F	B.L. - Blair Athol Mine to Wotonga	81%	87%	88%	90%	73%	102%	97%	91%	79%	97%	84%	95%	88%

| FY27 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Goonyella Coal System		**86%**	**91%**	**94%**	**93%**	**80%**	**107%**	**102%**	**92%**	**85%**	**103%**	**87%**	**100%**	**93%**
3	M.L. - Coppabella to Jilalan	86%	91%	94%	93%	80%	107%	102%	92%	85%	103%	87%	100%	93%
3A	B.L. - Jilalan to Port of Hay Point	86%	91%	94%	93%	80%	107%	102%	92%	85%	103%	87%	100%	93%
3B	B.L. - Hail Creek Mine to South Walker Creek Junction	105%	104%	111%	108%	98%	115%	113%	107%	106%	112%	104%	114%	108%
3C	B.L. - Oaky Creek Junction to Coppabella	83%	89%	91%	91%	77%	105%	99%	90%	79%	101%	83%	95%	90%
3D	B.L. - Coppabella to Wotonga	84%	89%	93%	91%	77%	106%	100%	90%	85%	101%	86%	99%	91%
3E	B.L. - Wotonga to North Goonyella	90%	96%	98%	97%	84%	111%	107%	96%	90%	108%	92%	104%	97%
3F	B.L. - Blair Athol Mine to Wotonga	80%	85%	88%	87%	75%	100%	94%	89%	80%	94%	82%	95%	87%

Table C2: Goonyella Coal System DNC per year per Origin/Destination
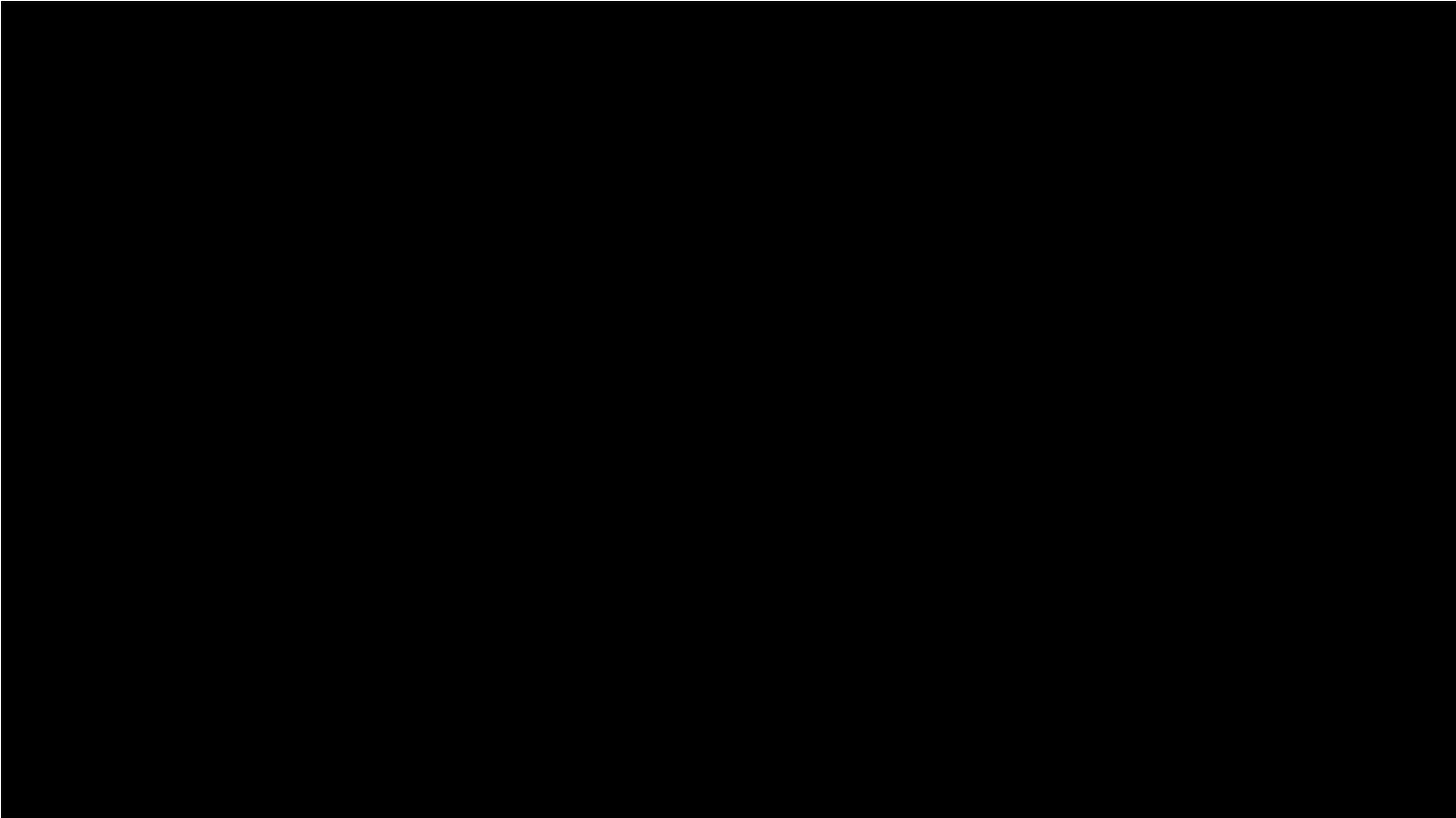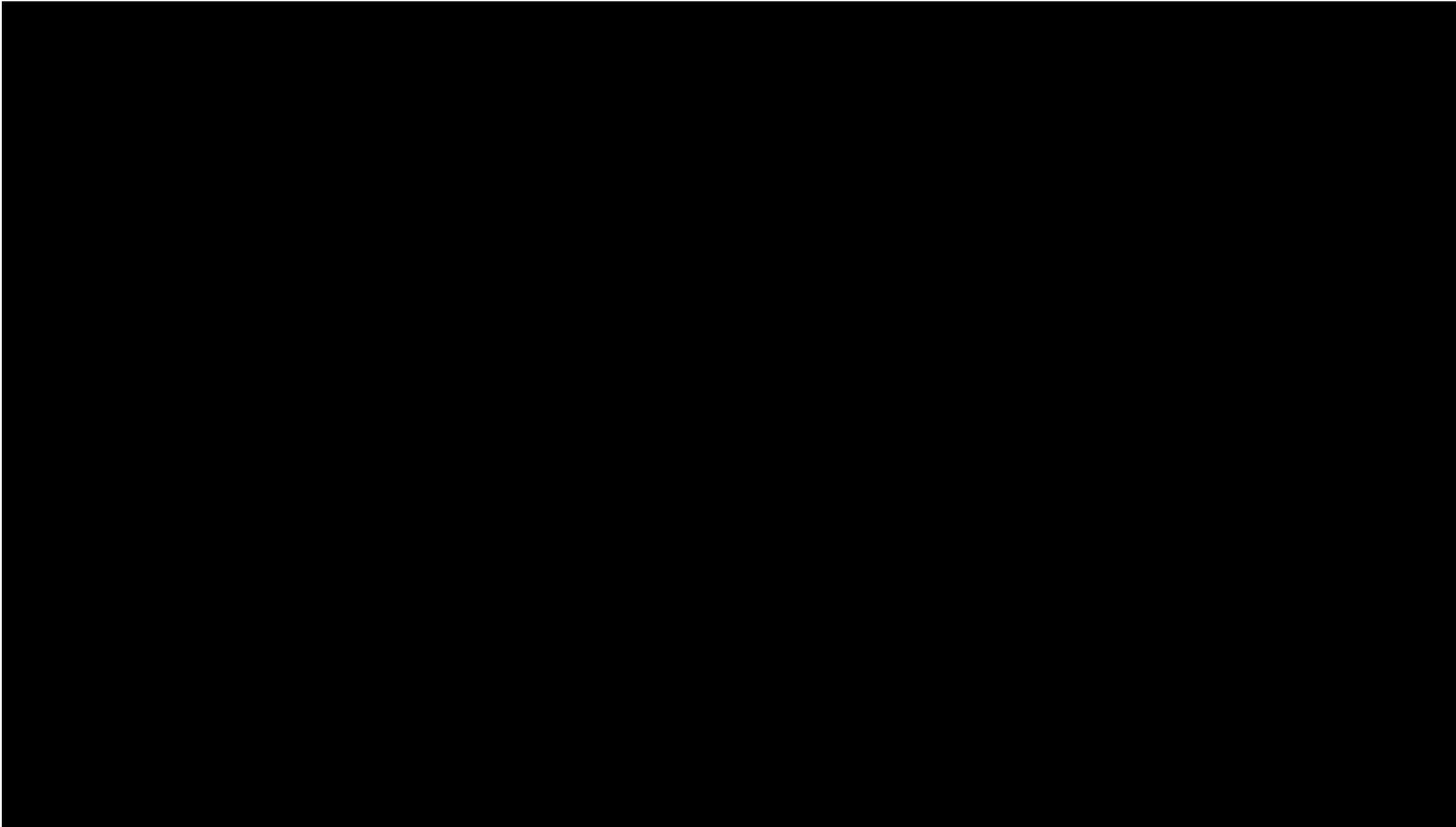
APPENDIX D: Blackwater Coal System Information

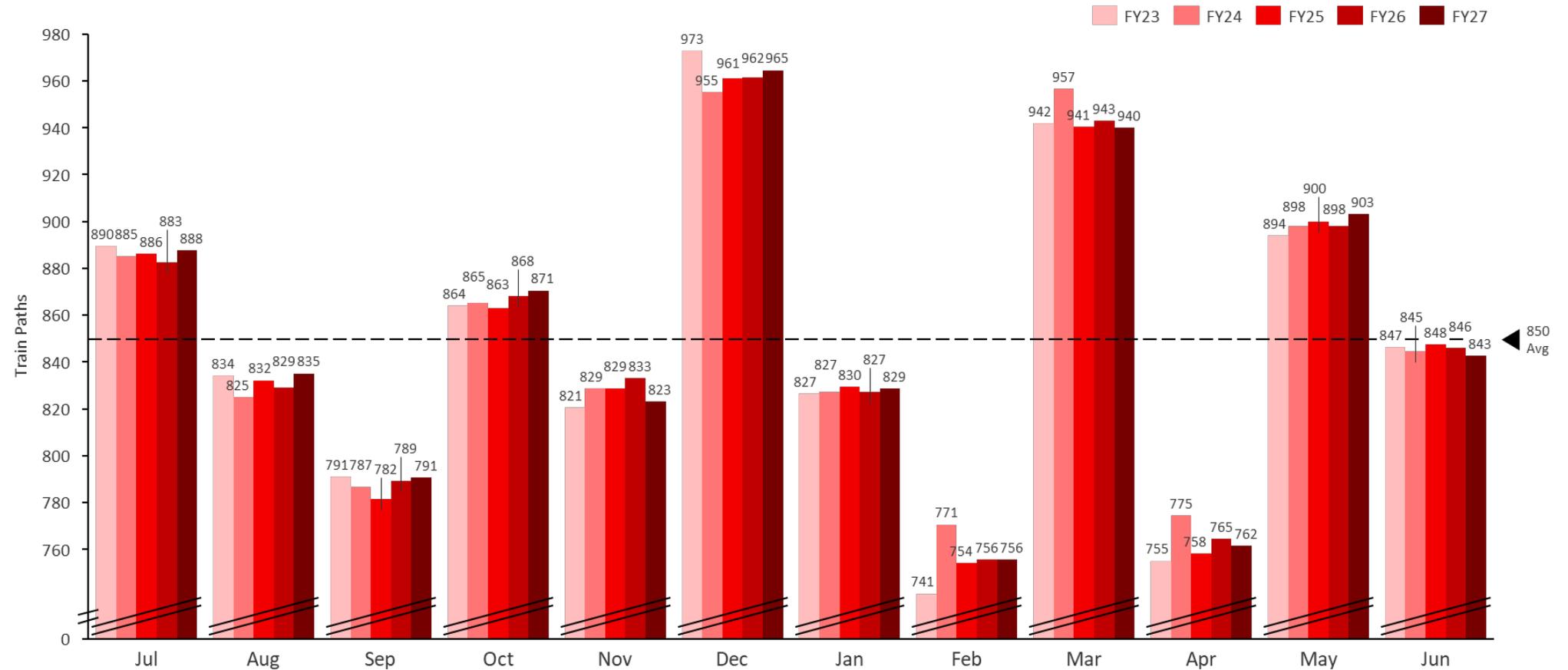**Chart D1**: Blackwater Coal System DNC per month per year

Table D1: Blackwater Coal System % Achieved of contract per mainline and branch line per month per year

% Achieved		FY23	FY24	FY25	FY26	FY27
	Blackwater Coal System	**98%**	**98%**	**99%**	**100%**	**100%**
4	M.L. - Bluff to Callemondah	97%	98%	99%	100%	100%
4A	B.L. - Callemondah to Port of Gladstone	96%	97%	98%	99%	99%
4B	B.L. - Burngrove to Bluff	97%	98%	99%	100%	100%
4C	B.L. - Rolleston Mine to Rangal	97%	97%	98%	100%	100%
4D	B.L. - Oaky Creek Junction to Burngrove	97%	99%	100%	100%	100%
4E						
3	M.L. - Coppabella to Jilalan	97%				
3B						
3C	B.L. - Oaky Creek Junction to Coppabella	95%	95%	96%	97%	97%

FY23 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
	Blackwater Coal System	**101%**	**94%**	**93%**	**98%**	**96%**	**110%**	**94%**	**93%**	**107%**	**89%**	**101%**	**99%**	**98%**
4	M.L. - Bluff to Callemondah	101%	94%	93%	98%	96%	110%	94%	93%	107%	89%	101%	99%	97%
4A	B.L. - Callemondah to Port of Gladstone	100%	94%	92%	97%	95%	110%	93%	92%	106%	87%	101%	99%	96%
4B	B.L. - Burngrove to Bluff	101%	94%	93%	98%	96%	110%	94%	93%	107%	89%	101%	99%	97%
4C	B.L. - Rolleston Mine to Rangal	101%	95%	93%	98%	97%	110%	93%	93%	106%	89%	101%	99%	97%
4D	B.L. - Oaky Creek Junction to Burngrove	100%	93%	92%	97%	92%	111%	94%	93%	108%	89%	103%	99%	97%
4E														
3	M.L. - Coppabella to Jilalan	100%	90%	90%	100%	90%	110%							97%
3B														
3C	B.L. - Oaky Creek Junction to Coppabella	97%	92%	90%	96%	91%	109%	91%	88%	104%	88%	99%	98%	95%

FY24 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
	Blackwater Coal System	**100%**	**93%**	**92%**	**98%**	**97%**	**108%**	**95%**	**94%**	**110%**	**92%**	**103%**	**100%**	**98%**
4	M.L. - Bluff to Callemondah	100%	93%	92%	98%	97%	108%	95%	94%	110%	92%	103%	100%	98%
4A	B.L. - Callemondah to Port of Gladstone	100%	92%	91%	97%	96%	108%	94%	93%	109%	91%	102%	99%	97%
4B	B.L. - Burngrove to Bluff	100%	93%	92%	98%	97%	108%	95%	94%	110%	92%	103%	100%	98%
4C	B.L. - Rolleston Mine to Rangal	99%	93%	92%	98%	96%	107%	95%	94%	109%	92%	102%	100%	97%
4D	B.L. - Oaky Creek Junction to Burngrove	101%	95%	94%	98%	98%	110%	95%	95%	111%	93%	104%	101%	99%
4E														
3	M.L. - Coppabella to Jilalan													
3B														
3C	B.L. - Oaky Creek Junction to Coppabella	95%	91%	90%	95%	92%	106%	92%	90%	108%	91%	101%	99%	95%

FY25 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
	Blackwater Coal System	**101%**	**95%**	**93%**	**99%**	**98%**	**110%**	**96%**	**96%**	**108%**	**90%**	**104%**	**101%**	**99%**
4	M.L. - Bluff to Callemondah	101%	95%	93%	99%	98%	110%	96%	96%	108%	90%	104%	101%	99%
4A	B.L. - Callemondah to Port of Gladstone	101%	94%	92%	98%	97%	110%	95%	95%	108%	89%	103%	100%	98%
4B	B.L. - Burngrove to Bluff	101%	95%	93%	99%	98%	110%	96%	96%	108%	90%	104%	101%	99%
4C	B.L. - Rolleston Mine to Rangal	101%	95%	92%	99%	98%	109%	96%	96%	108%	91%	103%	101%	98%
4D	B.L. - Oaky Creek Junction to Burngrove	103%	96%	94%	99%	98%	111%	95%	96%	109%	91%	105%	101%	100%
4E														
3	M.L. - Coppabella to Jilalan													
3B														
3C	B.L. - Oaky Creek Junction to Coppabella	97%	93%	90%	96%	93%	107%	93%	91%	106%	88%	101%	99%	96%

FY26 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
	Blackwater Coal System	**102%**	**96%**	**94%**	**101%**	**100%**	**112%**	**96%**	**97%**	**110%**	**92%**	**105%**	**102%**	**100%**
4	M.L. - Bluff to Callemondah	102%	96%	94%	101%	100%	112%	96%	97%	110%	92%	105%	102%	100%
4A	B.L. - Callemondah to Port of Gladstone	101%	95%	93%	100%	100%	112%	96%	97%	110%	91%	104%	101%	99%
4B	B.L. - Burngrove to Bluff	102%	96%	94%	101%	100%	112%	96%	97%	110%	92%	105%	102%	100%
4C	B.L. - Rolleston Mine to Rangal	101%	95%	94%	101%	100%	112%	96%	97%	109%	92%	104%	102%	100%
4D	B.L. - Oaky Creek Junction to Burngrove	103%	96%	95%	102%	100%	113%	96%	97%	111%	94%	106%	102%	100%
4E														
3	M.L. - Coppabella to Jilalan													
3B														
3C	B.L. - Oaky Creek Junction to Coppabella	97%	93%	91%	100%	96%	110%	94%	92%	108%	91%	103%	100%	97%

FY27 - % Achieved		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
	Blackwater Coal System	**103%**	**97%**	**95%**	**101%**	**99%**	**112%**	**97%**	**94%**	**110%**	**92%**	**105%**	**102%**	**100%**
4	M.L. - Bluff to Callemondah	103%	97%	95%	101%	99%	112%	97%	94%	110%	92%	105%	102%	100%
4A	B.L. - Callemondah to Port of Gladstone	103%	96%	94%	101%	98%	112%	96%	93%	109%	91%	105%	101%	99%
4B	B.L. - Burngrove to Bluff	103%	97%	95%	101%	99%	112%	97%	94%	110%	92%	105%	102%	100%
4C	B.L. - Rolleston Mine to Rangal	103%	97%	94%	101%	99%	112%	97%	94%	109%	92%	105%	101%	100%
4D	B.L. - Oaky Creek Junction to Burngrove	104%	98%	97%	102%	99%	114%	96%	94%	111%	93%	106%	102%	100%
4E														
3	M.L. - Coppabella to Jilalan													
3B														
3C	B.L. - Oaky Creek Junction to Coppabella	99%	96%	95%	100%	94%	110%	94%	88%	108%	90%	103%	100%	97%

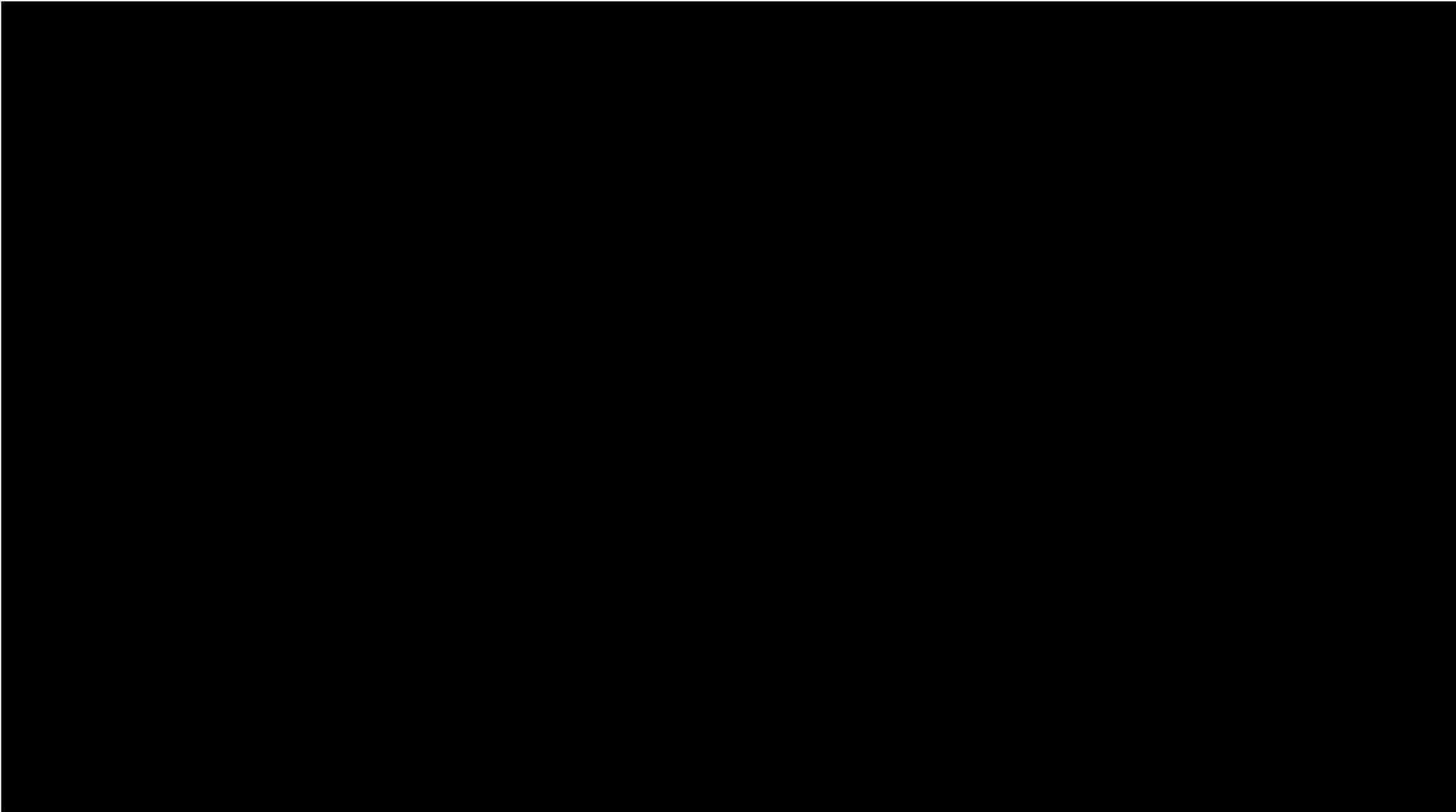**Table D2:** Blackwater Coal System DNC per year per Origin/Destination
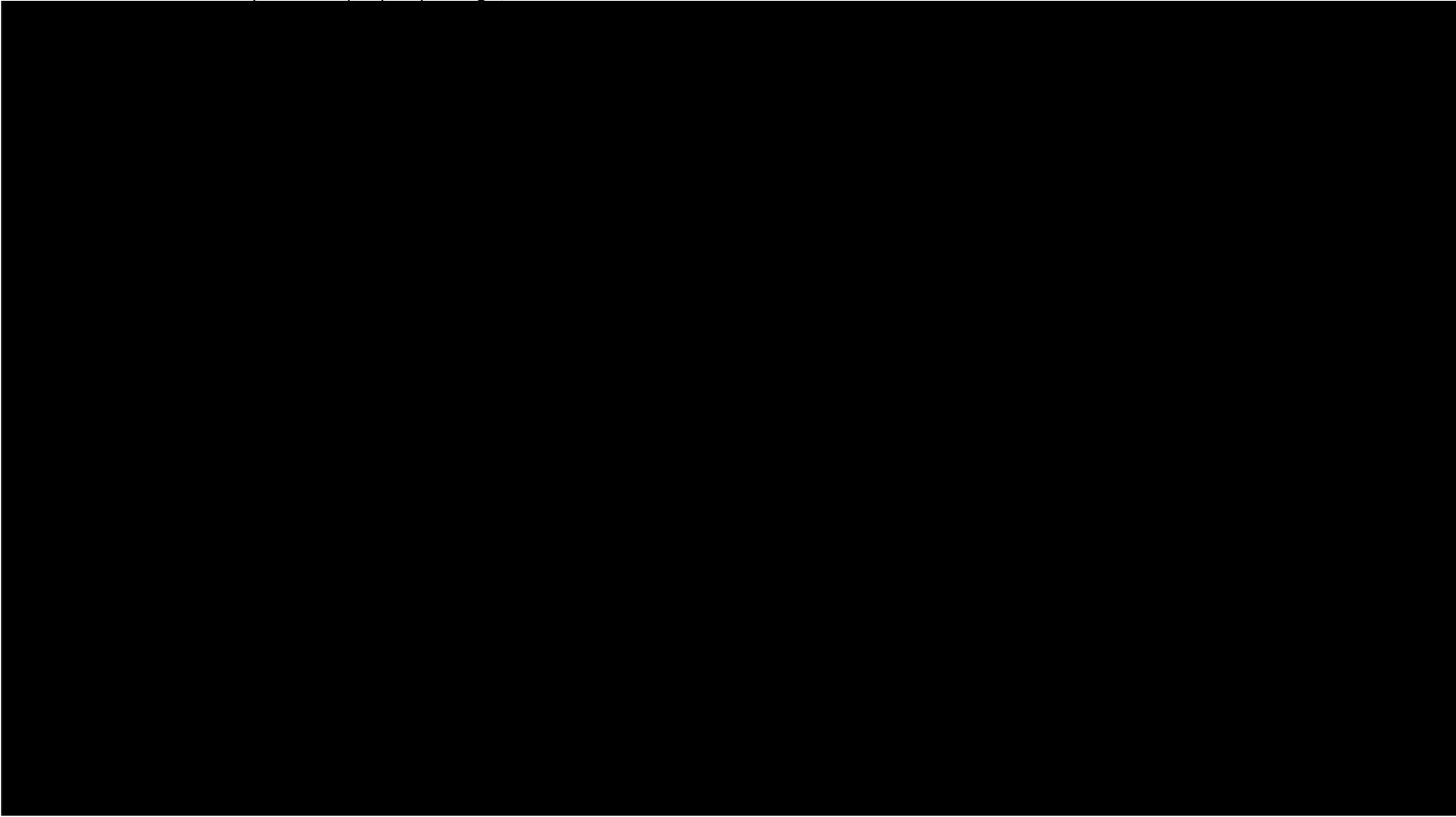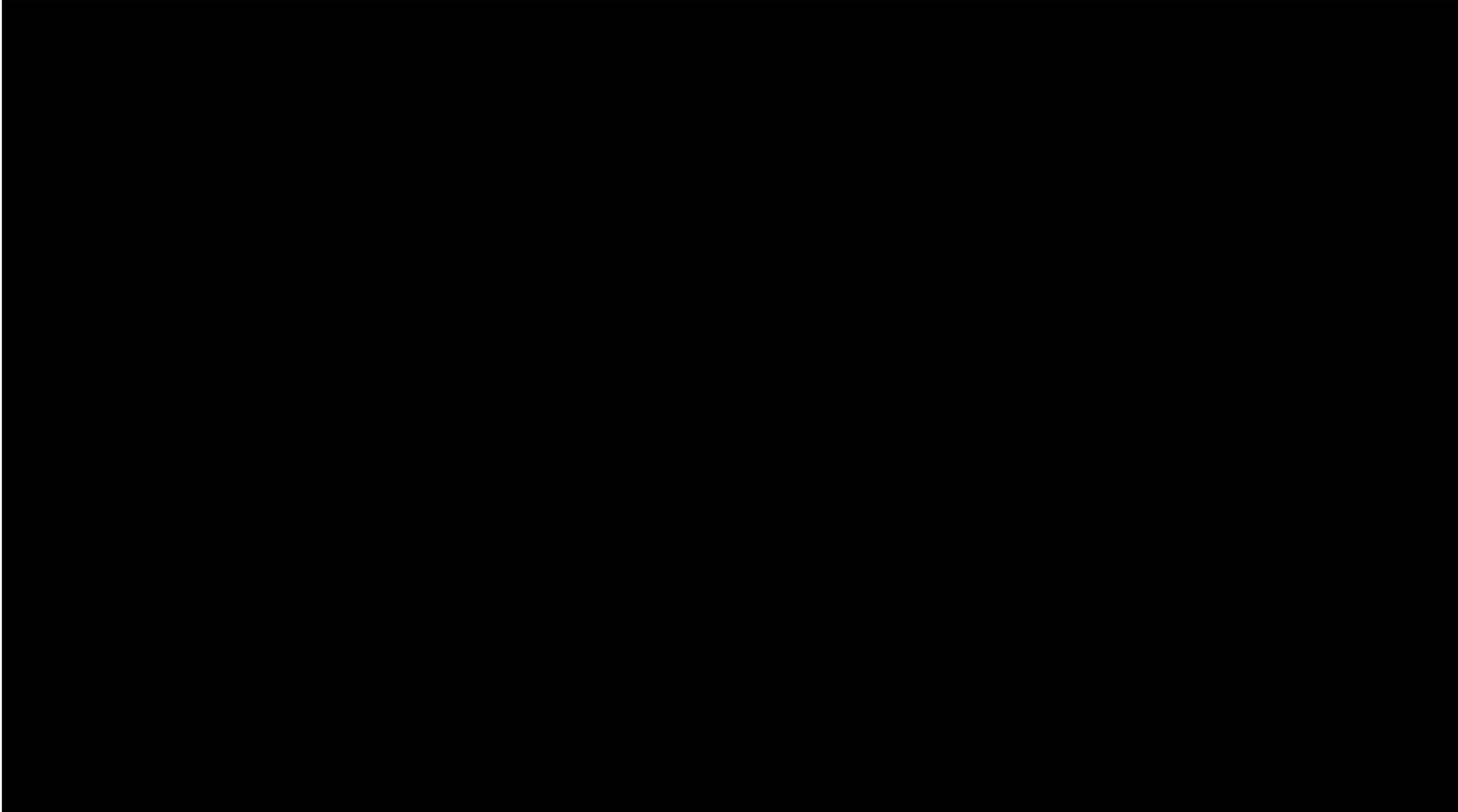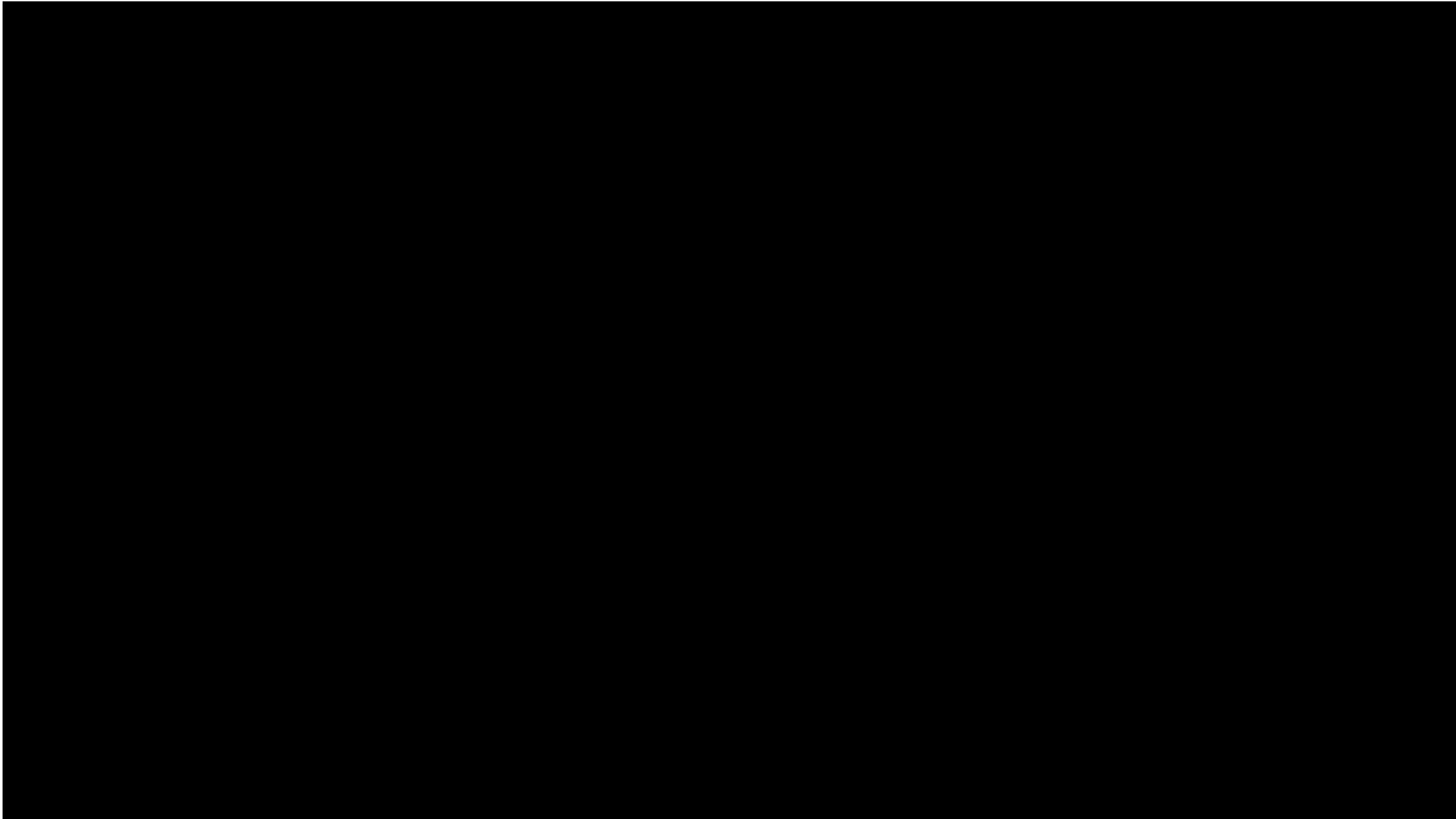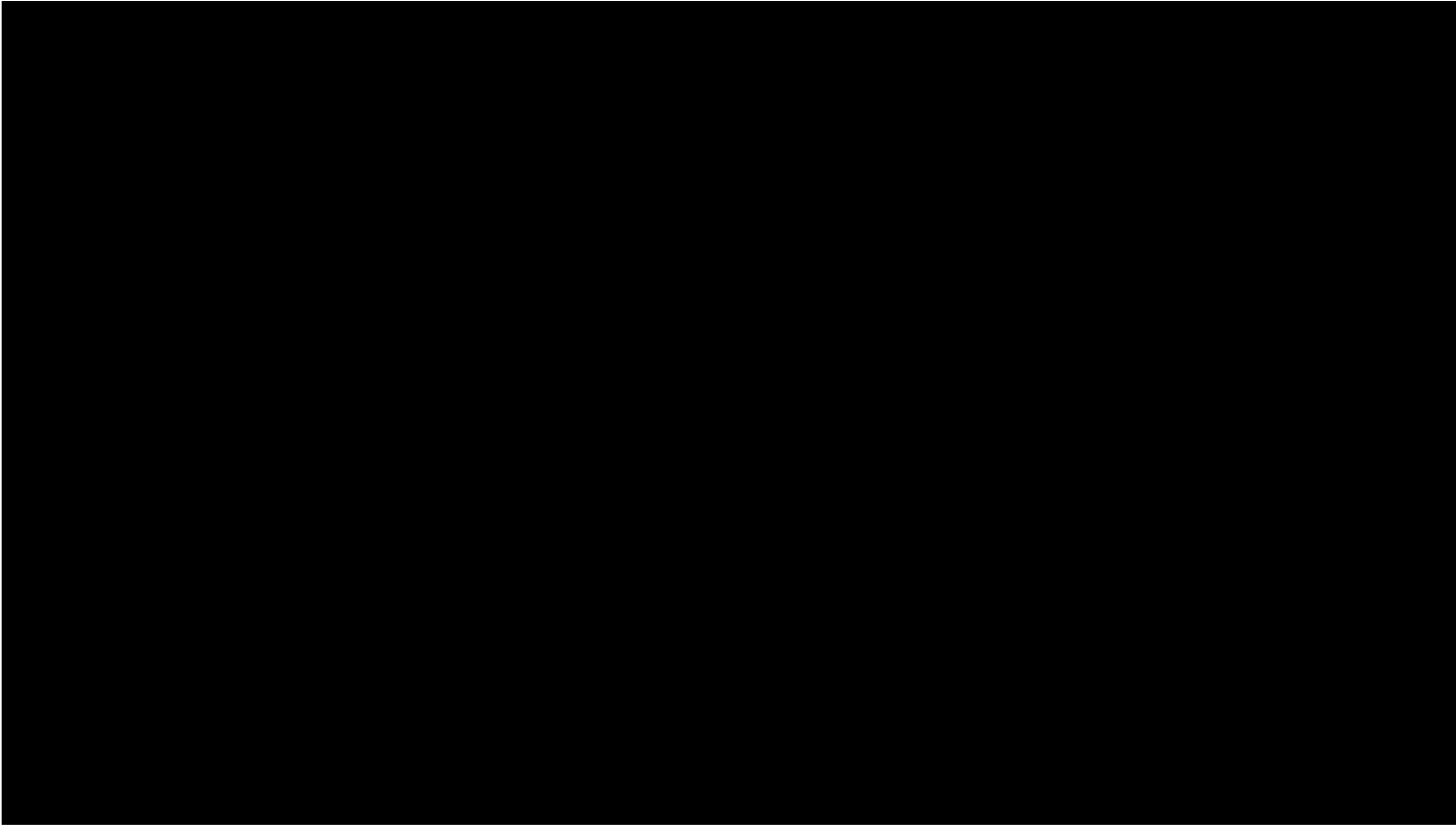
APPENDIX E: Moura Coal System Information

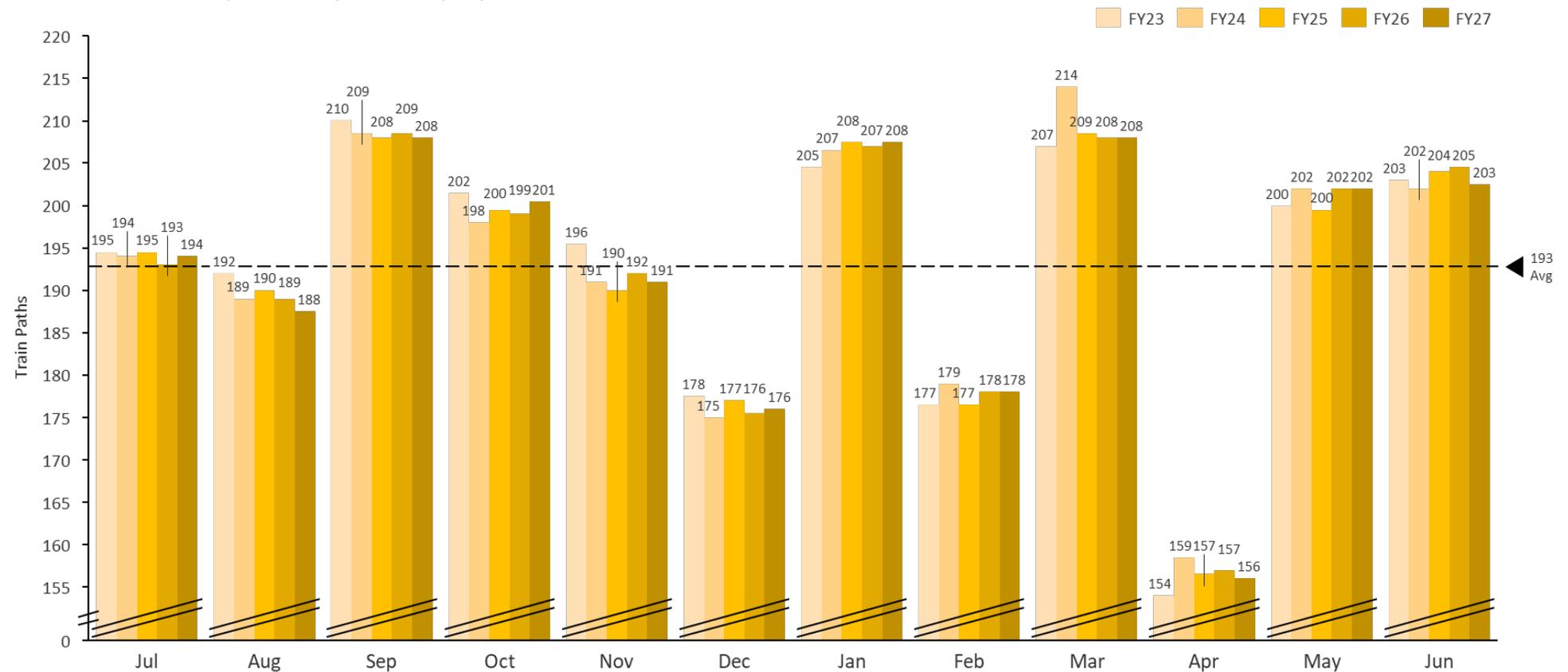**Chart E1**: Moura Coal System DNC per month per year

Table E1: Moura Coal System % Achieved of contract per mainline and branch line per month per year

% Achieved of Contract		FY23	FY24	FY25	FY26	FY27
Moura Coal System		**99%**	**99%**	**99%**	**99%**	**99%**
5	M.L. - Dumgree to Callemondah	99%	99%	99%	99%	99%
5A	B.L. - Earlsfield to Dumgree	99%	99%	99%	99%	99%
5B						
5C	B.L. - Earlsfield to Moura	98%	98%	98%	98%	98%
4A	B.L. - Callemondah to Port of Gladstone	99%	99%	99%	99%	99%

FY23 - % Achieved of Contract		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Moura Coal System		**98%**	**97%**	**110%**	**102%**	**102%**	**90%**	**103%**	**99%**	**105%**	**81%**	**101%**	**106%**	**99%**
5	M.L. - Dumgree to Callemondah	98%	97%	110%	102%	102%	90%	103%	99%	105%	81%	101%	106%	99%
5A	B.L. - Earlsfield to Dumgree	98%	97%	110%	102%	102%	90%	103%	99%	105%	81%	101%	106%	99%
5B														
5C	B.L. - Earlsfield to Moura	97%	96%	111%	100%	103%	89%	99%	98%	102%	78%	102%	106%	98%
4A	B.L. - Callemondah to Port of Gladstone	98%	97%	110%	102%	102%	90%	103%	99%	105%	81%	101%	106%	99%

FY24 - % Achieved of Contract		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Moura Coal System		**98%**	**95%**	**109%**	**100%**	**100%**	**88%**	**104%**	**97%**	**108%**	**83%**	**102%**	**106%**	**99%**
5	M.L. - Dumgree to Callemondah	98%	95%	109%	100%	100%	88%	104%	97%	108%	83%	102%	106%	99%
5A	B.L. - Earlsfield to Dumgree	98%	95%	109%	100%	100%	88%	104%	97%	108%	83%	102%	106%	99%
5B														
5C	B.L. - Earlsfield to Moura	96%	95%	111%	98%	100%	88%	101%	95%	106%	80%	103%	105%	98%
4A	B.L. - Callemondah to Port of Gladstone	98%	95%	109%	100%	100%	88%	104%	97%	108%	83%	102%	106%	99%

FY25 - % Achieved of Contract		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Moura Coal System		**98%**	**96%**	**109%**	**101%**	**99%**	**89%**	**105%**	**99%**	**105%**	**82%**	**101%**	**107%**	**99%**
5	M.L. - Dumgree to Callemondah	98%	96%	109%	101%	99%	89%	105%	99%	105%	82%	101%	107%	99%
5A	B.L. - Earlsfield to Dumgree	98%	96%	109%	101%	99%	89%	105%	99%	105%	82%	101%	107%	99%
5B														
5C	B.L. - Earlsfield to Moura	96%	95%	110%	99%	99%	89%	101%	98%	103%	79%	102%	107%	98%
4A	B.L. - Callemondah to Port of Gladstone	98%	96%	109%	101%	99%	89%	105%	99%	105%	82%	101%	107%	99%

FY26 - % Achieved of Contract		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Moura Coal System		**97%**	**95%**	**109%**	**101%**	**101%**	**89%**	**105%**	**100%**	**105%**	**82%**	**102%**	**107%**	**99%**
5	M.L. - Dumgree to Callemondah	97%	95%	109%	101%	101%	89%	105%	100%	105%	82%	102%	107%	99%
5A	B.L. - Earlsfield to Dumgree	97%	95%	109%	101%	101%	89%	105%	100%	105%	82%	102%	107%	99%
5B														
5C	B.L. - Earlsfield to Moura	95%	95%	111%	99%	101%	88%	101%	100%	103%	79%	103%	107%	98%
4A	B.L. - Callemondah to Port of Gladstone	97%	95%	109%	101%	101%	89%	105%	100%	105%	82%	102%	107%	99%

FY27 - % Achieved of Contract		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Moura Coal System		**98%**	**95%**	**109%**	**101%**	**100%**	**89%**	**105%**	**97%**	**105%**	**82%**	**102%**	**106%**	**99%**
5	M.L. - Dumgree to Callemondah	98%	95%	109%	101%	100%	89%	105%	97%	105%	82%	102%	106%	99%
5A	B.L. - Earlsfield to Dumgree	98%	95%	109%	101%	100%	89%	105%	97%	105%	82%	102%	106%	99%
5B														
5C	B.L. - Earlsfield to Moura	96%	93%	110%	100%	100%	89%	101%	95%	103%	78%	103%	106%	98%
4A	B.L. - Callemondah to Port of Gladstone	98%	95%	109%	101%	100%	89%	105%	97%	105%	82%	102%	106%	99%

Table E2: Moura Coal System DNC per year per Origin/Destination
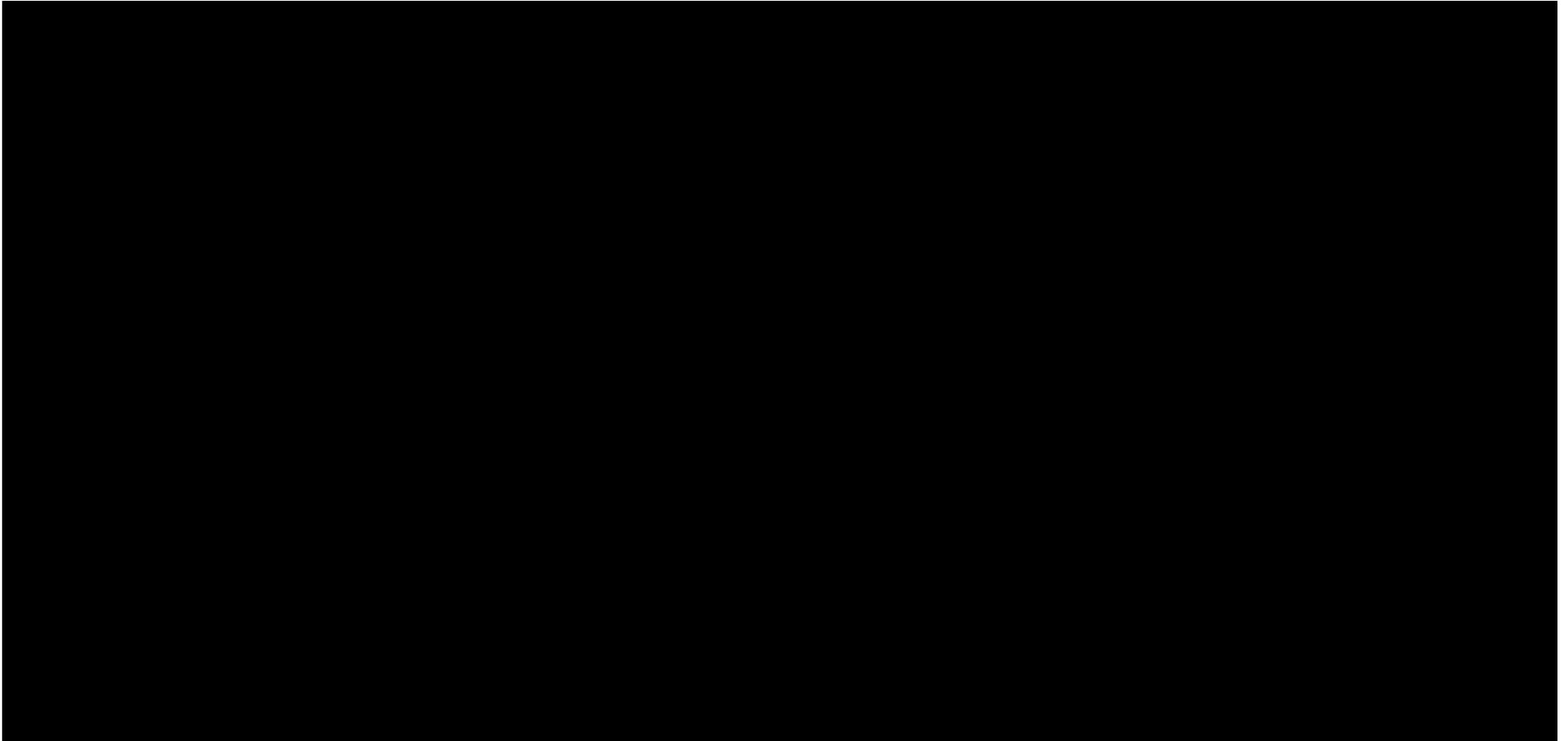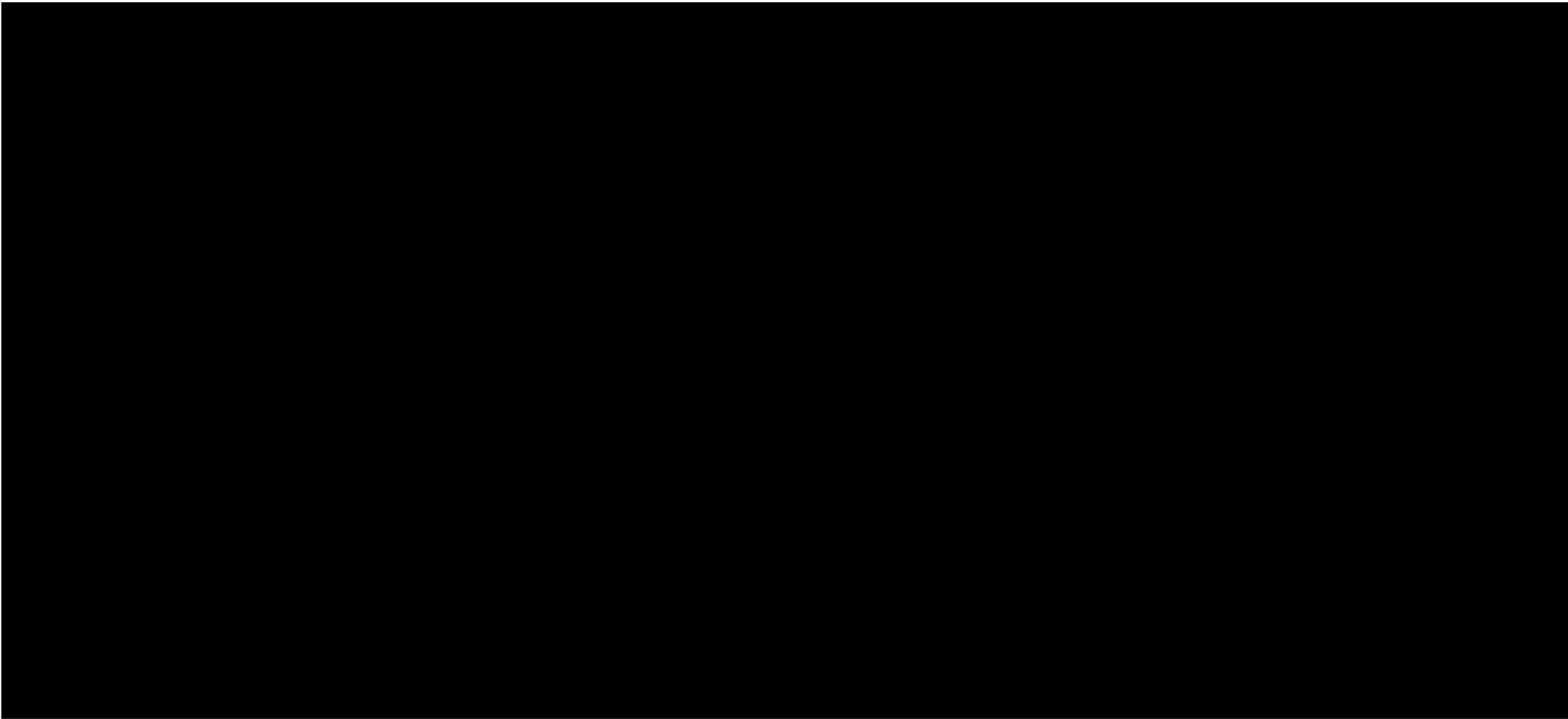
APPENDIX F: Aggregated Summary for CQCN

Table F1: Aggregated DNC, Committed Capacity and ECD per mainline / branch line per year (Train Paths)

Coal System		Mainline / Branch Line	DNC (Train Paths)					Committed Capacity (Train Paths)					ECD (Train Paths)				
			FY23	FY24	FY25	FY26	FY27	FY23	FY24	FY25	FY26	FY27	FY23	FY24	FY25	FY26	FY27
Newlands	1	M.L. - Collinsville to Pring	4,727	4,820	4,828	4,838	4,834	7,471	7,490	7,460	7,460	7,482	2,744	2,670	2,633	2,623	2,649
Newlands	1A	B.L. - Pring to Abbot Point	4,727	4,820	4,828	4,838	4,834	7,471	7,490	7,460	7,460	7,482	2,744	2,670	2,633	2,623	2,649
Newlands	1B	B.L. - Newlands Mine to Collinsville	4,727	4,820	4,828	4,838	4,834	7,471	7,490	7,460	7,460	7,482	2,744	2,670	2,633	2,623	2,649
GAPE	2A	B.L. - North Goonyella Junction to Newlands Junction	2,716	2,707	2,783	2,791	2,785	4,346	4,356	4,345	4,345	4,356	1,630	1,650	1,563	1,555	1,571
Goonyella	3	M.L. - Coppabella to Jilalan	13,261	13,187	13,190	13,170	13,089	13,914	14,069	13,972	14,001	14,053	653	882	782	831	964
Goonyella	3A	B.L. - Jilalan to Port of Hay Point	13,203	13,187	13,190	13,170	13,089	13,854	14,069	13,972	14,001	14,053	651	882	782	831	964
Goonyella	3B	B.L. - Hail Creek Mine to South Walker Creek Junction	1,566	1,564	1,555	1,584	1,589	1,480	1,452	1,436	1,460	1,476	-	-	-	-	-
Goonyella	3C	B.L. - Oaky Creek Junction to Coppabella	7,537	7,508	7,611	7,667	7,509	8,848	8,867	8,885	8,961	8,820	1,311	1,360	1,274	1,295	1,312
Goonyella	3D	B.L. - Coppabella to Wotonga	7,428	7,380	7,368	7,201	7,247	8,445	8,622	8,510	8,359	8,521	1,017	1,242	1,142	1,159	1,275
Goonyella	3E	B.L. - North Goonyella Mine to Wotonga	5,290	5,476	5,365	5,143	5,384	6,505	6,813	6,590	6,355	6,679	1,215	1,338	1,226	1,212	1,296
Goonyella	3F	B.L. - Blair Athol Mine to Wotonga	2,953	2,789	3,009	3,053	2,878	3,432	3,434	3,709	3,769	3,612	479	646	700	717	734
Blackwater	4	M.L. - Bluff to Callemondah	10,104	10,132	10,126	10,105	10,125	10,385	10,357	10,243	10,128	10,130	281	226	117	23	6
Blackwater	4A	B.L. - Callemondah to Port of Gladstone	11,972	12,004	11,991	11,971	11,992	12,348	12,325	12,206	12,091	12,098	376	321	215	120	106
Blackwater	4B	B.L. - Burngrove to Bluff	10,104	10,132	10,126	10,105	10,125	10,385	10,357	10,243	10,128	10,130	281	226	117	23	6
Blackwater	4C	B.L. - Rolleston Mine to Rangal	4,115	4,072	4,059	4,096	4,119	4,237	4,193	4,122	4,115	4,128	122	121	63	20	10
Blackwater	4D	B.L. - Oaky Creek Junction to Burngrove	3,230	3,278	3,244	3,161	3,144	3,374	3,334	3,258	3,150	3,132	144	56	15	-	-
Moura	5	M.L. - Dumgree to Callemondah	2,305	2,311	2,302	2,303	2,306	2,328	2,334	2,328	2,328	2,334	23	24	26	25	29
Moura	5A	B.L. - Earlsfield to Dumgree	2,305	2,311	2,302	2,303	2,306	2,328	2,334	2,328	2,328	2,334	23	24	26	25	29
Moura	5C	B.L. - Earlsfield to Moura	1,197	1,199	1,195	1,196	1,196	1,222	1,224	1,222	1,222	1,224	25	26	28	26	29

COAL NETWORK CAPACITY CO.

Table F2: Aggregated DNC, Committed Capacity and ECD per mainline / branch line per year (Tonnes)

Coal System		Mainline / Branch Line	DNC (Tonnes)					Committed Capacity (Tonnes)					ECD (Tonnes)				
			FY23	FY24	FY25	FY26	FY27	FY23	FY24	FY25	FY26	FY27	FY23	FY24	FY25	FY26	FY27
Newlands	1	M.L. - Collinsville to Pring	31.6	32.3	32.4	32.5	32.4	50.0	50.2	50.0	50.1	50.2	18.3	17.9	17.7	17.6	17.8
Newlands	1A	B.L. - Pring to Abbot Point	31.6	32.3	32.4	32.5	32.4	50.0	50.2	50.0	50.1	50.2	18.3	17.9	17.7	17.6	17.8
Newlands	1B	B.L. - Newlands Mine to Collinsville	31.6	32.3	32.4	32.5	32.4	50.0	50.2	50.0	50.1	50.2	18.3	17.9	17.7	17.6	17.8
GAPE	2A	B.L. - North Goonyella Junction to Newlands Junction	18.1	18.1	18.5	18.6	18.5	29.0	29.1	28.9	28.9	29.0	10.9	11.0	10.4	10.3	10.5
Goonyella	3	M.L. - Coppabella to Jilalan	133.8	133.1	133.0	132.9	132.2	140.4	142.0	140.8	141.2	141.9	6.6	8.9	7.9	8.4	9.7
Goonyella	3A	B.L. - Jilalan to Port of Hay Point	133.3	133.1	133.0	132.9	132.2	139.9	142.0	140.8	141.2	141.9	6.6	8.9	7.9	8.4	9.7
Goonyella	3B	B.L. - Hail Creek Mine to South Walker Creek Junction	15.7	15.8	15.7	16.0	16.0	14.8	14.7	14.5	14.7	14.9	-	-	-	-	-
Goonyella	3C	B.L. - Oaky Creek Junction to Coppabella	69.7	69.4	70.2	70.9	69.4	80.3	80.4	80.5	81.5	80.1	10.5	11.0	10.3	10.6	10.7
Goonyella	3D	B.L. - Coppabella to Wotonga	70.8	70.3	69.9	68.3	68.8	78.5	80.3	79.0	77.5	79.2	7.7	10.0	9.1	9.3	10.4
Goonyella	3E	B.L. - North Goonyella Mine to Wotonga	46.2	48.1	46.6	44.4	46.9	54.2	57.2	54.9	52.6	55.8	8.0	9.2	8.3	8.1	8.9
Goonyella	3F	B.L. - Blair Athol Mine to Wotonga	28.2	26.3	28.1	28.5	26.8	32.1	31.6	33.7	34.3	32.8	3.9	5.3	5.7	5.8	6.0
Blackwater	4	M.L. - Bluff to Callemondah	83.3	83.6	83.6	83.4	83.5	85.6	85.5	84.6	83.6	83.5	2.3	1.9	1.0	0.2	0.0
Blackwater	4A	B.L. - Callemondah to Port of Gladstone	99.0	99.4	99.3	99.1	99.2	102.1	102.0	101.1	100.0	100.0	3.1	2.7	1.8	1.0	0.9
Blackwater	4B	B.L. - Burngrove to Bluff	83.3	83.6	83.6	83.4	83.5	85.6	85.5	84.6	83.6	83.5	2.3	1.9	1.0	0.2	0.0
Blackwater	4C	B.L. - Rolleston Mine to Rangal	33.9	33.6	33.5	33.8	34.0	34.9	34.6	34.0	33.9	34.0	1.0	1.0	0.5	0.2	0.1
Blackwater	4D	B.L. - Oaky Creek Junction to Burngrove	26.8	27.1	26.8	26.1	25.9	28.0	27.6	26.9	26.0	25.8	1.3	0.5	0.1	-	-
Moura	5	M.L. - Dumgree to Callemondah	19.3	19.4	19.3	19.3	19.3	19.5	19.6	19.5	19.5	19.6	0.2	0.2	0.2	0.2	0.2
Moura	5A	B.L. - Earlsfield to Dumgree	19.3	19.4	19.3	19.3	19.3	19.5	19.6	19.5	19.5	19.6	0.2	0.2	0.2	0.2	0.2
Moura	5C	B.L. - Earlsfield to Moura	10.0	10.0	10.0	10.0	10.0	10.2	10.3	10.2	10.2	10.3	0.2	0.2	0.2	0.2	0.2