Dalrymple Bay Infrastructure

Dalrymple Bay Infrastructure Management

Master Plan 2023

Expansion Opportunities at Dalrymple Bay Terminal

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1 Executive Summary

Since commissioning the last expansion of DBT to 85 Mtpa in 2009 annual throughput has fluctuated between 50 and 70 Mt, indicating a significant variance between contracted capacity of 84.2 Mtpa and actual throughput. Since late 2016, as a result of strong global crude steel production and other factors, the sustained high pricing for metallurgical coal has resulted in the growth of DBT's Access Queue to over 33 Mtpa (peak demand).

This Master Plan builds on previous Master Plans to outline a sustainable and incremental expansion pathway for DBT, consistent with government policy relating to development along the Queensland coastline while recognising the regulatory and other hurdles that need to be cleared prior to commencing any development works.

DBT Background (Chapter 2)

Chapter 2 reviews the involvement of Dalrymple Bay Infrastructure Management Pty Ltd (**DBIM**) in the terminal and describes the facility in terms of land use and geographical location, including a brief history of the terminal and the progression to DBT's current configuration. Various elements of DBT's operations are discussed, including a description of the major plant, machinery and infrastructure that comprise the terminal. The region encompassing the terminal and the land leases that make up the terminal footprint are also outlined.

The chapter also deals with the Master Planning process and DBIM's alignment with the Dalrymple Bay Coal Chain (**DBCC**) Master Planning function of the Integrated Logistics Company Pty Ltd (**ILC**). The regulatory framework is outlined in detail in this chapter, as is the current contractual position of the terminal.

Further, Chapter 2 briefly summarises the Access Regime in place for DBT and highlights recent changes to the Access Undertaking which influence expansion activities.

Current Operations (Chapter 3)

This chapter provides an overview of the current operations of DBT, including cargo assembly and hybrid stockpiling, an overview of the remnant zone, the impact of service provision and a summary of the independent capacity modelling results.

Future Supply and Demand (Chapter 4)

This chapter assesses global demand and supply prospects relevant for the assessment of the need for further expansions at DBT.

DBIM expects increases in demand from India and South-East Asia to drive further growth for coal handled by DBT in the longer term.

Competing supply regions do pose a threat to DBT's demand, particularly coal production in Mongolia, Russia and Canada, however these are not expected to materially impact the long-term outlook for coal production in the Central Bowen Basin. DBIM does however expect the transition towards net zero to impact demand for coal globally in the medium and long term, with the impact on demand for thermal coal expected to be more significant than demand for metallurgical coal. Due to the high quality nature of Bowen Basin reserves and proximity to Asian markets, DBT is expected to provide a growing share of the seaborne traded metallurgical coal.[1] This in turn is expected to drive demand for expansion capacity at DBT in the short and medium term. While there is no way to reliably predict the timing of expansion execution, DBIM has developed this Master Plan with the intent of having a clear technical development pathway for potential future expansion, if required.

[1] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023

DBT Expansion Options (Chapter 5)

This chapter outlines the proposed expansion pathway for DBT.

As part of the 8X FEL 2 study, the recommended option was a 4-phase expansion of 14.9 Mtpa to a total of 99.1 Mtpa. DBIM received environmental approvals on that basis up to 99.1 Mtpa. During 2021 and 2022, having executed Standard Underwriting Agreements for Further Studies with five Access Seekers (**Expansion Parties**), DBIM undertook the technical part of a FEL 3 (feasibility) study for 8X, in order to increase the level of scope definition and certainty around cost and schedule. The FEL 3 study however identified the availability of a further increase in the system capacity of 3.2 Mtpa to a maximum of 102.3 Mtpa within the existing terminal footprint. This allowed DBIM to develop a more efficient and cost effective go-forward option, by reducing the scope of the 8X project to 3 phases in order to achieve the 99.1 Mtpa capacity required to satisfy the demand of the Expansion Parties and ensure that the 8X Project can proceed without substantial amendment to additional environmental approvals already secured. Economic assessments as part for the FEL 3 study are expected to continue through 2023.

The remaining 8X scope required to maximise system capacity within the existing terminal footprint to 102.3 Mtpa will not be contemplated in the initial development of 8X, but may be considered (as a further expansion) should further demand exist after completion of the 3-phase 8X Project to 99.1 Mtpa. Similarly, the 9X project remains a future expansion option beyond 8X should there ultimately be sufficient long-term demand.

Alignment with Sustainability Framework (Chapter 6)

Building on programs and initiatives already in place, DBT released a Sustainability Strategy in 2020, a joint publication of DBIM and Dalrymple Bay Coal Terminal Pty Ltd (**Operator**). The Strategy was developed to be consistent with the Ports Australia *Leading Practice Guidelines* and was based on the United Nations Sustainable Development Goals framework. This chapter outlines how the DBIM Master Plan aligns with the DBT Sustainability Strategy.

Environmental Values & Adaptive Management Approach (Chapter 7)

This chapter outlines identified critical environmental issues relevant to the expansion projects and regulatory approval requirements.

This Master Plan aligns with leading practice guidelines and policy set by the Australian and Queensland Governments by ensuring early consideration of environmental values for development along the coast adjacent to the Great Barrier Reef. Further, the intentional maintenance and enhancement of port environmental buffers through terminal planning and design will maintain port protection between the terminal and neighbouring areas.

The Master Plan demonstrates that the preferred 8X expansion pathway outlined in Chapter 5 is not expected to significantly impact the anticipated environmental outcomes for terminal operations, including existing Environmental Authorities.

Stakeholder Consultation (Chapter 8)

Chapter 8 details DBIM's interface with stakeholders in terms of current operations and future expansion of the terminal. DBIM’s participation in the local community groups is detailed together with DBIM’s overall engagement strategy. This chapter also includes details of the consultation process undertaken by DBIM while preparing Master Plan 2023.

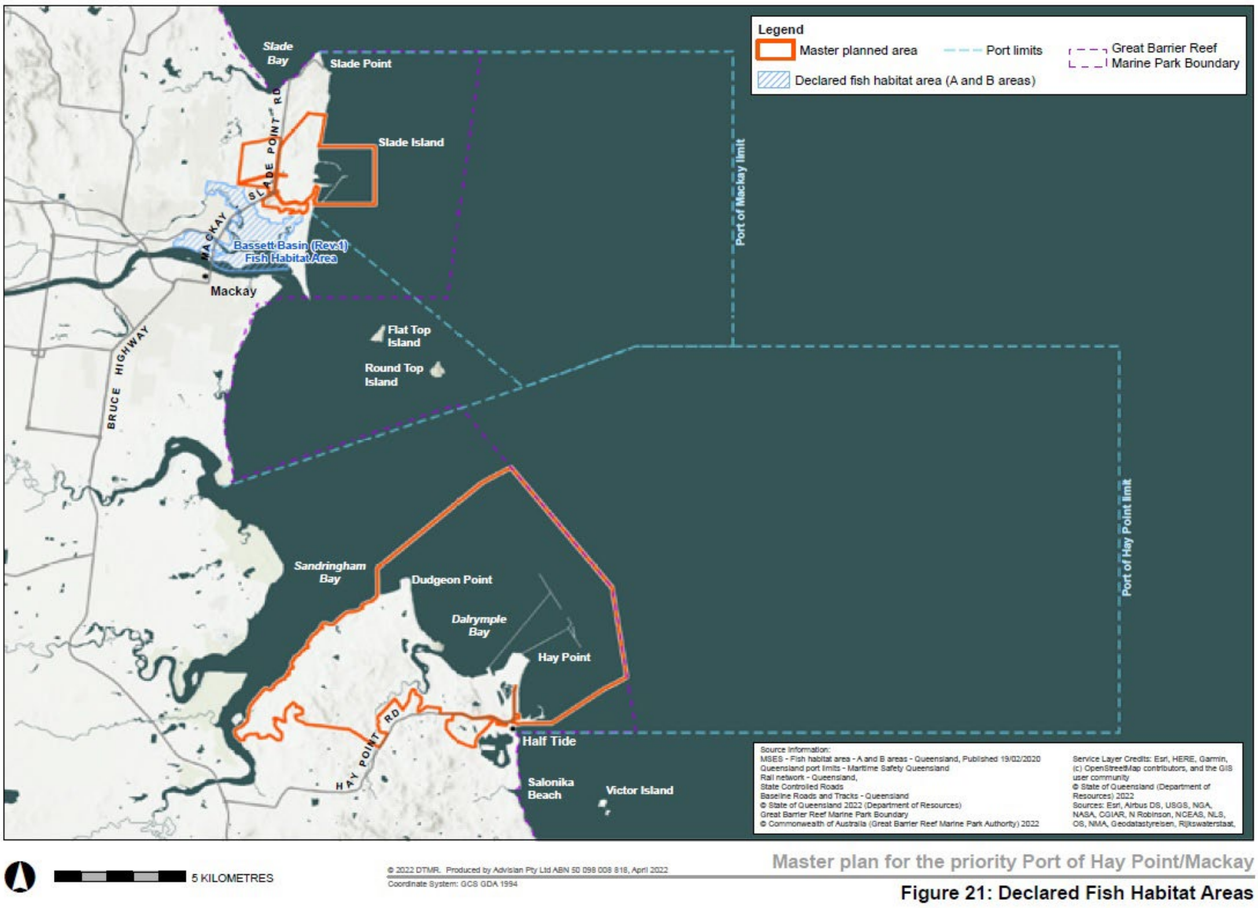
2 Introduction and Background

2.1 Background to DBT

DBT was established in 1983 by the Queensland Government as a common user coal export facility. In 2001, the Queensland Government, represented by Ports Corporation of Queensland (**PCQ,** now North Queensland Bulk Ports Corporation Ltd (**NQBP**)) and DBCT Holdings P/L, awarded a long-term lease of DBT (a 50-year term with a 49-year renewal option) to a consortium known as Coal Logistics–North Queensland (**CL-NQ**). Since a change of ownership in 2009 to Brookfield Infrastructure Partners (**BIP**), DBIM, a subsidiary of Dalrymple Bay Infrastructure Limited (**DBI**) has held management responsibility for DBT[2]. DBI was listed on the ASX in December 2020.

The Port of Hay Point is approximately 38 km south of Mackay and includes two coal terminals - DBT and Hay Point Coal Terminal (**HPCT**) (Figure 1).

Figure 1: Port of Hay Point Port Limits[3]

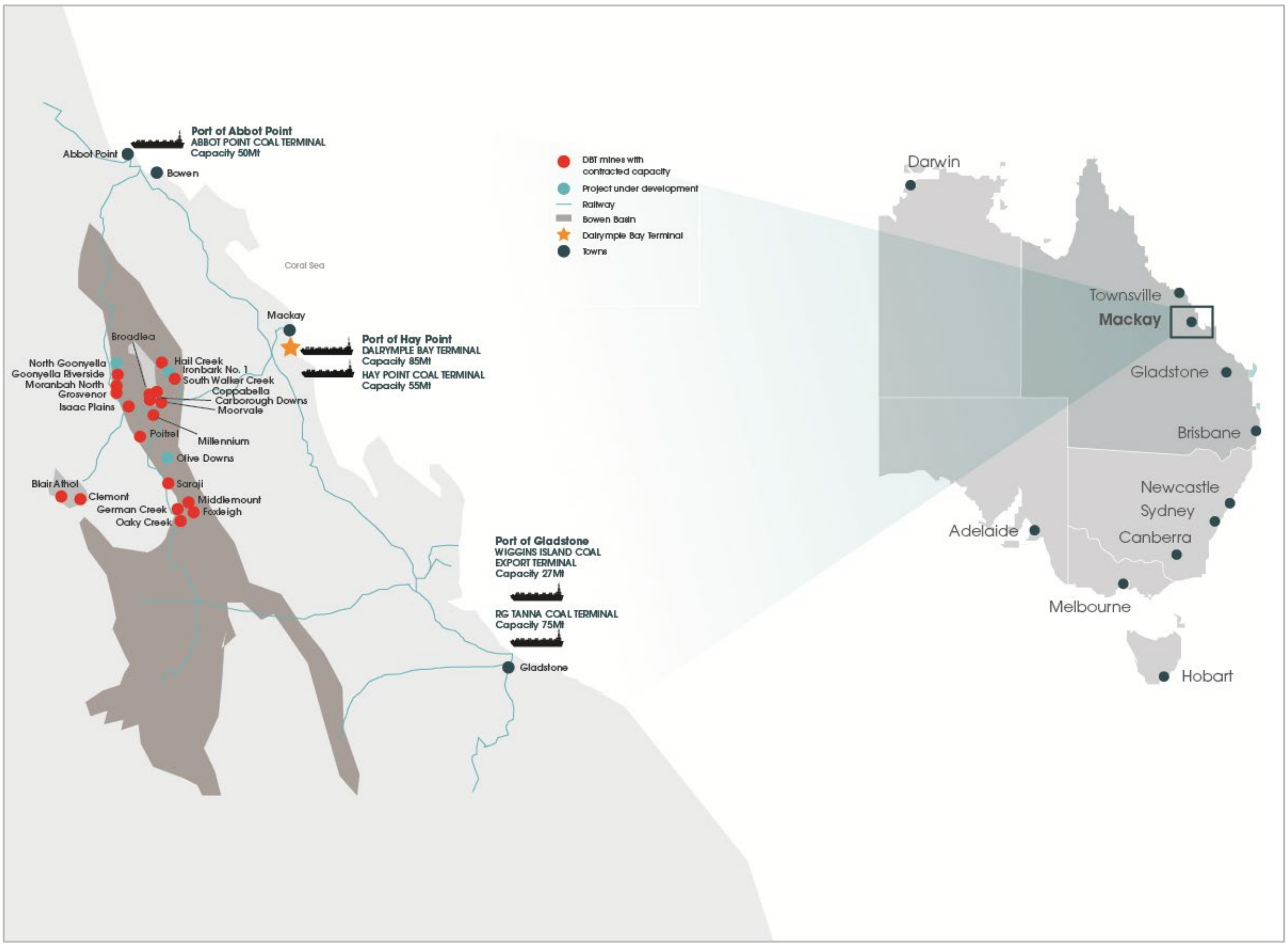


[2] The key DBT leases are held by Dalrymple Bay Investor Services Pty Ltd (atf the DBT Trust), a subsidiary of DBI and sub-leased to DBIM, which manages DBT.

[3] Refer Department of Transport and Main Roads Draft Master Plan for the Priority Port of Hay Point/Mackay 2022

The port is administered by NQBP which is the statutory Port Authority and strategic port land owner. The terminals are linked to the Central Bowen Basin coalfields (Figure 2) by the electrified Goonyella rail system operated by Aurizon Network.

Figure 2: DBT catchment – (DBI, 2022)



Dalrymple Bay Coal Terminal Pty Ltd (the **Operator** or **DBCT P/L**), which is owned by a majority of DBT's Access Holders (by contracted capacity), is appointed by DBIM to undertake the terminal operations and maintenance activities in accordance with the Operation and Maintenance Contract (**OMC**).

Additional information is available from DBI's website at dbinfrastructure.com.au and the Operator's website at dbct.com.au.

DBIM and the Operator jointly released the inaugural terminal Sustainability Strategy in 2020 which is available on the websites of both entities. The alignment of this Master Plan with the Sustainability Strategy is covered in more detail in Chapter 6.

The land use surrounding the port is a mix of agricultural, rural residential, and urban. The residential communities neighbouring DBT and HPCT (Figure 3) are Louisa Creek, Half Tide, Timberlands, the Droughtmaster Drive area and Salonika Beach. Responsible and ongoing interaction with these communities is an important element of DBIM's master planning and development process.

Figure 3: Position of DBT relative to the local area

2.2 Current Asset Description

2.2.1 Basic Configuration

DBT's basic configuration can be described as 3 rail receiving stations, a stockyard and 4 offshore berths, all connected by a series of conveyor systems. DBT is situated on approximately 214 hectares of strategic port land and 160 hectares of offshore sea-bed lease, primarily described by the following lots:

- Lot 126 on SP123776
- Lot 130 on SP105841
- Lot 131 on SP136318
- Lot 133 on SP136320 + Lot 133 SP256544
- Lot 134 on SP185573
- Lot 135 on SP185580
- Lot 41/42 on SP136319
- Lot 43 on SP185559
- Lot Part of 132 on SP136318 (Lease C on SP185554 and Lease D on SP185555)

The site stretches for more than 2.38 km from the rail inloading stations to the land side end of the jetty, with the wharves a further 3.8 km offshore.

DBT is a common-user facility, handling a variety of coal types from twelve producers and 18 mines. DBT handles three commercial coal categories, including coking, Pulverised Coal Injection (**PCI**), and thermal. Coal types can be further blended from the DBT stockpiles to create many different products. The majority of exports through DBT are shipped on a Free on Board (**FOB**) basis. The customers of DBT's Users (i.e. the coal buyers) are responsible for organising and paying for sea transport. Coupled with the available stockyard capacity, the high number of products drives a cargo assembly and hybrid operating mode in the terminal.

DBT uses the following plant and equipment to deliver contracted capacity:

- 3 rail receival stations - 2 x 5,500 tph (IL1 & 2), 1 x 8,100 tph (IL3)
- 4 stackers - 1 x 5,500 tph, 1 x 6,000 tph, 2 x 8,100 tph
- 3 reclaimers – 1 x 4,250 tph, 2 x 5,300 tph
- 5 stacker-reclaimers - stack rates from 4,250 - 5,500 tph and reclaim rates from 3,700–5,300 tph
- 7.5 stockpile rows, each approximately 1,100 m in length (note that row 8 is a half row). Maximum designed yard storage volume is 2.3 Mt
- 3 outloading systems (OL1, OL2 & OL3) and 3 shiploaders –7,200 tph (SL1), 7,600 tph (SL2), and 8,650 tph (SL3)
- 4 berths capable of receiving cape size vessels
- SL1 serves Berths 1 & 2, SL2 serves Berths 1 & 2, and SL3 serves Berths 3 & 4
- OL1 serves SL1 & SL3, OL2 serves SL2 & SL3, and OL3 serves SL2 & SL3

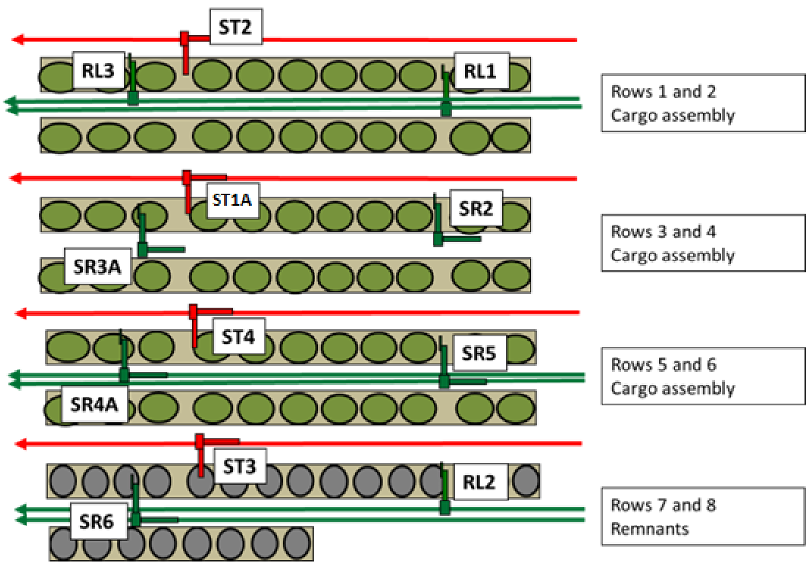
2.2.2 Inloading

DBT has three rail receival stations, feeding three inloading conveyor systems which deliver coal to the stockyard. The inloading stations can accept a number of different train configurations and wagon types from any of the four rail haulage operators (Pacific National, Aurizon National, BMA Rail and OneRail). The coal drops out of the wagons and into the rail receival pits for transfer via inloading conveyor to the stockyard. Coal from any of the inloading stations can be fed to any part of the stockyard. This configuration gives the Operator a high level of flexibility when planning the location of stockpiles in the stockyard.

2.2.3 Stockyard

The stockyard consists of eight machinery bunds which support 12 yard machines and 7½ stockpile rows. These rows are each divided into three cells containing stockpiles (separated by drainage pits). The 12 yard machines include four stackers, three reclaimers and five stacker-reclaimers laid out as per Figure 4.

Figure 4: Stockyard layout



The storage volume of each of the stockyard rows is shown in Table 1 below. The actual working capacity of the rows at any time will be determined by the number and size of the stockpiles in each row.

Table 1: Stockyard row volumes (m^3) – (Dalrymple Bay Terminal Pty Ltd, 2019)

Row	1	2	3	4	5	6	7	8	Total
Volume	288,782	272,545	290,352	331,663	311,016	385,990	301,221	185,165	2,366,734

The stockyard has de-linked inloading and outloading systems, meaning each arriving train can usually be stacked without interrupting or impeding vessel loading activities. The yard configuration and operating strategy maximises outloading performance by making two reclaiming machines available to each outloading system. Under normal operating circumstances, two reclaiming machines dig from two stockpiles simultaneously to complete one loading activity into the vessel. If the product is not a blend, both stockpiles will contain the same product.

Individual yard machine peak design rates are shown in Table 2 below.

Table 2: DBT yard machine peak design rates (tph) – (DBCT Pty Ltd, 2023)

Yard machine	ST1A	ST2	ST3	ST4	RL1	RL2	RL3	SR2	SR3A	SR4A	SR5	SR6
Stacking rate	5,500	6,000	8,100	8,100				4,250	5,500	5,500	5,500	5,500
Reclaim rate					5,300	5,300	4,250	3,700	5,300	5,300	4,500	4,300
Throughload rate						5,500	4,250	4,250	5,500	5,500	5,500	5,500

Operationally, the DBT stockyard is divided into four independent zones, which are usually paired with a single outloading system and generally operate under the following configuration:

Zone 1 includes the southern end of stockyard rows 3, 4, 5 and 6, and normally feeds the first outloading system. Zone 1 is shown in brown in Figure 5.

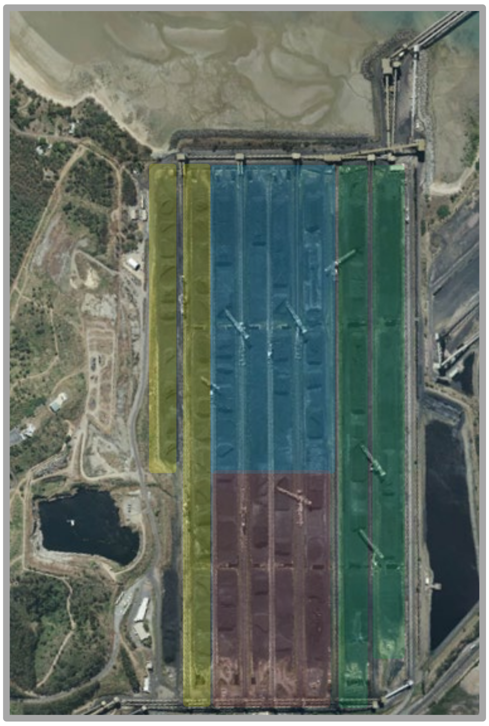
Zone 2 includes stockyard rows 1 and 2, and normally feeds the second outloading system. Zone 2 is shown in green in Figure 5 .

Zone 3 includes the northern end of stockyard rows 3, 4, 5 and 6, and normally feeds the high rate third outloading system. Zone 3 is shown in blue in Figure 5 .

Zone 4 includes row 7 and the half row 8 (shown in yellow in Figure 6). This zone contains only remnant stockpiles and can feed any of the outloading systems. The remnant zone and strategy is explained in further detail later in this Master Plan (Section 3.1.2).

Zones 1 to 3 are referred to as the dynamic zone, while Zone 4 is referred to as the static zone.

Figure 5: DBT zonal configuration



2.2.4 Outloading

Each of the outloading conveyor systems is normally paired with a rate-matched shiploader. In this configuration, the pair of reclaiming machines, the outloading conveyor system and the shiploader have matched rates to maximise individual machine utilisation.

From time to time (usually during maintenance outages), the outloading systems can be reconfigured to feed different shiploaders. Generally, the following outloading systems feed the corresponding shiploaders:

- Outloading system OL1 feeds coal to SL1.
- Outloading system OL2 feeds coal to SL2.
- The high-rate outloading system OL3 feeds coal to the high-rate SL3.

SL1 and SL2 are normally dedicated to Berths 1 & 2 respectively with SL3 loading coal into vessels on both Berths 3 & 4.

2.2.5 Water Management Infrastructure

The water management infrastructure on the site is shown in Figure 6 and includes the following:

- An Industrial Dam (**ID**) with a capacity of 421 ML, which receives all run-off from the stockyard catchment area. The ID contains a series of concrete pits and containment cells designed to detain and remove coal fines that settle out from the stormwater inflows. Coal fines are periodically recovered and shipped from the terminal. A dedicated system of High Flow Transfer Pumps is also located at the ID to transfer incoming stormwater inflows to the Quarry Dam via an 800 mm pipeline installed beneath the stockyard. The ID is maintained at a low level to maximise the available buffer storage, and to minimise the risk of an uncontrolled stormwater discharge to the local Sandfly Creek area.
- A Quarry Dam (**QD**) with a capacity of 837 ML, which receives the majority of its stored water as pumped flow from the ID, with only minor site run-off from the small catchment area local to the QD. The QD serves as the primary operational water storage dam at the terminal and has a floating pontoon pump system to transfer operational water to the site as required.
- A Rail Loop Dam (**RLD**) within the rail loop area that has a capacity 847 ML. It receives no run-off with the majority of its inflow via a gravity fed 800 mm pipeline from the QD when excess water is harvested

from the ID during periods of sustained heavy rainfall. Transfer pumps can also return water from the RLD through the same pipeline back to the QD in the dry season to support operations.

- A Rail Receival Dam (**RRD**) with a capacity of 22 ML, which stores and recycles the operational return water from the train unloading facilities and the local catchment.
- An additional dam known as Spindler's Dam, with a capacity of 59 ML, which receives runoff from the local catchment between the train unloading facilities and the stockyard that includes the three inloading conveyors. Water can be returned to the stockyard for reuse via a small diesel pump and pipeline system.
- A dedicated 2 ML industrial water storage tank and pump system located at the southern end of the stockyard provides a source of industrial and fire water to the entire site.
- A dedicated 1 ML industrial water storage tank and pump system located at the train unloading facilities to provide a source of moisture addition and dust suppression water to three unloading sheds.
- A flocculent plant located near the ID to treat stormwater inflows to the ID to further improve the coal fines sedimentation and recovery process.

Figure 6: Water Management Infrastructure

2.3 Contractual Framework

2.3.1 Requirement for a Master Plan

The Port Services Agreement (as that term is defined in the Access Undertaking) (the **PSA**) requires DBIM to submit a draft Master Plan to DBCT Holdings Pty Ltd, a wholly-owned Queensland Government entity, addressing any changes in circumstances, demand, technology or other relevant matters, no later than 31 March each year. In 2022, DBIM wrote to DBCT Holdings advising that there had been no changes in circumstances, demand, technology or other relevant matters since the approval of Master Plan 2021 and requested that DBCT Holdings accept the approved Master Plan 2021 as if it were lodged as a draft Master Plan 2022. DBCT Holdings accepted and approved Master Plan 2021 as having met the requirements for Master Plan 2022. Therefore, no separate Master Plan was prepared for 2022, however DBIM considers circumstances are sufficiently different to justify the issue of an updated Master Plan in 2023. This Master Plan has been drafted to:

- ensure that DBT is developed in accordance with Access Applications for terminal capacity, infrastructure planning best practice, principles of environmental sustainability, applicable laws and the balanced interests of its stakeholders;
- satisfy the PSA requirement for any expansion to be both economic and reasonable;
- ensure the responsible alignment of supply chain infrastructure;
- ensure compliance with contractual commitments and statutory obligations for master planning that meet the requirements of the PSA;
- ensure a continued leading practice approach to port/terminal planning within the Great Barrier Reef World Heritage Area (**GBRWHA**).

2.3.2 DBCC Master Planning

The ILC maintains an integrated System Master Plan and a dynamic simulation model for the DBCC, encompassing all mines in the Goonyella and Newlands Systems, in addition to:

- The below rail infrastructure and operating methods and principles.
- DBT infrastructure and operating methods.
- HPCT infrastructure and operating methods (modelled as a confidential black box)
- North Queensland Export Terminal (**NQXT**) infrastructure and operating methods
- Port channel and vessel movement practices.

To prevent misalignment of infrastructure development, ILC capacity assessments seek to align future supply chain expansions across all infrastructure and service providers through:

- the development of a common set of inputs and assumptions for the determination of system capacity
- the development and maintenance of an integrated full system simulation model, which is used as a tool to assess system capacity and evaluate future capacity requirements, and align and assess alternative infrastructure expansion options in the Dalrymple Bay Coal Chain (**DBCC**)

The development and implementation of the ILC System Master Plan and dynamic system model was part of a longer-term solution to improve the performance of the DBCC.

To ensure planning alignment within the DBCC, DBIM uses the ILC System Capacity Model for its capacity planning purposes. DBIM has engaged the ILC Master Planning group to model the existing system, in addition to various expansion scenarios to quantify capacity benefits, and throughput losses during implementation. The modelling results have guided the development of this Master Plan.

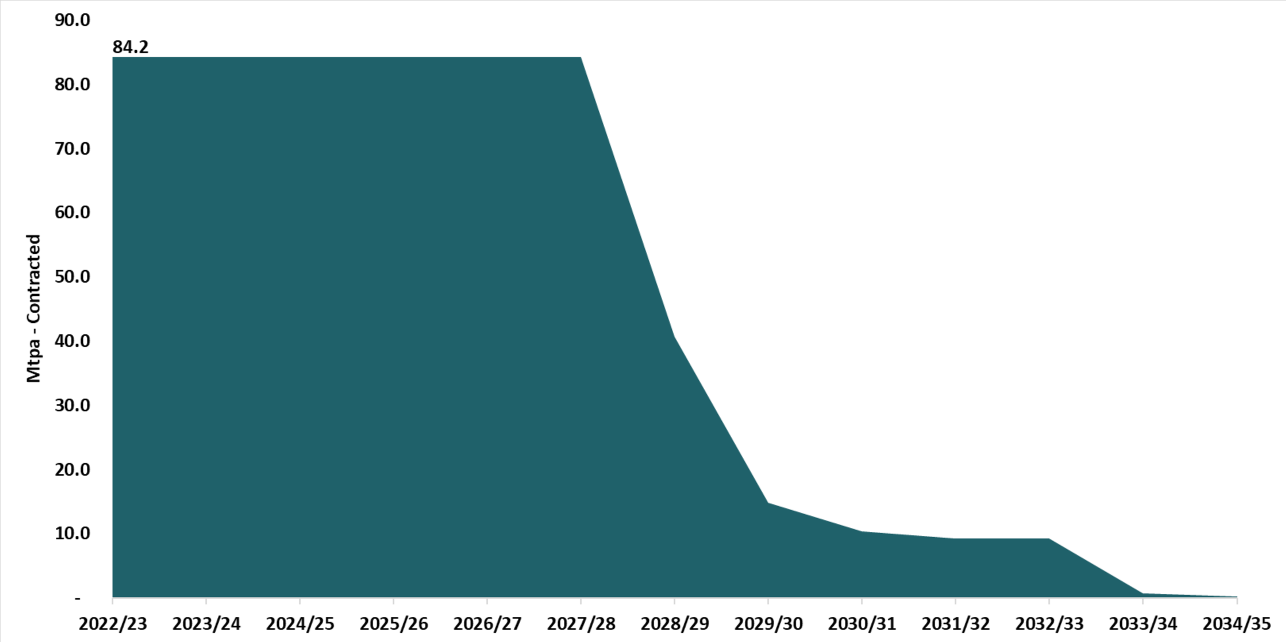
The ILC modelling established the current system capacity prior to any expansion of the terminal as 84.2 Mtpa.

2.3.3 Contractual Position

Access to DBT is contracted generally in accordance with the Standard Access Agreement (**SAA**), which forms a part of the AU. The SAA underpins negotiations between an Access Seeker and DBIM for contracting capacity at DBT. In order to secure the right to exercise evergreen five-year extension options, the Access Seeker is required to enter into an Access Agreement with an initial term of at least 10 years. Prior to 12 months of the end of the term, the Access Holder has an option to extend the term for 5 years or more. From time to time, Access Holders use the assignment mechanism in the Access Agreements to temporarily or permanently assign contract tonnage to other parties. DBT is currently fully contracted to 30 June 2028 with a the majority of contracts due to expire between 30 June 2028 and 30 June 2033, if not renewed prior. Consequently, there is insufficient existing capacity at DBT to satisfy the demand for access reflected in the Access Queue.

The contracted volumes, as at February 2023, are shown in Figure 7.

Figure 7: DBT Contract Profile - February 2023 (assuming no extensions)



2.4 Government Legislation

In July 2011, the UNESCO World Heritage Committee requested the Australian Government undertake a comprehensive strategic assessment of the GBRWHA and develop a long-term plan for sustainable development that will protect the region's Outstanding Universal Value. The assessment was completed by the Australian and Queensland Government and resulted in the development of the Reef 2050 Long Term Sustainability Plan (**Reef 2050 Plan**). The Reef 2050 Plan has been in place for several years. DBIM supports Reef 2050 Plan.

The Queensland Government has responsibility for protection of Queensland waters and is therefore committed to a number of Reef 2050 Plan initiatives relating to port development. In 2015 the Queensland Government introduced new legislation, the Sustainable Ports Development Act 2015 (**Ports Act**) which sets out the blueprint for port planning and management for certain ports in Queensland. The act aligns with the Australian and Queensland Government commitments under Reef 2050 Plan developed in response to recommendations of the UNESCO World Heritage Committee.

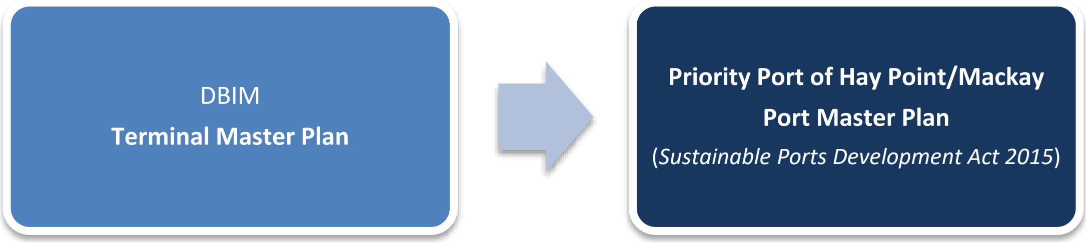
This Queensland legislation outlines a number of initiatives including:

- identification of the Port of Abbot Point, Port of Gladstone, Port of Hay Point/Mackay, and the Port of Townsville as Priority Ports which require formal Port Master Plans to regulate development, consistent with principles of ecologically sustainable development
- introduction of statutory Port Overlays to implement the master planning objectives
- protection of greenfield landside and marine areas through the prohibition of certain future development
- prohibition of certain capital dredging along the Queensland coastline, and
- prohibition of sea-based disposal of capital dredge material within the GBRWHA.

Port Master Plans are to be prepared for Priority Ports by the Department of Transport and Main Roads in consultation with port entities, relevant local governments and other state entities such as the Department of State Development, Infrastructure, Local Government and Planning, and the Department of Environment & Science.

DBIM views this Master Plan 2023 as a critical input (an informing document) for the Queensland Priority Port Master Planning process, as shown in Figure 8.

Figure 8: Port Master Planning Process



2.4.1 Proposals for Land Use and Site Development

Regulatory approvals will be required from Australian and Queensland Governments for the proposed expansion pathways.

All approvals have been secured for the 8X pathway.

No approvals have been sought for the 9X pathway. Given the nature of the 9X expansion pathway, assessment and approval requirements would need to be fully examined should this pathway be pursued.

Australian Government

To address Australian Government requirements, and in line with best practice governance in the Great Barrier Reef Coastal Zone, referral of the expansion pathways (up to and including the 8X project) under the Environment Protection & Biodiversity Conservation Act 1999 (**EPBC Act**) was undertaken in December 2020.

The Australian Department of Climate Change, Energy, the Environment and Water (**DCCEEW**) assessed technical information covering land use, ecology, air quality, acoustics (terrestrial and underwater/marine), infrastructure, vegetation and cultural heritage management. DCCEEW advised on 17 February 2021 that the 8X Project was deemed to be a Non-Controlled Action and as such, no approval under the EPBC Act would be required (ref: 2020/8860).

Queensland Government

NQBP is the Assessment Manager for development on Strategic Port Land on behalf of the Queensland Government. NQBP coordinated assessments under Queensland legislation relevant to the 8X pathway, under the following legislation:

- Transport Infrastructure Act 1994 (**TIA**) (i.e. Port Development Assessment)
- Coastal Protection and Management Act 1995 & Fisheries Act 1994 (ie. Coastal Zone, Tidal Works & Marine Plant matters – via the State Development Assessment Provisions and relevant State Codes)
- Environmental Protection Act 1994 (i.e. Environmental Authority matters)

All necessary Tier One approvals for the 8X pathway have been secured. Further details are provided in Section 7.2.

Figure 9 shows the current offshore and onshore areas defined as Strategic Port Land at the Port of Hay Point. Figure 10 shows DBT more specifically.

Figure 9: NQBP Strategic Port Land and Offshore Port Infrastructure Hay Point

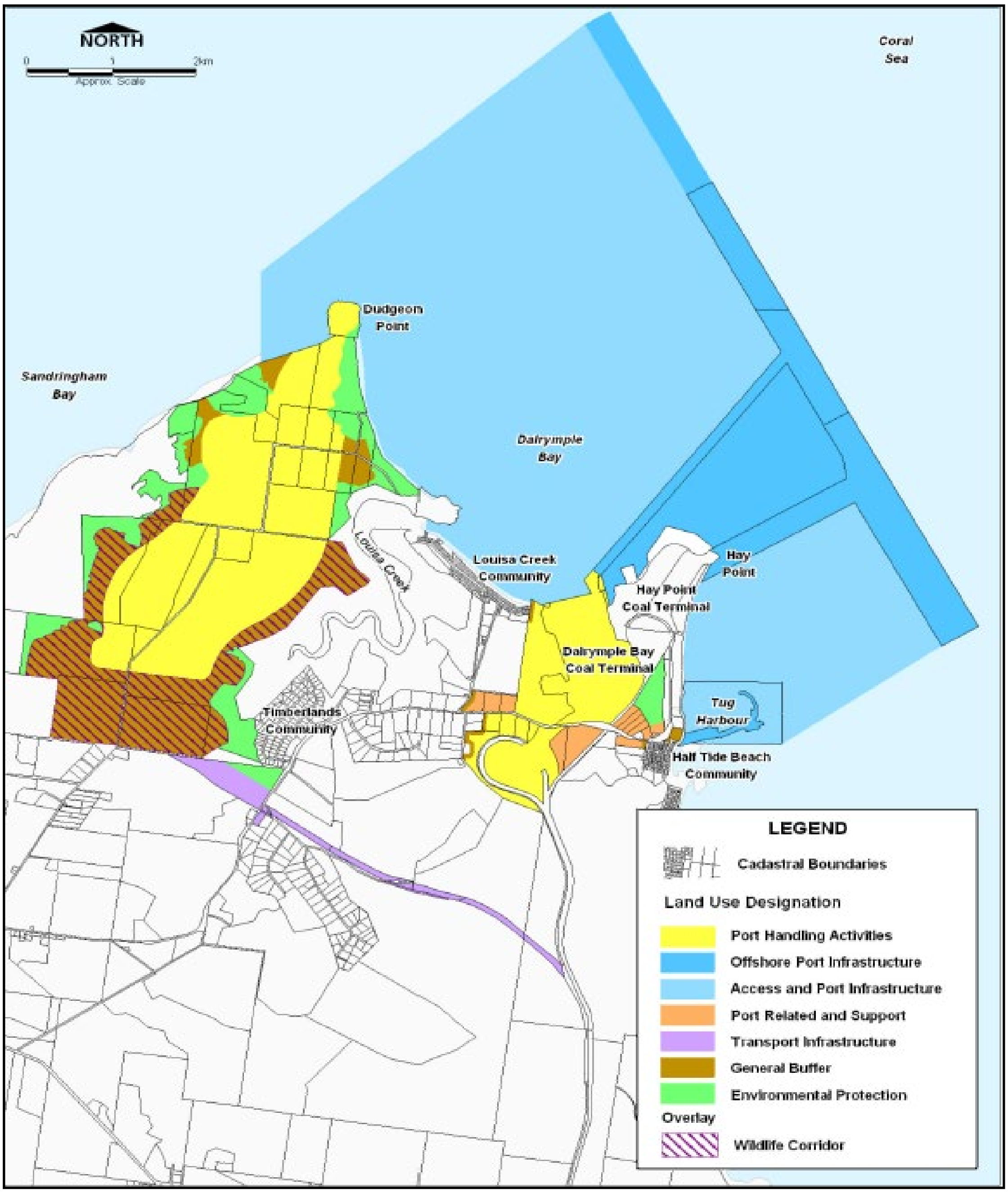
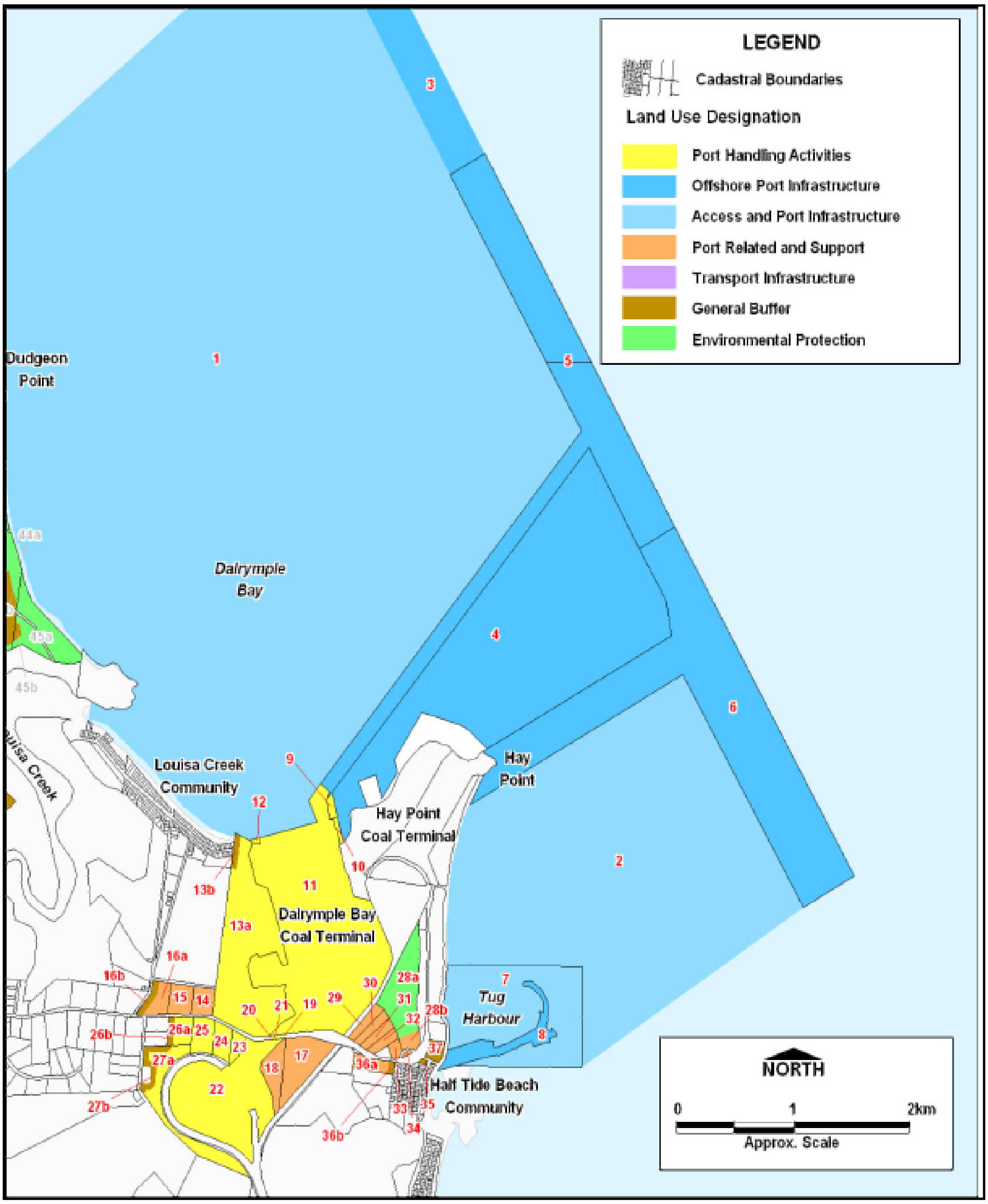


Figure 10: DBT development on Strategic Port Land



2.5 Access Regime

The coal handling service at DBT is declared for third party access under the Queensland Competition Authority Act 1997 (**QCA Act**). An Access Undertaking (**AU**) details the terms and conditions under which third parties can access DBT's services.

Commencing with the 2010 AU, Access Agreements have been restricted to available terminal capacity up to the system capacity[4] rather than standalone terminal capacity. In support of this principle, the terminal Master Plan is integrated with the ILC's System Master Plan, which is the framework for expansion of the System in the most efficient manner, determined collaboratively by all system participants.

2.5.1 Access Applications

Access Applications are the instrument for Access Seekers to inform DBIM of their current or future requirements for access to terminal capacity. An access queue is formed when available capacity is not sufficient to satisfy the capacity requirements of one or more Access Seekers. When capacity becomes available at the existing terminal, DBIM must offer the capacity to the DBT Access Queue (**access queue**). Available Capacity is offered to Access Seekers and contracted in accordance with Section 5.4 of the AU.

If an Access Seeker intends to contract available capacity, it is required to enter into an Access Agreement (**AA**) with DBIM. The Access Seeker will retain its position in the access queue, to the extent of the capacity requested in the access application that has not been satisfied and available system capacity is insufficient to service this remaining tonnage.

2.5.2 Expansion Ruling

The FEL 2 Study supported proceeding to a FEL 3 Study only if 8X was Socialised. Given that 8X was a Cost Sensitive Expansion – that is, the unit costs for existing users would increase if 8X was Socialised – then DBIM was required to apply for an Expansion Ruling.[5] Consequently in March 2021, DBIM applied to the QCA for an Expansion Ruling on 8X addressing all the relevant matters which supported DBIM's view that 8X should be Socialised. [6]

In November 2021, the QCA ruled that 8X should be Socialised, and as a result DBIM could continue with the FEL 3 Study in accordance with the AU, fully underwritten by the Expansion Parties.

2.5.3 Expansion Approval Process

Section 12.5 of the AU addresses the processes leading up to QCA acceptance of the need for the expansion. These processes form the basis of the QCA's assessment that the related capital expenditure has been prudently incurred and able to be recovered from users of the expanded terminal.

The key processes include:

- Finalisation of the FEL 3 Study economic assessments following completion of the FEL3 technical studies in Q1, 2023
- Completion of the FEL 3 Study Report in accordance with the definition in the AU.
- Submission of an application for an Expansion Ruling pursuant to s.12.5(c) of the AU, to confirm that the QCA's Expansion Ruling in November 2021 remains appropriate if the scope, cost and schedule of the expansion has changed.
- Submission of the Tender and Contract Management Process (TCMP) in accordance with s.12.5(i) of the

[4] System Capacity is the maximum reasonably achievable capacity of the system (measured in tonnes per financial year) as determined in accordance with the Access Undertaking, in respect of the components of the DBCC infrastructure relating to transport of coal from mines whose coal is handled by DBT

[5] DBIM applied for a Price Ruling in accordance with the provisions in the 2017 AU, however during the QCA's investigation, the 2021 AU came into effect, which no longer required the QCA to determine reference pricing for access to the terminal. Even so, the QCA's determination is consistent with the provisions for an Expansion Ruling in the 2021 AU, and consequently the term Expansion Ruling will be used in reference to DBIM's March 2021 application.

[6] Refer QCA website Application for price ruling—the 8X expansion

AU, which encompasses the principles of prudent expenditure.

- Engagement of the Independent External Auditor (IEA) in accordance with s.12.5(l) of the AU, to monitor compliance with the TCMP.
- Completion of the 60/60 Requirement in accordance with s.12.5(h) of the AU, to determine the need for the expansion.
- Submission of the Capacity Expansion Application in accordance with s.12.5(a) of the AU, required to support the QCA's acceptance of the expansion.

3 Current Operations

3.1 Mode of Operation

Bulk supply chains can be operated in a variety of configurations, however Australian coal terminals generally operate under one of three philosophies:

- cargo assembly
- dedicated stockpiling
- hybrid stockpiling

The selection of operating mode depends on the number of discrete coal products to be accommodated and the available space for stockpiling those coal products.

A dedicated stockpiling approach allows terminal users to stockpile large amounts of coal at the terminal, independent of:

- a vessel waiting within the port limits to load that product
- a vessel being in transit to the loading terminal

In a dedicated stockpiling terminal, the User will typically rail coal to the terminal when the coal is ready for railing from the mine site and a train is available to haul the coal to the terminal. The receiving vessel arrives at the port to load the coal from a dedicated stockpile, as do subsequent vessels chartered to load the same coal product. The railing system replenishes the dedicated stockpile by railing product regularly from the mine to the export terminal.

Because of the irregular demand pattern for an individual product and DBT’s available storage space in the stockyard, dedicated stockpiles cannot be maintained for all of DBT’s Users. DBT utilises a cargo assembly/hybrid approach to coal stockpiling. Unlike a dedicated stockpiling operation, a cargo assembly operation requires railing of products in accordance with the requirements of arriving vessels. In the DBT cargo assembly operation, a vessel typically provides its Notice of Readiness (NoR) to indicate it is ready in all respects to commence loading. Once all parcels to be loaded on the vessel are produced by the mine and made available for railing, the above-rail operators deliver the coal to rail receival at DBT, and the terminal operator conveys it to an allocated space in the terminal stockyard. Railings to complete the vessel’s cargo are subject to the availability and capability of the mine load-out, the ability of the rail system to deliver the coal to the terminal, and the ability of the terminal to unload and stockpile the coal.

Under cargo assembly, the stockpile for each individual vessel and each parcel on that vessel is separated from all other cargoes in the stockyard. This separation maintains the quality of all coal products delivered to the terminal. Due to the requirements for separation, the space between individual products cannot be utilised. To reduce stockpile separation and the resulting unutilised space in the stockyard, particularly when the same product is required for multiple vessels, the Operator is able to plan for limited hybrid stockpiling for high volume products.

3.1.1 Hybrid Stockpiling

Under the hybrid approach to stockpiling, the supply chain planners look at upcoming demand and identify opportunities where the same product is required for multiple near-spaced vessels. The planners would plan for similar coal for two or more vessels to be stacked into a single stockpile. Under cargo assembly, the planners would ordinarily plan to stack the cargoes for each vessel into distinct, separated stockpiles. Hybrid stockpiling minimises:

- the need for the stockpile separation between similar products for multiple vessels
- the amount of time the stockpile footprint is allocated but unutilised while the terminal waits for train deliveries to fill that allocated space
- the need for a remnant space for that product. If demand continues for long enough to justify the reallocation of the remnant space to the dynamic zone, a remnant may not be required for the hybrid product.

The hybrid stockpiling approach attempts to address the shortcomings of a pure cargo assembly operation and is intended to be used for at least two vessels, or a long succession of vessels. The lifespan of the hybrid stockpile is then only limited by the continuing, near-spaced shipping demand for that particular coal type.

3.1.2 Remnant Management

To assist in vessel loading requirements without compromising the efficiency of DBT, the stockyard has been segregated into two distinct zones. Row 7 and the half Row 8 are used for the exclusive purpose of managing remnant coal (the **static zone**). Each Access Holder is allocated a portion of the total volume of the remnant area, calculated in accordance with its share of Aggregate Annual Contract Tonnage. The remaining six rows of the stockyard operate in full cargo assembly or hybrid mode (the **dynamic zone**).

This vessel assembly strategy sees two cargo assembly or hybrid stockpiles allocated to each parcel in the dynamic zone (shown in Figure 5). The dynamic zone will ideally comprise one less than the total number of trains required to complete the parcel or cargo. Any remaining coal from the final train that is not required to complete a parcel or cargo will be stacked into the Access Holder’s remnant stockpile.

If the Access Holder has suitable coal in its allocated remnant area, the amount of coal railed should ideally be less than the required parcel or cargo. The balance of the parcel can then be topped up from the Access Holder's remnant stockpile.

Each Access Holder is responsible for managing the quantity and quality of remnant coal in its dedicated area, including separation requirements for different products.

3.2 Operations

3.2.1 Service Provision

System Capacity is calculated considering service provision requirements and the shipping mix. If future service requirements change from current demands, the rated capacity could also change.

DBT is required to meet varying service requirements in line with coal producer and coal end-user requests. Different coal types present different handling characteristics, requiring a variety of handling strategies to maintain coal quality. Reduction of normal equipment rates to cater for these individual products could degrade the capability of the supply chain.

3.2.2 Vessel Trends

DBT can load coal onto vessels ranging from 40,000 to 220,000 deadweight (**dwt**) in size. DBT is primarily exposed to four classes of vessels: Large Capesize, Capesize, Panamax and Handymax. Due to limited deballasting capability in small vessels, loading times are not proportionate to the size of the vessel (as demonstrated in Table 3) which outlines the comparative load rates of the 583 vessels loaded at DBT in the 2022 calendar year. The load rates clearly show faster loading performance into the larger vessels.

Table 3: DBT ship arrivals 1 Jan 2022 – 31 December 2022

Vessel Type	Size (dwt)	Average load rate (tph)	Average load time (hours)	% of total vessels
Large Capesize	140,000-220,000	5,213	25.70	32%
Capesize	100,000-140,000	4,878	16.84	7%
Panamax	65,000-100,000	4,666	16.01	56%
Handymax	40,000-65,000	3,516	13.34	5%

DBT’s outloading capability has been enhanced by an industry trend towards larger vessels. Larger and newer vessels offer economies of scale and efficiency advantages to the charterer, while generally offering better deballasting performance at the loading terminal.

DBT’s average vessel size surpassed 100,000 dwt in 2010 and has remained stable in subsequent years. Despite this recent trend towards larger vessels, the arriving vessel mix can change from month to month in response to freight rate volatility and the global availability of various vessel classes.

3.3 Contracted Capacity vs Throughput

The 7X Expansion was completed in 2009. That expansion produced a significant step up in the capacity of the terminal from 60 Mtpa to 85 Mtpa. Since then the terminal has had latent capacity, as various factors have combined to limit throughput to a peak of 71.5 Mt in any one year (FY2014-15). System Capacity constraints, fluctuating demand, significant weather events, government policy and conflicts have all played a part in reducing throughput to below the rated system capacity.

During an extended period of low coal prices (2012-2016), several existing Users relinquished excess capacity rather than maintain take-or-pay obligations. DBIM recontracted this capacity during 2017 and 2018 to Access Seekers who planned to increase coal production, either through greenfield or brownfield developments. Because this capacity was contracted to established miners and mine developers intending to increase coal production, it is anticipated that most of this recontracted capacity will be utilised by those Access Holders. Accordingly, DBIM expects the gap between contracted capacity and throughput to reduce, once these various developments are operating at full capacity.

3.4 Terminal vs System Capacity

DBIM contracts available terminal capacity with Access Seekers and Access Holders. Despite having a theoretical standalone terminal capacity of 96.3 Mtpa (ILC, 2023), in accordance with the AU, DBIM may only contract terminal capacity up to the practically achievable system capacity limit. Operating in its role as the Independent Expert in accordance with s.12.1 of the AU, the ILC's capacity assessment determined that the DBT supply chain has a long term, achievable system capacity of 84.2 Mtpa.

Standalone terminal capacity assessments will generally yield higher indicated throughput results than a system capacity assessment. A system capacity assessment necessarily introduces the constraining effects and the interface inefficiencies that result when the upstream facilities are connected to the terminal. Standalone terminal capacity assessments instead look at the terminal in isolation and do not impose any of the upstream inefficiencies required by a system capacity assessment. Terminal capacity assessments are based on theoretical levels of demand and an arrival sequence and frequency of trains that is impractical in real world operation.

Standalone terminal capacity may be increased following a terminal capacity expansion, however any terminal capacity in excess of system capacity is unable to be contracted. Accordingly, the assessed system capacity is far more relevant than the assessed terminal capacity for the purposes of developing a terminal Master Plan and contracting available capacity.

4 Supply and Demand Expectations

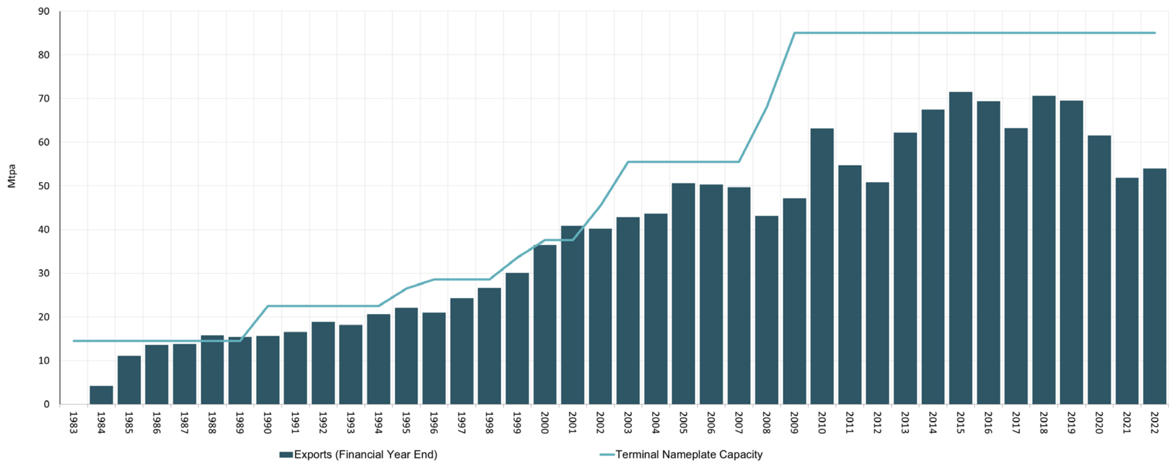
The PSA requires DBIM to:

- assess the current and future needs of users for services and facilities, and
- provide projections for the demand for services at DBT

4.1 Throughput Growth

DBT's highest recorded throughput in a financial year was 71.5 Mt in 2014-15. The gap between throughput and system capacity (84.2 Mtpa) has generally resulted from levels of demand and mine production which were below contracted capacity (refer Figure 11). In the past few years, demand has been impacted by COVID-related industrial shutdowns overseas, and an informal Chinese government ban on Australian coal imports, while throughput has been constrained by failures at mines, mine developments running late and a reported lack of labour availability preventing increased supply of Australian coal. While it is difficult to assess current mine capability, it is assumed that take-or-pay access agreements for rail and terminal capacity represent DBT Users' real expectations for future throughput.

Figure 11: DBT throughput and capacity growth history (DBIM, 2020)



In the depressed coal markets prior to 2017, and with costs clearly under focus, miners are understood to have reduced their exposure to any excess rail and terminal take-or-pay obligations. Since 2017, DBIM has recontracted approximately 15 Mtpa of previously relinquished long-term capacity and is now fully contracted at system capacity (84.2) until 2028. AME assesses that there are a number of promising coal prospects within the DBT catchment at various levels of approval and development maturity.

4.2 Metallurgical Coal History

DBT's predominant export product is metallurgical coal (PCI and coking), accounting for approximately 76% of total throughput in CY2022. DBIM's master planning is primarily focused on metallurgical coal demand and development, as this is the dominant resource within DBT's catchment area.

Metallurgical coal is primarily used for steelmaking, with integrated steel mills requiring between 0.7 and 0.9 tonnes of metallurgical coal to produce one tonne of steel. Following the imposition of the informal Chinese Government ban on Australian coal in November 2020 and the conflict in Ukraine, benchmark hard coking coals have been selling for well above US$250/t, and in 2022, the price peaked at US$560/t.

The HCC price history to 2007 is shown in Figure 12 below.

Figure 12: Spot FOB QLD hard coking coal price history (Platts CTI & IHS, AME 2007-2023)

4.3 Supply

The supply of metallurgical coal into the seaborne market is currently dominated by four countries. In 2022, Australia was estimated to have supplied 55% of global exports, US based producers supplied 12%, Canada supplied 8% and Russia supplied 18%. Queensland metallurgical coal producers have a natural geographical advantage over other metallurgical coal supplying regions. During the mid to late 2000s, in response to an expectation of continuing Chinese demand growth, global metallurgical coal production reached historically high levels through the introduction of new coal mines and expansions of existing coal mines. Australian producers exported approximately 1,778 Mt of coal in 2022[7].

At current coal prices, AME expects that most of the coal production in the Central Bowen Basin is profitable and that sustained healthy pricing will ultimately incentivise further mine development.

During the 2012-2016 downturn, many coal producers in North America were forced to idle coal mines or seek bankruptcy protection under Chapter 11 provisions. In response to a healthier coal market, a number of these operations have since resumed production and re-joined the export market. AME expects that US coal suppliers will continue to provide swing capacity to the global seaborne markets. [8]

Mozambican coal production has also faced delays and extra costs to repair, upgrade and build coal transport infrastructure. The country's most advanced and significant coal mine (Moatize) and accompanying infrastructure project (Nacala) in Mozambique is majority owned by Vale. Approximately 6 Mt of metallurgical coal was exported from Mozambique in 2022[9]. The Moatize mine project will export up to 18 Mtpa from Nacala Port at full capacity, utilising the Nacala Rail corridor for coal transportation. Given its proximity to India and Europe, Mozambique's coal production has the potential to displace some demand for Australian metallurgical coals to these regions. Exports are expected to increase to 13.8Mt by 2025. This recovery is expected to be led by Moatize mine where work has finished on a preparation plant upgrade and upgrades to the Nacala logistics corridor rail line and port. Production from Moatize is typically impacted by seasonal heavy rains, however AME expects the country's met coal supply to gradually increase to 16Mt by 2025 and 18Mt by 2040.[10]

In Mongolia, miners have faced issues with cash flow, profitability and more recently, border interruptions resulting from COVID-19. Coal miners in Mongolia exported approximately 25.5 Mt of metallurgical coal in 2022. Because the country is landlocked, coal mines in Mongolia are expected to deliver all coal exports to China and not displace Australian seaborne export volumes. AME is expecting metallurgical coal producers in Mongolia to be exporting 31.5 Mtpa of metallurgical coal in 2040.

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[7] Office of the Chief Economist Resources and Energy Quarterly – March 2023
[8] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023
[9] Office of the Chief Economist Resources and Energy Quarterly – March 2023
[10] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023

With metallurgical coal prices sustained above US$200/t since July 2021[11],DBIM has observed an increase in demand for terminal capacity from developers of new and existing coal mines. This increased demand indicates that miners are working to bring new greenfield and brownfield metallurgical coal mine developments on line in the metallurgical coal rich Central Bowen Basin.[12] With the advantages of high-quality metallurgical coal, well-developed infrastructure and proximity to Asian import destinations, Queensland miners are expected to maintain a substantial advantage over their global competitors.[13] Recent demand trends from DBT's major coal import regions are shown in Figure 14.

4.3.1 Domestic production growth in India

While India has abundant coal reserves and some of the lowest mining cash costs in the world, the coal reserves are generally a significant distance from end users. Indian metallurgical coal also tends to be of lower quality and contains more impurities than Australian coals.

Steelmakers in India are estimated to have imported 67 Mt of metallurgical coal in 2022. India's future seaborne metallurgical coal demand will be largely dependent on its ability to increase its domestic steel production capacity from an estimated 118 Mt in 2022 to 300 Mtpa by 2030.[14] With limited domestic reserves of metallurgical coal, domestic suppliers in India are not expected to keep pace with India's ambitious steel production growth plans. Accordingly, AME expects that India is likely to need to supplement its domestic metallurgical coal production with greater seaborne metallurgical coal or raw steel imports. AME expects Indian steel producers to import up to 232 Mtpa of metallurgical coal by 2040. [15]

4.3.2 Domestic production in China

Domestic miners in China accounted for 707 Mt of metallurgical coal production in 2021. In November 2020, the Chinese government implemented an informal ban on all coal imports from Australia. To make up for the loss of Australian coal supply, coal producers in China were asked to increase production from domestic mines. Chinese producers are understood to have increased coal production capacity from new upgraded operations and open-pit mines that had previously been shut (AME) (Figure 17).

The Chinese government reportedly lifted the ban on Australian coal imports in early 2023. A number of shipments left DBT, carrying coal to China in February 2023, indicating that reports of the relaxation of the ban were credible.

4.3.3 ESG risks to metallurgical coal

It is DBIM's expectation that mine expansions and new developments will continue to face headwinds relating to anti-coal sentiment, net zero ambitions and carbon neutral targets and legislative changes which are expected to impact the ability of miners to obtain approvals, financing and insurance on reasonable terms. DBI does however expect that with no current commercially viable substitutes for producing steel, the world will continue to need metallurgical coal. Based on Wood Mackenzie's demand forecasts,[16] DBI expects to be generating material revenues from the continuation of the coal handling service at DBT beyond 2050 under all climate change scenarios.

4.4 Demand

Global crude steel production grew from 1,564 Mt in 2012 to 2,008 Mt in 2022[17.] AME expects total metallurgical coal demand from Japan and South Korea to remain stable over the longer term, while European metallurgical coal demand is expected to fall as a result of government ESG policy pushing steelmakers to more rapidly adopt green steel production methods. AME expects that India's infrastructure build program will continue to drive strong demand for seaborne metallurgical coal imports. Over the long term, AME expects the supply of coal from DBT to Indian metallurgical coal importers to increase, however,

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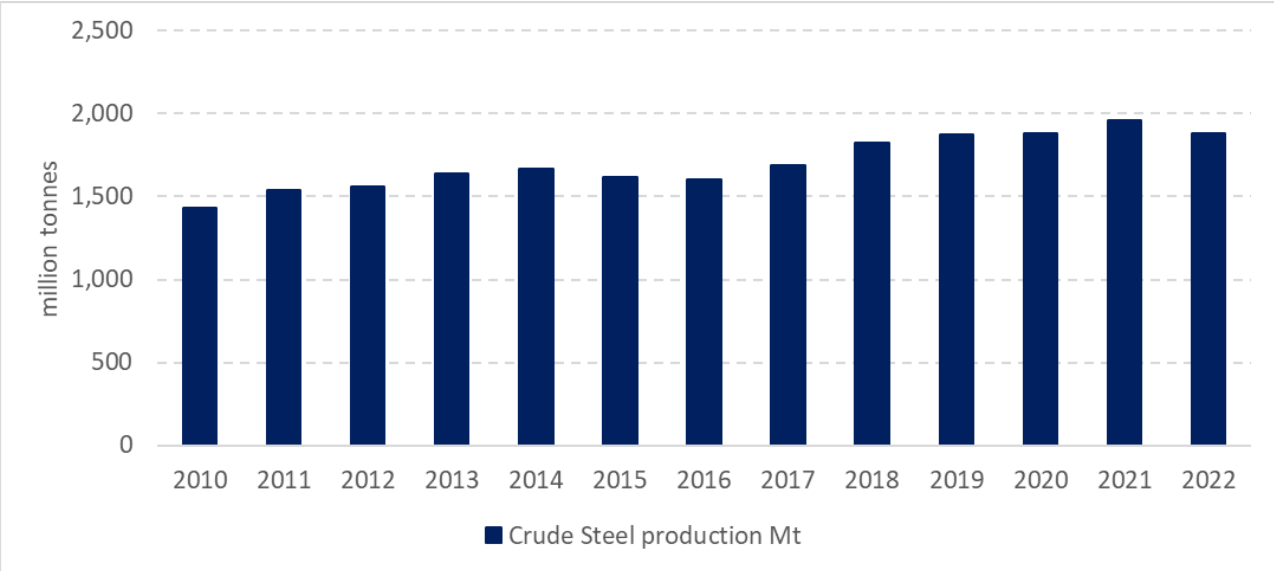
[11] IHS Inside Coal – Australian prime hard coking coal (2015-2020)
[12] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023
[13] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023
[14] Office of the Chief Economist Resources and Energy Quarterly – March 2023 pp. 31
[15] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023
[16] Refer to Important Notes section
[17] World Steel Association Total production of crude steel 2022

since the start of the conflict in Ukraine, it has been widely reported that high volumes of discounted Russian metallurgical coal are being supplied to Indian steelmakers.[18]

Despite apparent Chinese government ambitions to increase domestic coal production, AME expects China's dependence on seaborne coal to continue to drive healthy demand for global seaborne coal exports. Chinese import patterns have been similarly impacted by the conflict in Ukraine, with plentiful shipments of cheap Russian metallurgical coal reportedly making their way to Chinese buyers.[19]

AME is also forecasting rapid growth in South-East Asia (particularly Vietnam) of crude steel production and metallurgical coal demand. The South East Asia region is expected to undergo significant development in coming decades, combined with significant new blast furnace builds, the region is likely to be a driver of seaborne metallurgical coal imports. AME is expecting South-East Asia imports of metallurgical coal to grow from an estimated 10.8 Mt in 2022, to 35.4 Mt in 2040.

Figure 13: World crude steel production – World Steel Association, 2023



The comparatively mature economies of Japan, South Korea and Europe have well-developed steelmaking capacity, but do not have substantial domestic metallurgical coal reserves. These economies experienced growth in their steelmaking industries well before the recent rise of China and India as steelmaking leaders. South Korea and Japan experienced similar rapid growth in the early development phases of their economies but have stabilised at approximately 70 Mtpa and 92 Mtpa of crude steel production respectively. Chinese steel production and coal demand grew rapidly in previous decades, but the pace of growth is expected to ultimately moderate and stabilise as the Chinese economy matures. With India planning for rapid development in infrastructure, it is setting ambitious targets for domestic steel production (300 Mtpa by 2030). With most of this steel production capacity expected to be produced using traditional blast furnaces, India's economy is expected to require significant annual quantities of metallurgical coal.

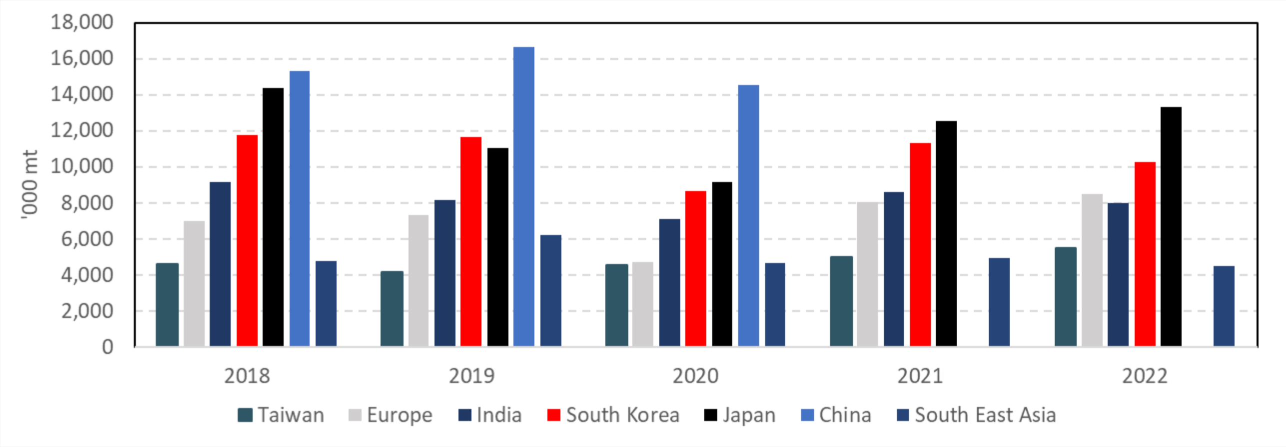
4.4.1 Green Steel

Other factors such as increased usage of recycled steel, or technologies that replace traditional metallurgical coal and iron ore production processes, such as POSCO's FINEX technology, or hydrogen-based green steel initiatives may pose a risk to long term metallurgical coal demand. Aside from steel produced with an electric arc furnace (**EAF**), these technologies are relatively immature and are expected to take significant time to reach a scale that is commercial and capable of displacing significant levels of demand for seaborne metallurgical coal in the long to medium term. AME expects that European steel producers are likely to be the earliest large scale adopters of green steel production, guided by government policy that facilitates the

[18] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023
[19] AME Mineral Economics Report for DBIM – Catchment Area Analysis and Industry Report – 27 February 2023

replacement of blast furnace technology with green steel production technology as blast furnaces reach their end of life.

Figure 14: DBT historical exports to key importing regions (DBIM, 2023)

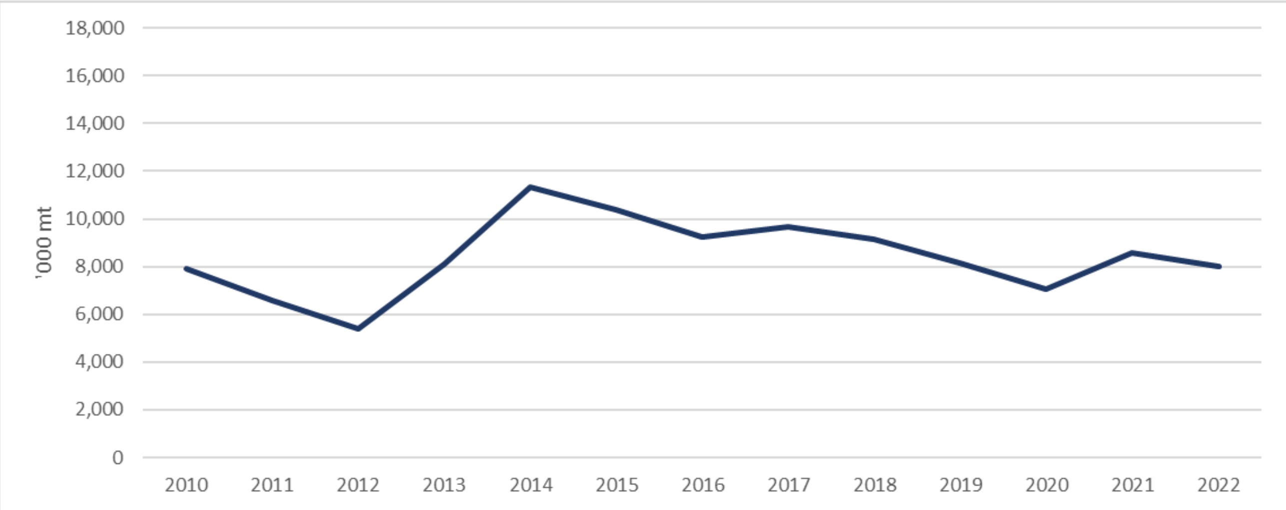


4.4.2 India

India's ambitions to increase domestic crude steel production from 122 Mtpa in 2022 to 300 Mtpa in 2030 is the most likely driver of seaborne metallurgical coal demand growth in the coming decade. India increased steel production by 2% in 2022.[20] A number of steelmakers in India are currently undertaking steel production expansion projects, however, to reach the stated 300 Mtpa of crude steel production target by 2030, the pace of new capacity development will need to increase.

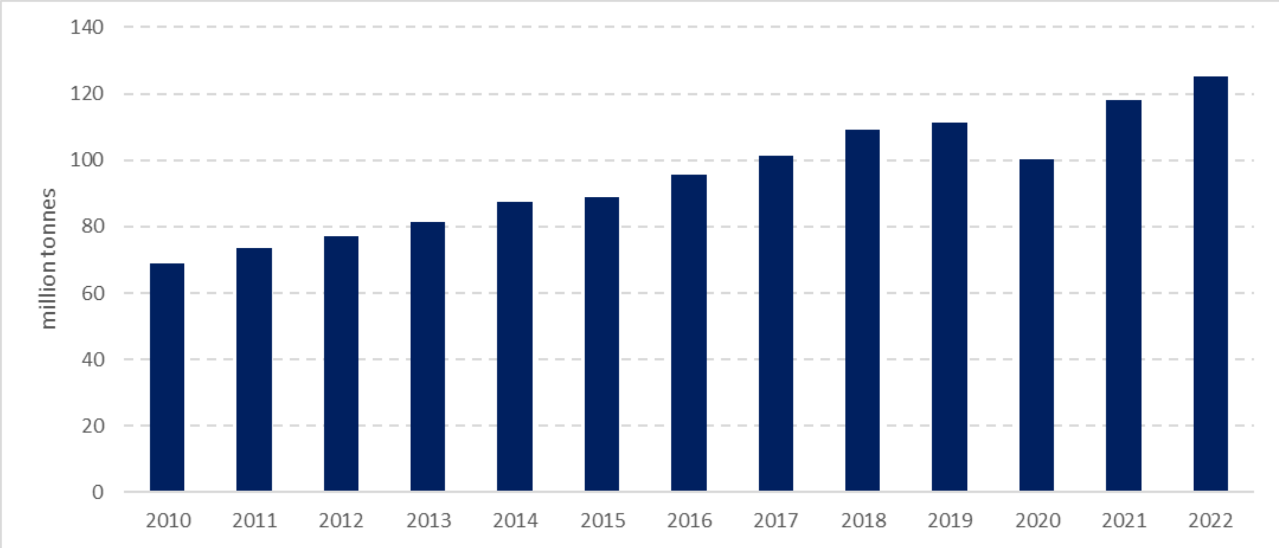
With supply channels to India already well established between coal producers and various customers in India, DBT Access Holders and Access Seekers are well positioned to satisfy some of this coal demand growth. India has become an important destination for coal exported from DBT over a long period of time (Figure 15).

Figure 15: Exports to India from DBT (DBI, 2023)



[20] World Steel Association Total production of crude steel 2022

Figure 16: India crude steel production (World Steel Association, 2023)

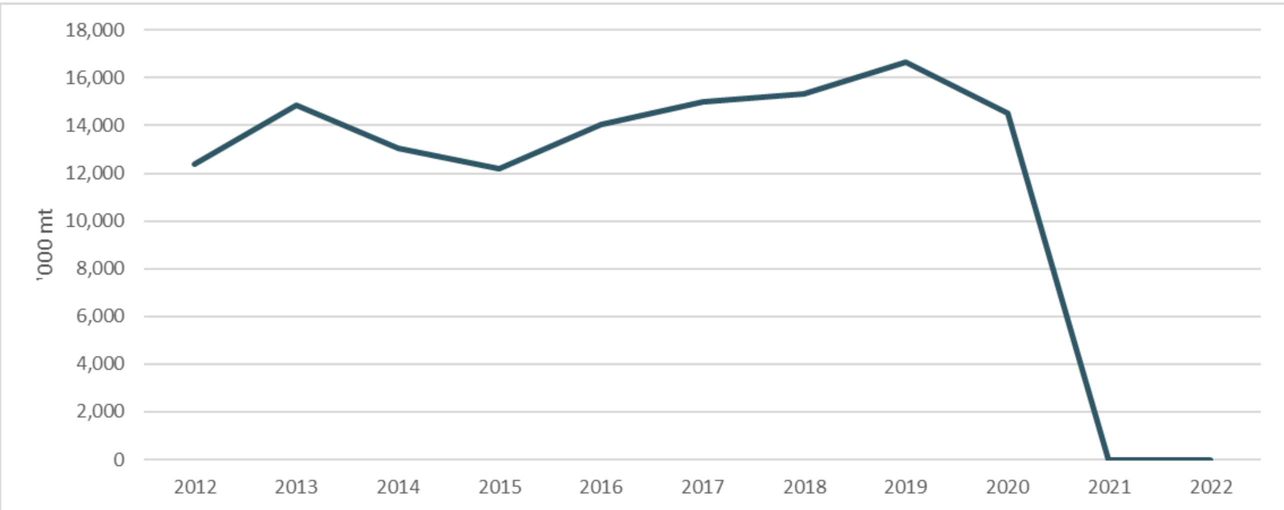


4.4.3 China

After entering the seaborne market as an importer in 2009, China's demand for seaborne metallurgical coal has varied in line with the performance of its economy, steel markets, domestic metallurgical coal production and government policy in China. China's steelmakers are estimated to have imported 52 Mt of metallurgical coal in 2022.[21] Despite reported capacity rationalisation in 2016 and 2017, crude steel production in China was the highest on record in 2020 (1,122 Mt), but fell in 2021 and 2022 as COVID shutdowns impacted consumption and industrial production

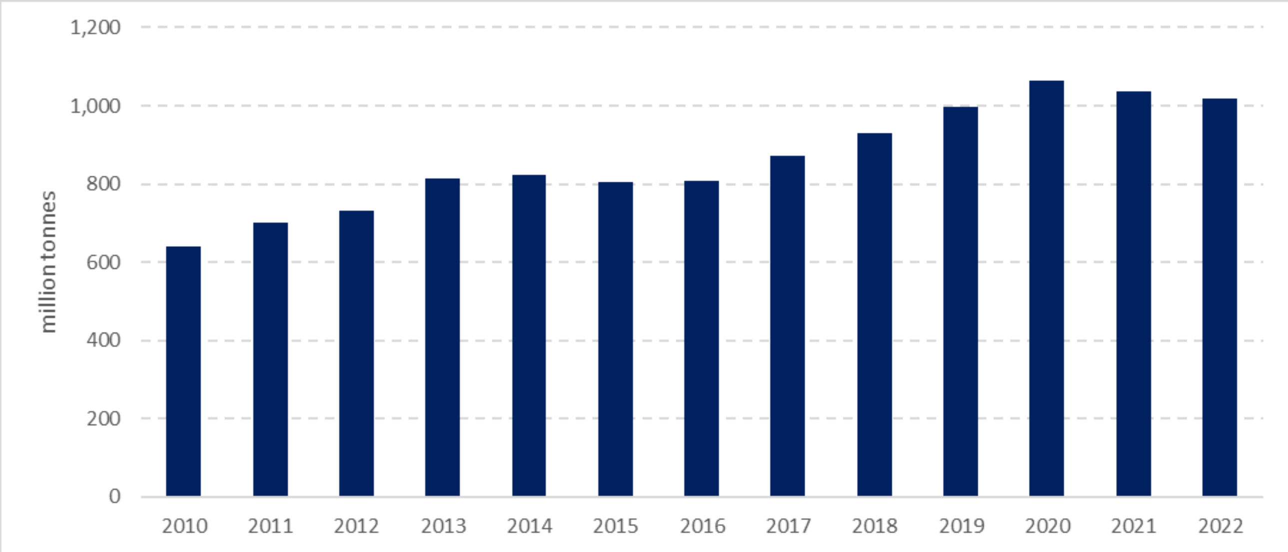
As shown in Figure 17, DBT's exposure to China's imports has been significant over the past decade. Buyers in China have typically only turned to imported coal when the price was lower than domestically delivered coal, meaning China's demand has been volatile and difficult to forecast. Government policy in China can have a material impact on seaborne coal demand, with announcements of quality checks and informal bans in the past lowering demand for Australian coal almost overnight. AME expects China steel production to grow from an estimated 1,092 Mt in 2022 to almost 1,200 Mt by 2040.

Figure 17: China imports from DBT (DBI, 2023)



[21] Office of the Chief Economist Resources and energy quarterly: March 2023

Figure 18: China crude steel production (World Steel Association, 2023)



4.4.4 South Korea and Japan

DBIM views South Korea and Japan as stable destinations for DBT's metallurgical coal exports. While these nations are not expected to provide material growth in crude steel production, they are expected to take a substantial proportion of DBT's coal to support their manufacturing and steel export industries. Many of the mines that export through DBT have varying levels of joint venture ownership by Japan, which is expected to continue the long-term sourcing of coal by buyers in Japan from these mines. AME is expecting seaborne metallurgical coal imports by Japan to stabilise at current levels (60 Mt 2022) until 2040. AME forecasts that seaborne metallurgical coal imports to South Korea will remain at an 29 Mt between 2022 and 2040.

Figure 19: Japan imports from DBT (DBI, 2023)

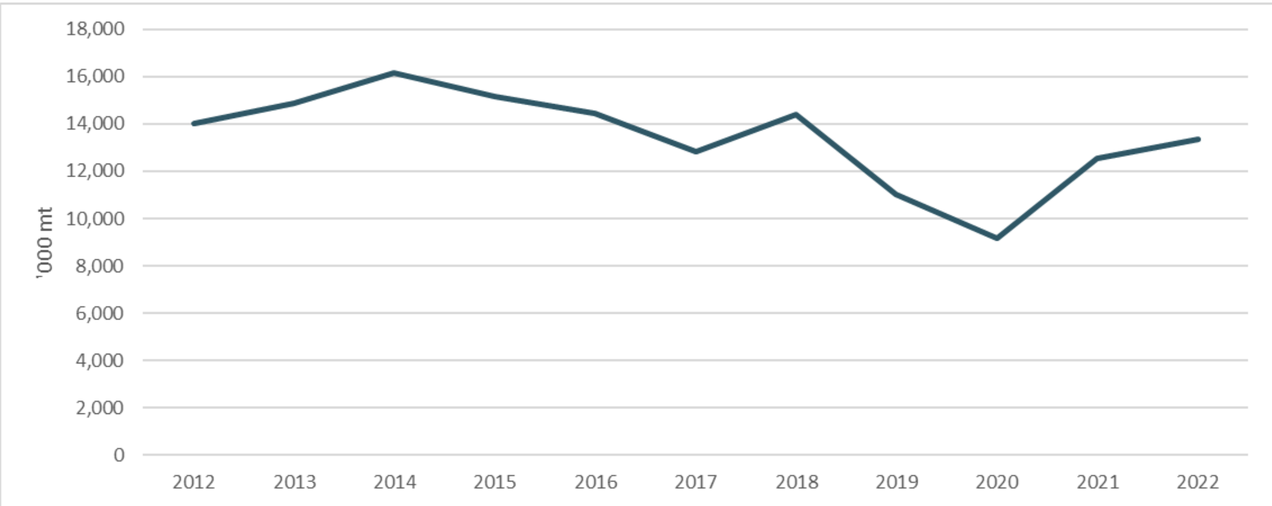


Figure 20: South Korea imports from DBT (DBI, 2023)

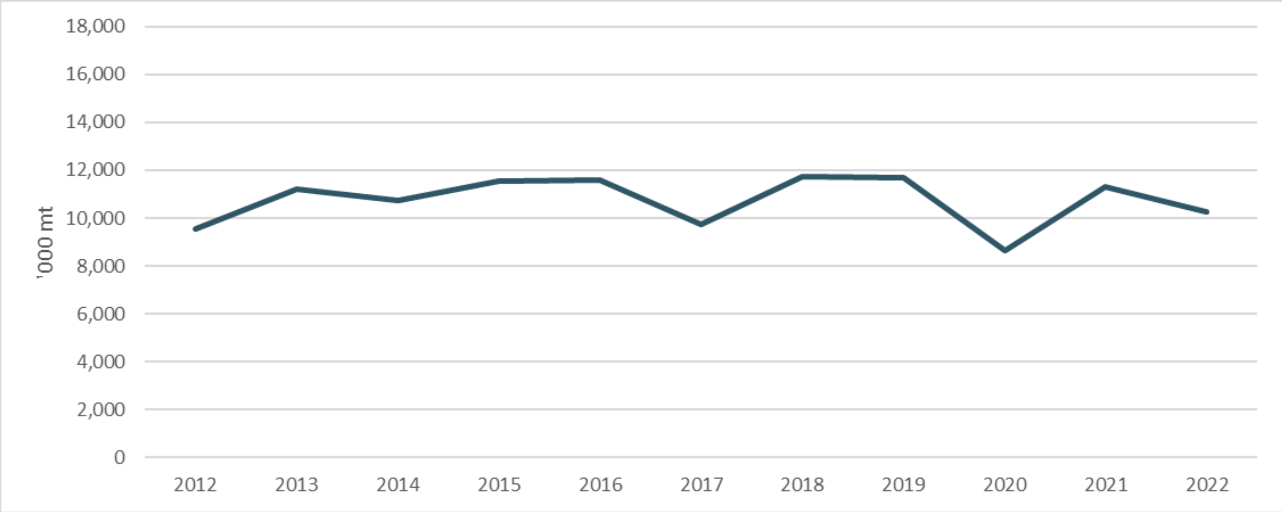


Figure 21: Japan crude steel production (World Steel Association, 2023)

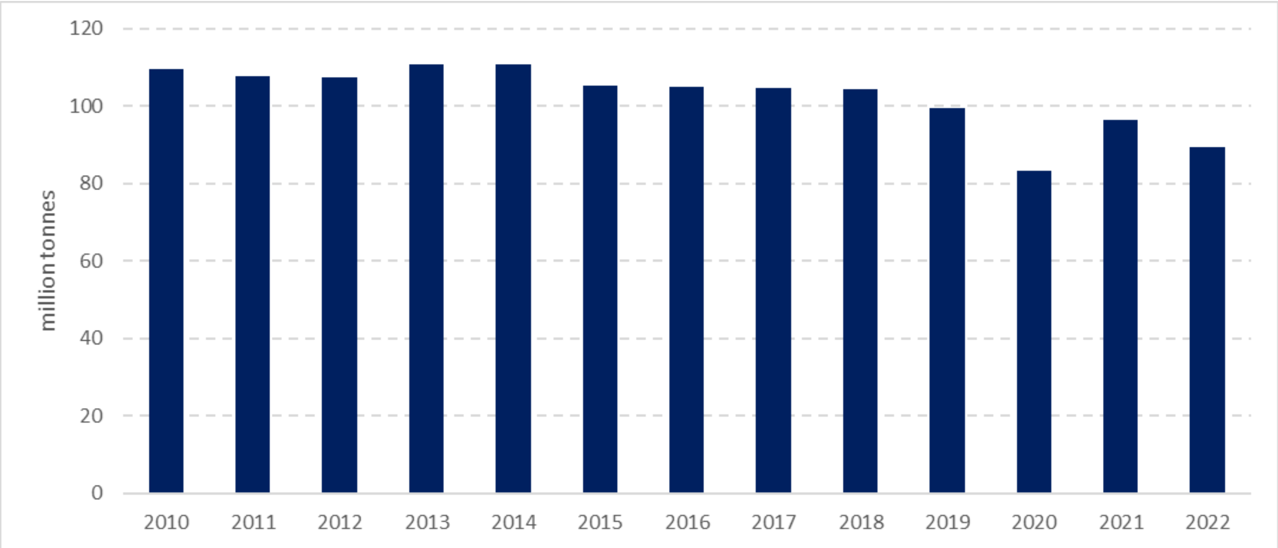
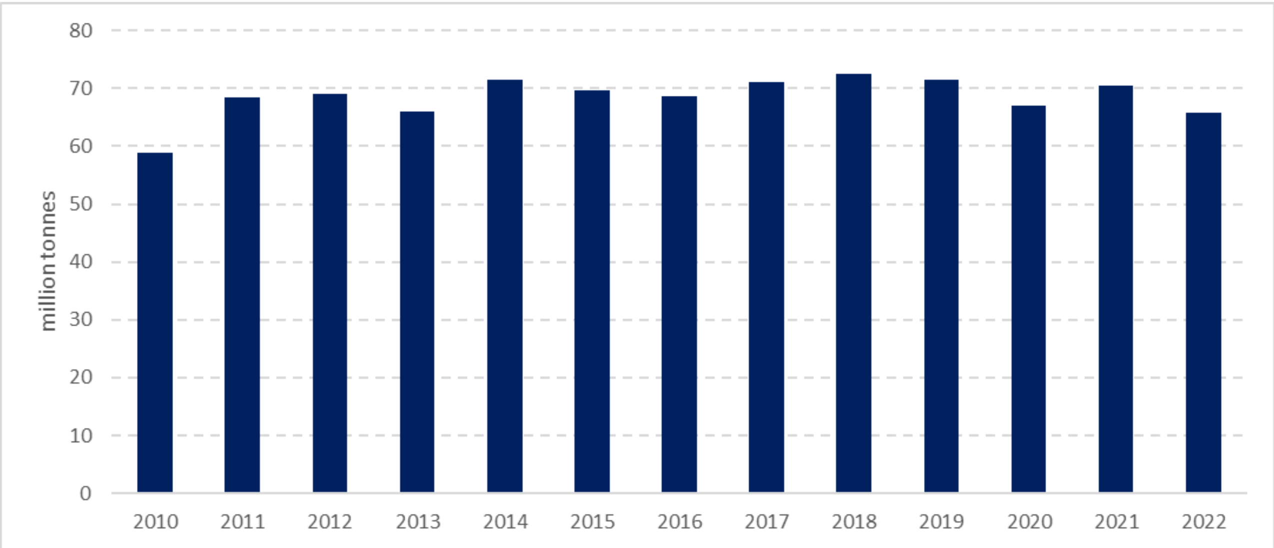


Figure 22: South Korea crude steel production (World Steel Association, 2023)



4.4.5 Europe

European countries have a well-developed crude steel production base that produced an estimated 181 Mt of crude steel in 2022. AME is forecasting European crude steel production to increase to c.267Mt in 2040. In the same period, AME is expecting European seaborne metallurgical coal demand to fall from 56 Mt in 2022 to 37 Mt by 2040. This apparent contradiction is likely to be caused by an accelerated adoption of green steel production technology in coming decades. AME expects European steelmakers to lead the way with green steel technology, compelled by net zero commitments and the natural replacement of traditional blast furnaces as they reach end of life. The crude steel production history of the 27 member countries of the European Union and the United Kingdom are shown in Figure 24.[22]

With European countries agreeing to cease importing Russian coal in August 2022, there has been a noticeable increase in imports from Australia. It is difficult to predict when Russian coal will again be available for European purchase. Europe has become a significant importer of coal handled by DBT over the past decade (Figure 23).

Figure 23: Europe imports from DBT (kt) (DBI, 2023)

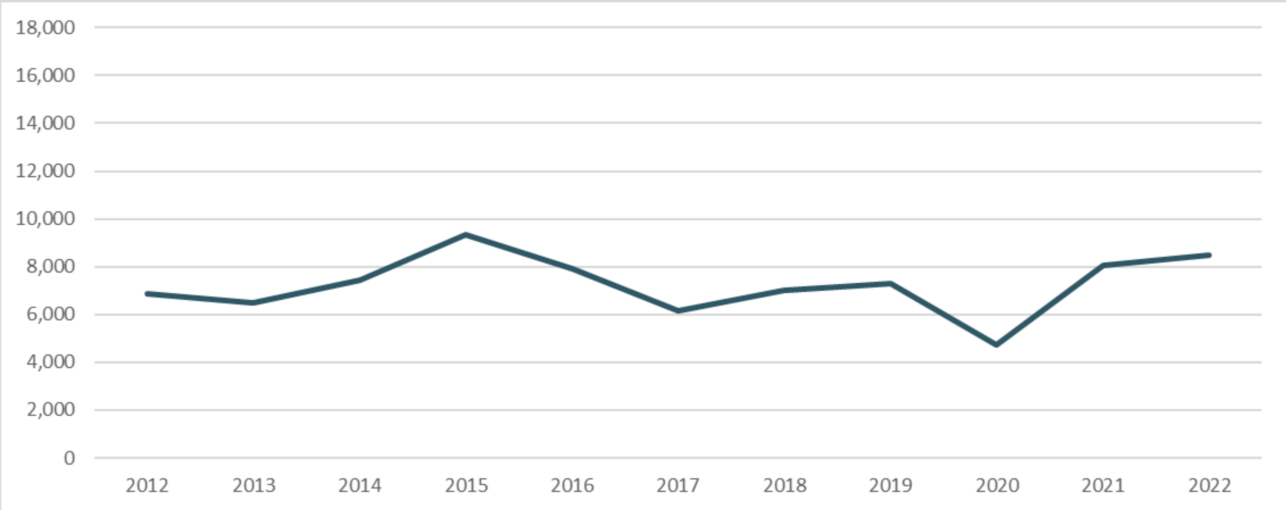
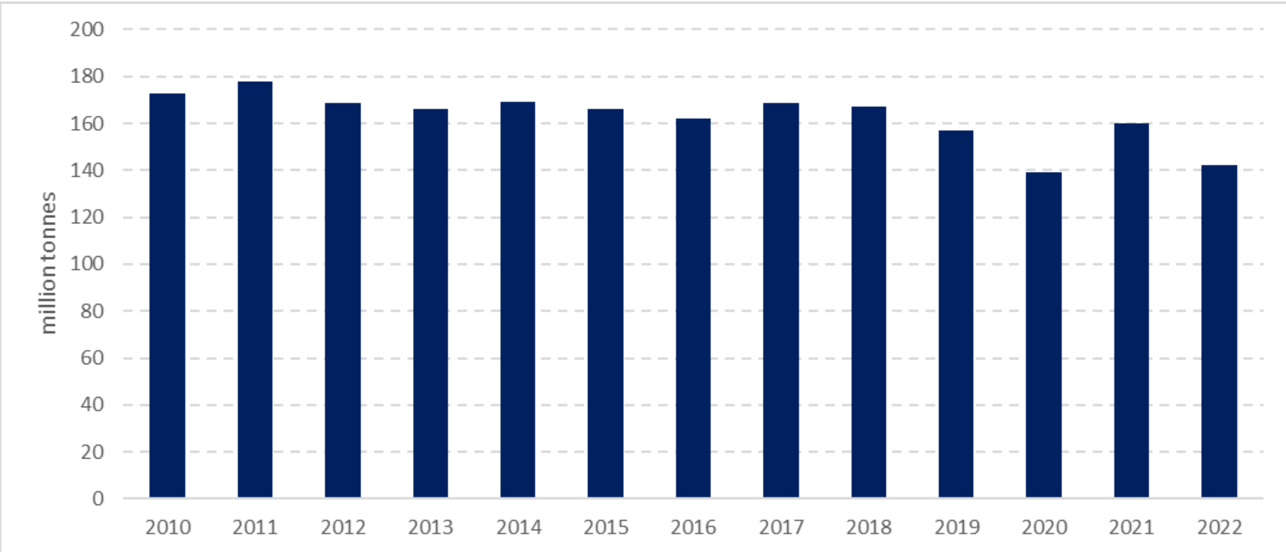


Figure 24: EU-27 & UK crude steel production (World Steel Association, 2023)



[22] World Steel Association Total production of crude steel 2022

4.4.6 South East Asia

As South East Asia's economy grows and develops, its steelmaking capacity is also expected to grow rapidly, particularly in Vietnam. While Vietnam has domestic coal reserves, AME expects that these will not be sufficient to support the domestic steel industry. Accordingly, AME is expecting Vietnam to substantially increase imports from the seaborne metallurgical coal markets to meet crude steel production targets. AME is expecting Vietnam to increase metallurgical coal exports from an estimated 7.4 Mt in 2022 to approximately 15.5 Mt by 2040. Considering DBT's proximity to South East Asia and the high quality coals exported from DBT, DBI is expecting the South East Asian region and India to drive demand for metallurgical coal exports from DBT.

Figure 25: South East Asia imports from DBT (kt) (DBI, 2023)

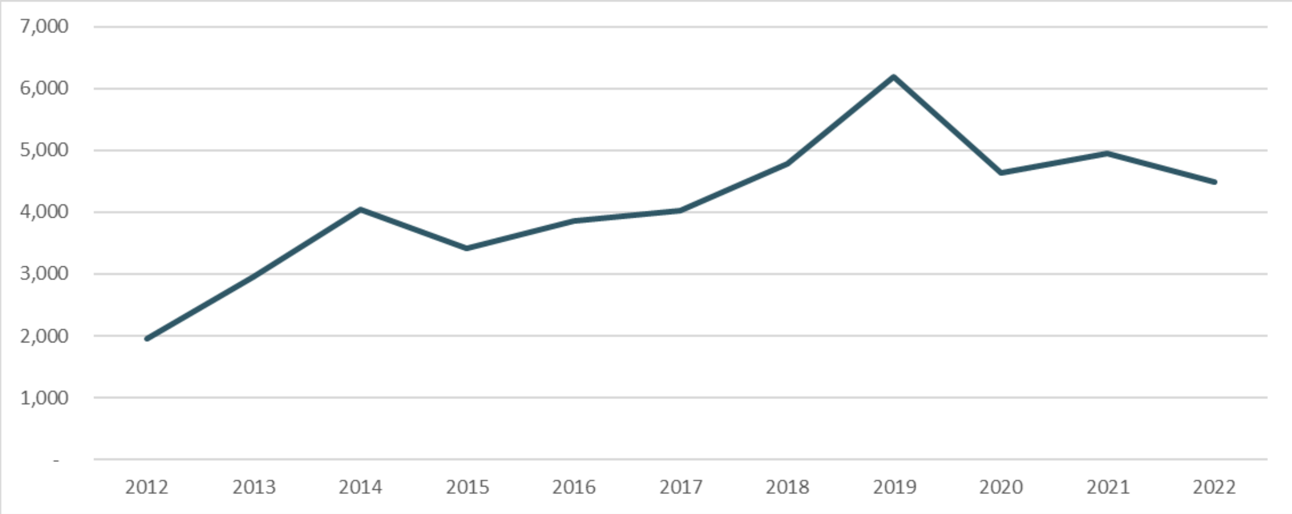
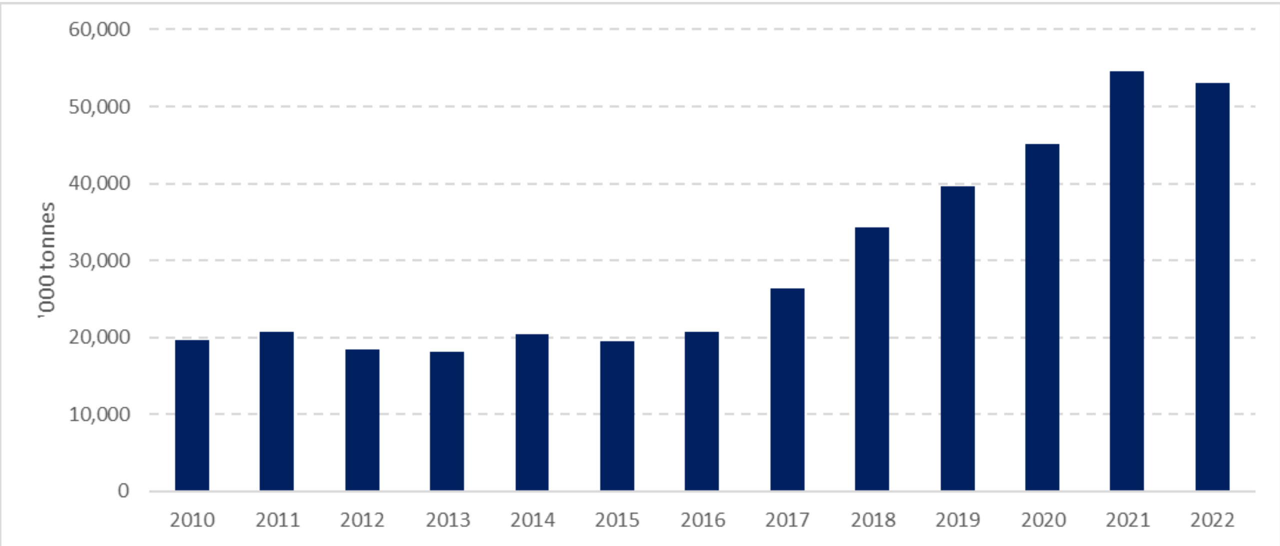


Figure 26: South East Asia crude steel production (World Steel Association, 2023)



4.4.7 Thermal coal

DBT's thermal coal exports currently comprise approximately 26% of total throughput (2022). While DBT exported approximately 12.4 Mt of thermal coal in CY2022, it is DBI's expectation that if the current mines that predominantly ship a thermal coal product were to close in line with the AME forecasts (and are not replaced by with thermal coal from new access holders), the percentage of thermal coal shipped through DBT would fall to negligible amounts between 2028 and 2031. If there was available capacity at DBT in the future and no Access Queue (currently ~33Mt), DBIM would have no ability to refuse new access seekers who otherwise meet the requirements for securing access under the 2021 Access Undertaking, on the basis of coal type. DBT's Access Queue is made up of developments that will likely ship a predominantly metallurgical coal product once they commence operations, meaning the percentage of metallurgical coal to be shipped through DBT in future years is likely to grow.

Mine Development Triggers

In the first quarter of 2016, coking coal prices were well below US$100/mt. At that time there was limited demand for expansion capacity at DBT, while existing capacity was being relinquished. By late 2016, metallurgical coal prices had surpassed US$100/mt and have generally remained above these levels since. While the incentive price for new mine developments varies, real demand for terminal capacity has increased, such that existing system capacity was not sufficient to satisfy all genuine demand from Access Seekers, in addition to already contracted capacity.

Given that DBT is fully contracted with no expiries due until 2028, DBIM's only option for satisfying the real demand from the Access Queue is by expansion of the terminal.

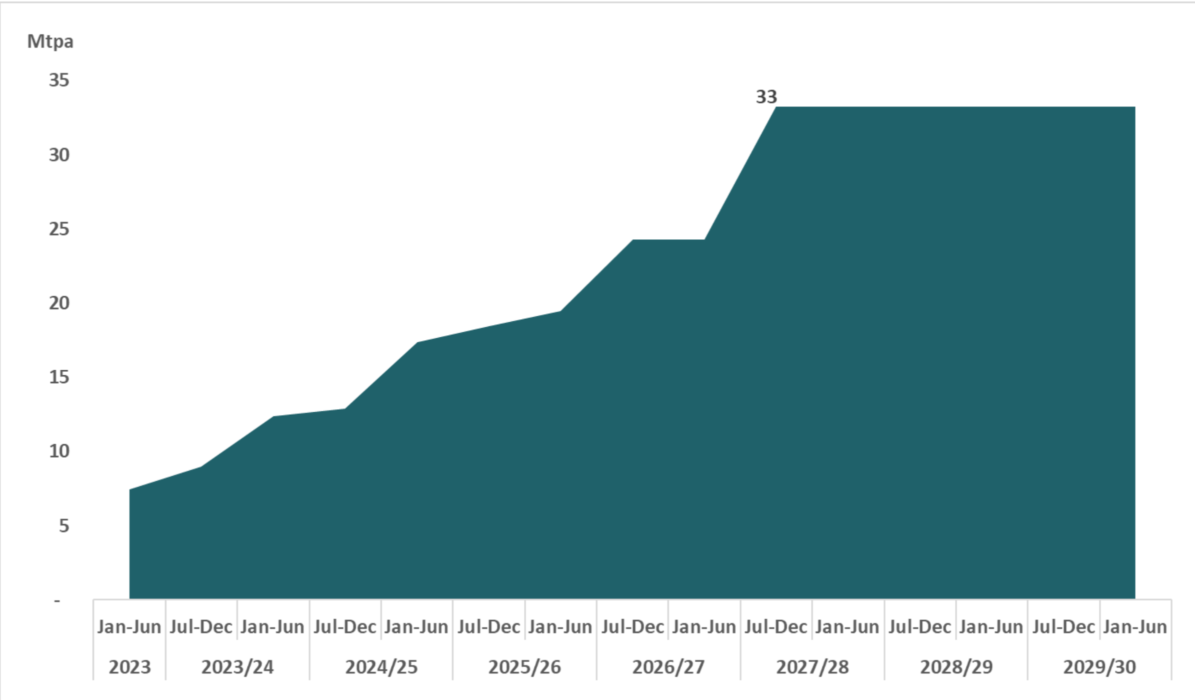
4.5 Expansion Demand

In December 2019, with an Access Queue of 56.6 Mtpa, DBIM commenced the initial processes of the 8X Expansion in accordance with existing Access Agreements and the AU. These initial processes were essential to identify:

- the true demand for new capacity;
- the extent to which that demand could be satisfied by existing capacity; and
- that the 8X Feasibility Studies would be underwritten by Access Seekers.

In June 2020, DBIM executed Conditional Access Agreements (CAAs) and Standard Underwriting Agreements (SUAs) for a total of 14.87 Mtpa with five Expansion Parties prepared to underwrite the 8X FEL2 Study. In April 2021, the Expansion Parties signed an additional Standard Underwriting Agreement to underwrite the 8X FEL3 Study. Since June 2020, DBIM has received a further nine Access Applications totalling an extra 18.4 Mtpa of capacity beyond the 8X demand taking the total demand for additional Access to 33.27 Mtpa (including the Expansion Parties).

Figure 27: DBT Access Queue Mar-23



5 DBT Expansion Options

5.1 Development objectives for DBT

DBIM's development objectives for DBT are as follows:

- Develop a terminal Master Plan that defines strategies to ensure efficient, sustainable and secure long-term operation of DBT to meet the needs of the existing terminal Users and Access Seekers.
- Develop an expansion pathway consistent with the *Sustainable Ports Development Act 2015* (**Ports Act**) and *Reef 2050 Long-Term Sustainability Plan* (**Reef 2050 Plan**) by promoting the incremental development of system capacity at DBT to accommodate the future demand for access at DBT.
- Maintain effective working relationships with all Dalrymple Bay Coal Chain (**DBCC**) stakeholders in order to optimise throughput efficiency while balancing the interests of all stakeholders.
- Ensure that DBT continues to be managed, operated and maintained at a standard consistent with the obligations set out in the PSA.
- Realise additional system throughput through improved process efficiency at the terminal and within the DBCC.
- Support community involvement and engage in ongoing meaningful stakeholder consultation.
- Ensure a continued leading practice approach to port and terminal planning within the Queensland coastal zone, particularly within the GBRWHA.

The following drivers guide the ongoing planning for expansions at DBT:

- Access applications in the Access Queue
- system capacity yield within existing terminal footprint
- the variance between actual throughput and system capacity
- lowest whole of life costs (maintainability, operational flexibility etc.)
- minimising operational loss of capacity during construction
- minimisation of environmental impacts
- integration with existing infrastructure
- providing an incremental expansion pathway to maximise the potential of existing infrastructure and match the anticipated future demand for access at DBT
- realisation of terminal capacity against User contracted requirements, and
- future upgrade/optimisation potential.

Consistent with previous master plans, any terminal expansion is integrally linked to other supply chain infrastructure. DBIM works closely with the ILC to match expansions with the other system components to provide for the efficient use of infrastructure.

5.2 Recap of the previous Master Plan

The previous Master Plan 2021 incorporated the results of the FEL2 Study for the 8X Project, which determined that System Capacity would increase from the current 84.2 Mtpa to 99.1 Mtpa.

The 8X Project, as shown in Master Plan 2021, is summarised in Table 4 below.

Table 4: Proposed expansion pathway (Master Plan 2021)

Scope			Gain (Mtpa)	Capacity (Mtpa)	Cost ($m)[23]
Stage		Description			
8X	Phase 1	• Installation of new Shiploader 4 - including construction of new L18 Conveyor and support structure behind Berth 3 • Replace Jetty Head end building • Improve outloading optimisation through augmented yard machinery controls to increase reclaim rate • Stockyard to surge bin string control improvements • L3 & L4 Conveyor drive upgrades	3.1	87.3	246
	Phase 2	• Vertical Bund walls and backfill, Bund 1 (west) and Bund 3 • Stockyard surface re-grading • Upgrades of existing yard equipment and conveyors upgrades in eastern stockyard (Stackers ST2, ST1A, reclaimer RL3 and conveyors S6, S6A, S5 and R2) • Zone reconfiguration of stockyard	3.9	91.2	229
	Phase 3	• Rail Receival Pit 4 (RRP4) and inloading system IL4 (8,100tpa) and decommissioning of RRP1 • IL2 upgrade (5,500tph to 8,100tph) by splitting flow onto original IL1 conveyors • Upgrade to existing outloading conveyors OL1 & OL2 to 8,650tph • Upgrade R3 conveyor to accommodate higher rate SR2A	5.5	96.7	461
	Phase 4	• Zone 4 project – completion of Row 8 with western walls, new stacker (ST5) for row 8 and new reclaimer RL2A (replace RL2) • New western road and access gate • Relocated Office Complex (likely to be moved to Phase 1)	2.4	99.1	340
Total			**14.9**	**99.1**	**1,276**

Beyond 8X, the previous Master Plan outlined the 9X expansion. This 9X Project remains unchanged in this Master Plan.

5.3 System Capacity Modelling

In April 2021, with the support of Underwriting Parties, DBIM commenced a FEL3 (Feasibility) study for 8X. The starting point for this study was the scope as outlined in Master Plan 2021 and detailed in a FEL 2 Study report prepared by Aurecon for DBIM in late 2020. The FEL3 Study has increased the level of definition of each phase of 8X, which in turn produced a more refined estimate and detailed schedule.

As required by s.12.1 of the AU, the Independent Expert (**ILC**) assessed the System Capacity of the various configurations studied in FEL3. In November 2022, the ILC advised modelling results which are summarised in the ILC's *Capacity Estimates for 8X Expansion FEL3 Study* (**ILC Report**) – Feb 2023. The related modelling was used by DBIM in the development of Master Plan 2023.

The ILC's Dynamic Simulation Model of the DBCC is a Discrete Event Simulation (**DES**) model developed in the AnyLogic modelling platform. It uses stochastic methods to generate the randomness of operational events that occur over time. The model is then capable of capturing the dynamic interactions within the system. The model was developed by ILC staff who have extensive experience with DBCC and simulation modelling. It was developed through a rigorous approach, including stakeholder consultation to understand current operating methodologies and planning practices, in order to determine and apply operating logic definition. Input data was sourced from various stakeholders including coal producers and Service Providers, as well as from the Supply Chain Analytics (**SCA**) system which records actual performance data of the supply chain.

The model logic and input data are validated regularly. ILC model results are published monthly and discussed at stakeholder forums.

[23] The estimate at FEL2 was at a 50% confidence level and based on $2020 AUD not escalated and excluded Interest During Construction and FEL Study Costs

The scope of the ILC's Dynamic Simulation Model is as follows:

- From the train loadouts at all mines exporting through DBT, HPCT and NQXT;
- Rail transport for coal and non-coal trains arriving at, departing from and travelling within the network;[24]
- All associated infrastructure and processes from the inloading circuit through to the vessel hatch at DBT and NQXT;
- Higher level representation of the terminal operations at HPCT; and
- The infrastructure and processes required to facilitate the movement of ships between the ship queue and the berths at DBT, HPCT and NQXT.

The maintenance schedule used in the modelling for 8X was provided to the ILC by DBIM following detailed consultation with the Operator. Equipment rates for parts of the terminal that are proposed to be upgraded in 8X were provided by Aurecon as part of the results of the FEL 3 Studies. The contracted demand levels and profiles were provided by DBIM, including existing Access Holder and Access Seeker tonnages. For capacity estimates, demand was assumed to be spread reasonably uniformly over each year.

The FEL3 modelling results showed that 8X could deliver a higher capacity than FEL2, increasing system capacity by 3.2 Mtpa from 99.1 Mtpa to 102.3 Mtpa as shown in Figure 28 with no upgrades to the track network[25].

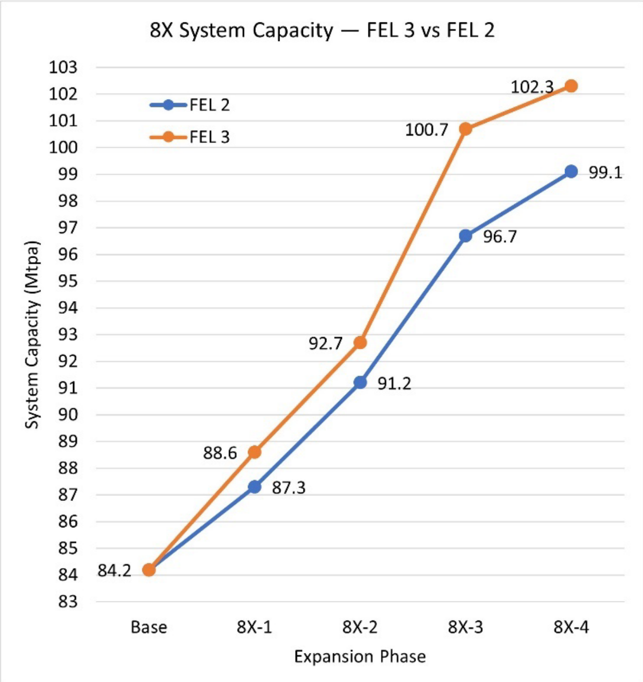
The ILC advised that the increase was due to modelling updates between FEL 2 and FEL 3 as follows:

- Model logic and input data are continually checked and verified for their validity and currency. This includes factors external to the terminal including infrastructure throughout the network and operational and contractual practices throughout the network.
- Terminal maintenance patterns were updated to reflect current scheduling practices.
- Terminal inloading rates have been updated to better reflect the variability of the rates.
- Various rail network modelling updates including current track maintenance information from Aurizon Network, updated operational practices, train payloads and train fleet make-up

[24] Refer Table 4 and Figure 3 in the ILC report

[25] The Coal Network Capacity Company (Independent Expert engaged by Aurizon Network pursuant to UT5) has identified a Capacity Deficit exists in Goonyella Rail System. Access Seekers are required to secure rail access to match the expanded capacity which will become available from 8X.

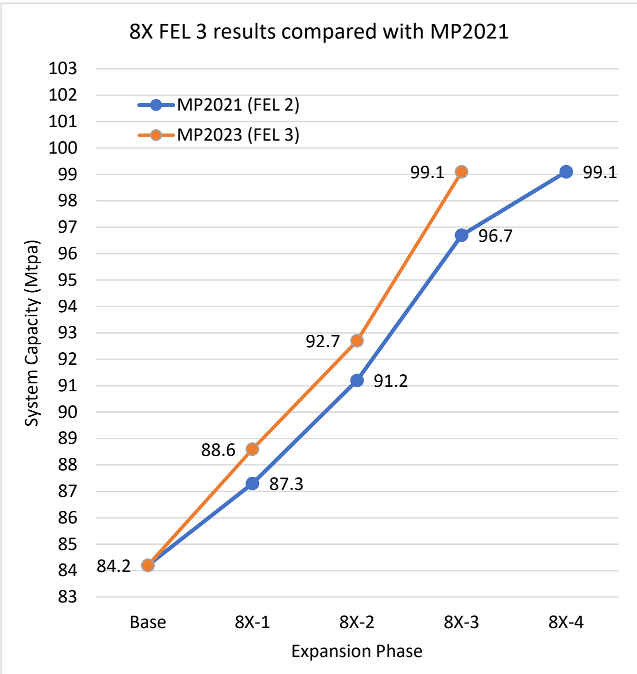
Figure 28: Comparison of System Capacity Results for FEL 2 and FEL 3 (ILC 2023)



The increased capacity enabled DBIM to reduce the scope of the 8X Project to less than the first three phases studied, matching the capacity of 14.9 Mtpa (to 99.1 Mtpa total) required by the Expansion Parties and not exceeding the level for which environmental approvals have been obtained (refer Chapter 7). If further demand for the additional 3.2 Mtpa capacity exists after 8X is built then, subject to further environmental approvals, the remainder of this initial 8X project scope could be undertaken at that time.

The modelling results for System Capacity are shown in Figure 29.

Figure 29: Comparison of modelling results with reduced 8X Scope (ILC 2023)



5.4 8X Expansion

The recommended 3-phase 8X Expansion is summarised below in Table 5. The cost is at a P95 level, including escalation, but excluding Interest During Construction (IDC) and the costs of FEL studies of $31m.

Table 5: 8X Expansion Project Summary

Phase & Scope		Gain (Mtpa)	Total (Mtpa)	Cost ($m)
1	• New Shiploader 4 – with new L18 and support structure behind Berth 3 • Outloading optimisation through augmented yard machinery controls to increase average reclaim rates	4.4	88.6	466
2	• Vertical Bund walls and backfill, Bund 1 (west) and Bund 3 • Stockyard surface re-grading • Upgrade eastern stockyard machines (ST1A, & RL3) and conveyor R2 • Reconfiguration of stockyard zones	4.1	92.7	289
3	• New RRP4 and IL4 (8,100tpa) and decommissioning of RRP1 • IL2 upgrade (to 8,100tph) by splitting flow onto original S3 and S4 conveyors • Upgrade outloading conveyor OL1 to 8,650tph for shiploader SL1A	6.4	99.1	614
Total		**14.9**	**99.1**	**1,369**

The scope removed in order to create the recommended 8X Project is summarised below in Table 6.

Table 6: Scope excluded from recommended 8X Project

Phase & Scope excluded (compared with FEL 2)	
1	• No change
2	• Upgrade of stacker ST2 and conveyors S6 & S6A
3	• Upgrade of outloading conveyors OL2 to 8,650tph, including SL2 • Upgrade of R3 conveyor to accommodate higher rate SR2/RL4 • S13 and S14 to future S9 transfer infrastructure • S2 to future S9 flow diversion infrastructure
4	• Zone 4 Project • Western Access Gate & Road • New Administration Building (moved to NECAP Program)

During FEL 3, the Operator revised its studies consistent with the changes to the scope of the 8X Project. The studies included:

- An assessment of the impact on Operating and Maintenance Costs by phase, including the costs by Business Unit required during the implementation of the project, used by DBIM to model the cost impacts for Users.
- A Strategic Workforce Facilities Planning Study. Where facilities are directly impacted by 8X, or are required to support 8X, they have been included in the 8X scope. Otherwise, they have been removed from the 8X scope and added to the NECAP program as appropriate:
  - Wharf office (remains in 8X estimate)
  - Warehouse extension (remains in 8X estimate)
  - Administration Building and associated carpark and control tower works (transferred to NECAP)
  - Corporate centre and Hilltop office demolition (transferred to NECAP)

The project scope is shown schematically in Figure 30 and Figure 31, and summarised in the following sections.

Figure 30: 8X Expansion –Schematic – Offshore

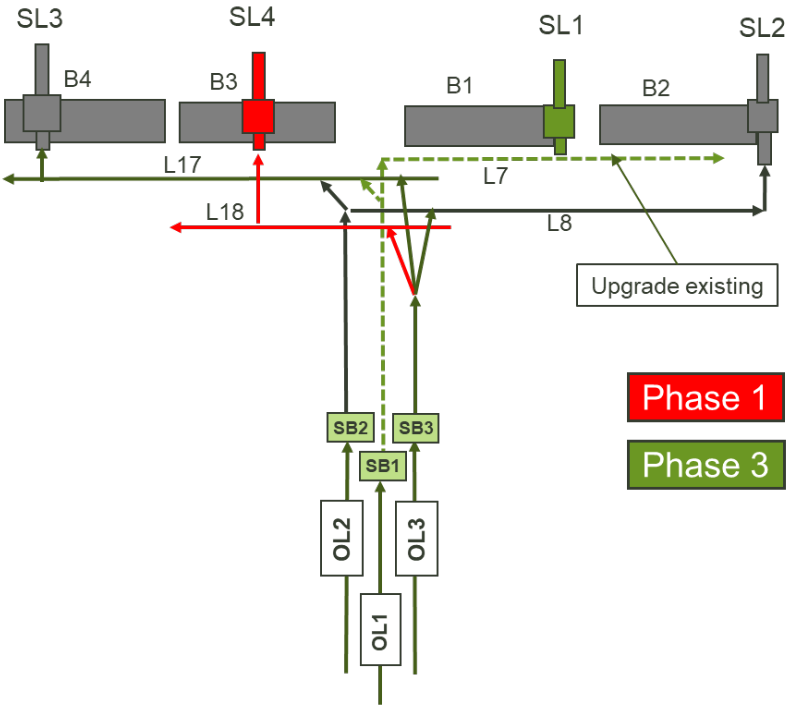
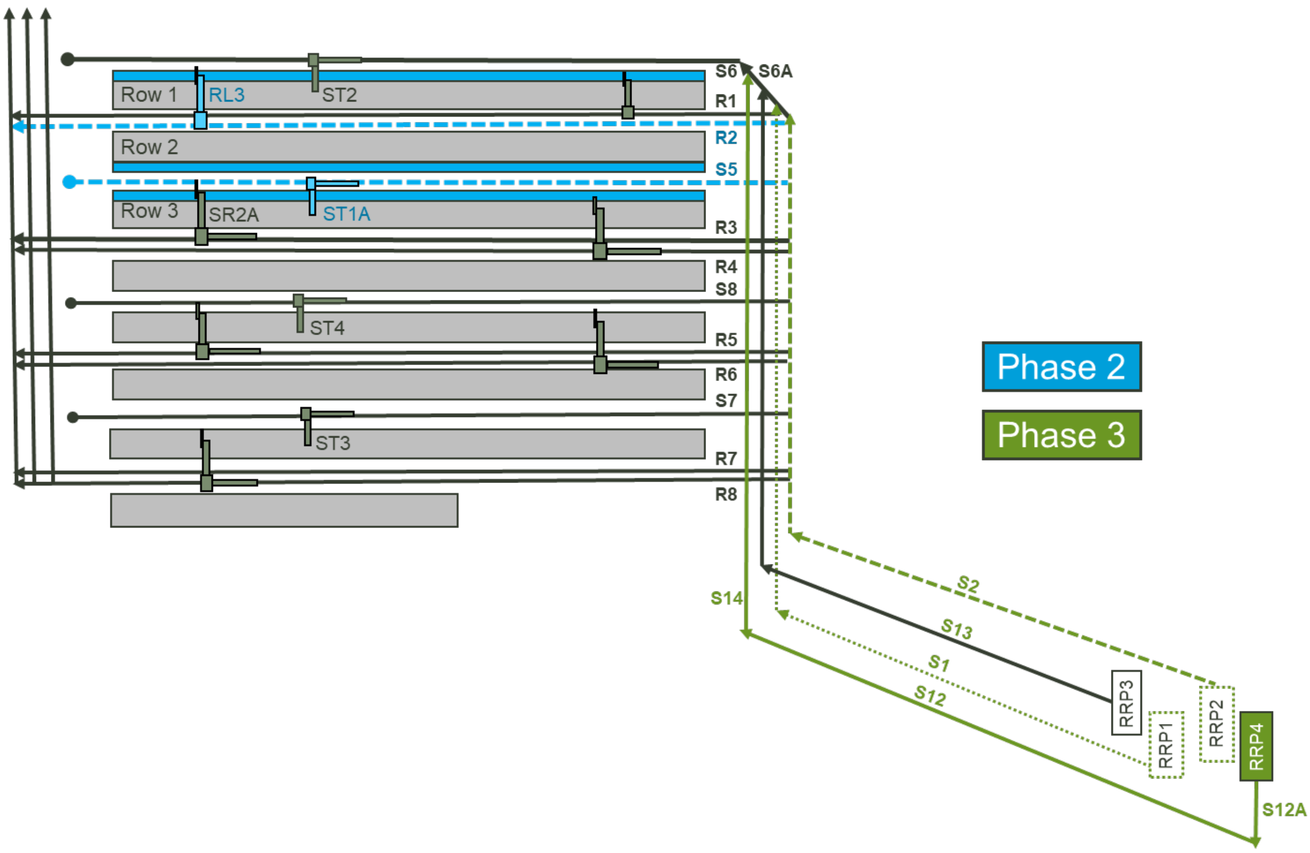


Figure 31: 8X Expansion –Schematic – Onshore



5.4.1 Phase 1: New Shiploader SL4 and Outloading Optimisation

The key elements of Phase 1 are summarised as:

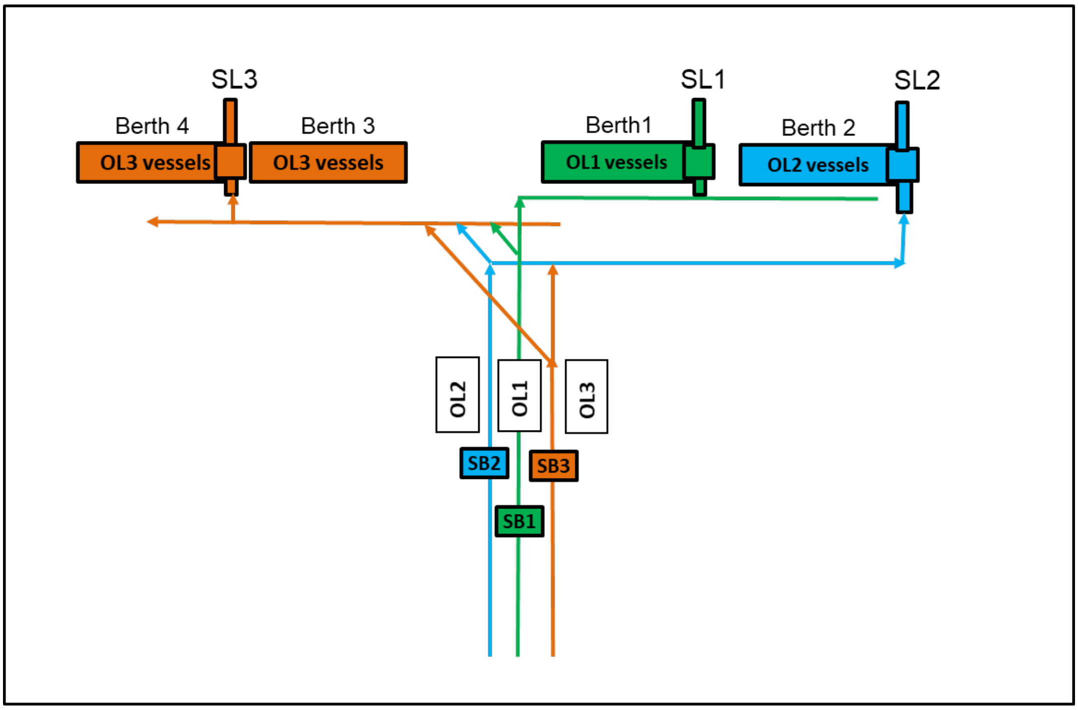
- New Shiploader SL4 - including new L18 and support structure behind Berth 3
- Outloading optimisation through augmented yard machinery controls to increase average reclaim rates

Shiploader SL4

Machine availability is the percentage of time (excluding planned shutdowns) that the machine it is available to operate. Reliability is the percentage of available time the machine operates correctly when it is required to do so. Availability and reliability are related. To achieve the high reliabilities expected of equipment at DBT, the equipment must be well maintained, which reduces availability. The more difficult a machine is to maintain, the more difficult it is to achieve high reliability and high availability. It follows that the simpler the machine, the easier it is to meet availability and reliability requirements.

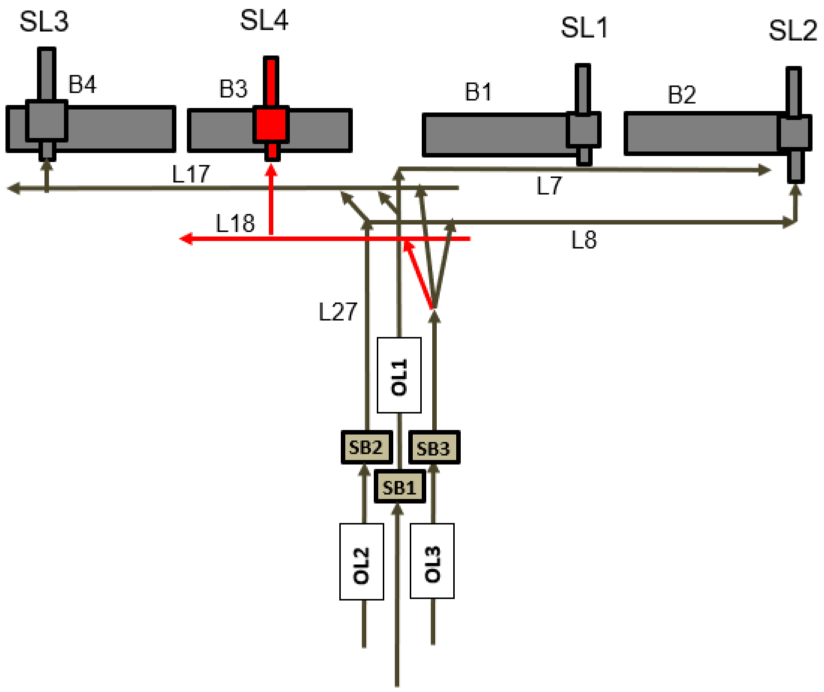
Shiploader complexity, coupled with access constraints, mean that it is more difficult to achieve high levels of availability for the shiploaders than it is for outloading conveyor strings. An average availability of 95% is achievable over the long term for the three outloading strings, whereas achieving 91% average availability for the shiploaders can be challenging. The current outloading configuration is based on three shiploaders being fed by three outloading conveyor strings as depicted in Figure 32. Currently, when a shiploader is being maintained, a maximum of two outloading systems can be used thereby limiting the terminal outloading system availability to shiploader availability.

Figure 32: Existing Outloading to Shiploader connectivity



A fourth shiploader on Berth 3 allows for the existing outloading strings to operate independently of shiploader maintenance, thereby providing an overall 4% increase in outloading availability and a subsequent capacity increase. The proposed connectivity is shown in Figure 33.

Figure 33: Proposed Outloading to Shiploader connectivity with SL4



The new SL4 design includes improved operational and safety features, such as the off-boom operator's cabin shown in Figure 34 below, which reduces the risk to the operator in the unlikely event of collision with the vessel.

Figure 34: SL4 off-boom operator's cabin

A new conveyor L18 will be installed to transfer coal from L15 (part of OL3) to SL4 via tripper. This will require marine piling works behind the existing wharf, including piling and wharf decking to provide for the new maintenance support facilities building.

Outloading Optimisation

Current outloading availability is masked or hidden to some extent by shiploader availability. Once shiploader availability is no longer the constraint on availability, all impacts on outloading availability will have an impact to capacity. During the FEL 3 Study DBIM confirmed the areas for optimisation in outloading and eliminated any unnecessary delays to outloading availability. Areas where infrastructure modifications or control system upgrades are required have been incorporated into the scope of 8X. Most significantly, there is a requirement to upgrade the drives on conveyors L3 & L4 that feed Surge Bins 1 & 2 respectively. While the drives were originally designed to the normal drive sizing requirements adopted at DBT, they are not suitable to allow robust operation when reclaim capacity must be maximised. In circumstances when surge bin throughput is maximised, the existing drives may reach thermal overload and cause significant delays after surge bin full events or metal detection stops. Replacing the drives allows for a change to the way the surge bin levels are controlled, allowing for a maximisation of reclaim capacity and a resulting uplift to outloading capacity.

The additional capacity released by 8X Phase 1 is 4.4 Mtpa as shown in Table 7.

Table 7: Phase 1 Scope and Capacity Increment for Phase 1

Phase	Description	Capacity (Mtpa)
Baseline	ILC System Capacity Assessment - current	84.2
8X Phase 1	Shiploader SL4 on Berth 3 • Shiploader 4 (SL4) located on Berth 3, a new long travelling luffing A-Frame shiploader (8,650tph) • L18 wharf conveyor located behind Berth 3 and L17, including tripper to feed SL4 (8,650tph) • Replacement of Wharf Building Outloading Optimisations • SR5 bucketwheel upgrade • Stockyard to surge bin string control upgrades • Drive upgrades to L3 & L4 conveyors	88.6

Operational impacts during implementation of Phase 1

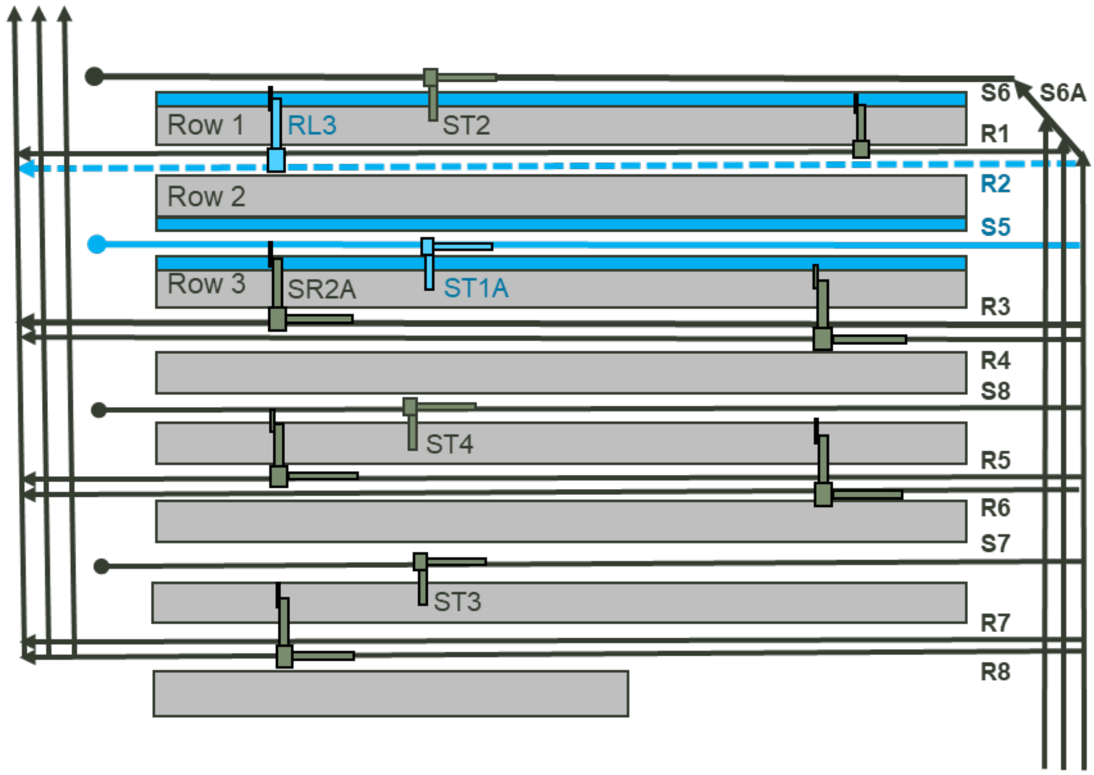
No material throughput losses are expected during the implementation of Phase 1. The cut-in to allow feed from outloading system OL3 is relatively simple and can be completed during a routine maintenance outage. In fact, the new SL4 can eliminate throughput reductions during long term outages, particularly in relation to shiploader replacements or major refurbishments. Outages associated with L3 and L4 conveyor drive replacements are also not material, as they can be masked by usual maintenance outages for SL1 and SL2.

5.4.2 Phase 2: Stockyard Augmentation and Conveyor Upgrades

The key elements of Phase 2 are highlighted in Figure 35 and are summarised as:

- Stockyard Augmentation Project - Addition of walls to Bund 1 and Bund 3 to improve storage volume in Rows 1, 2 and 3 by allowing wider piles to be stacked against the walls.
- Upgrade of R2 conveyor to allow RL3 to operate at its full reclaim rate potential (from 4200 tph to 5300 tph) from Rows 1 & 2.
- Replacement of S5 Conveyor to allow the new Stacker ST1A to stack at its full rate potential of 8100tph into Rows 2 & 3
- A Zone swap to optimise the pairing of yard zones to outloading systems

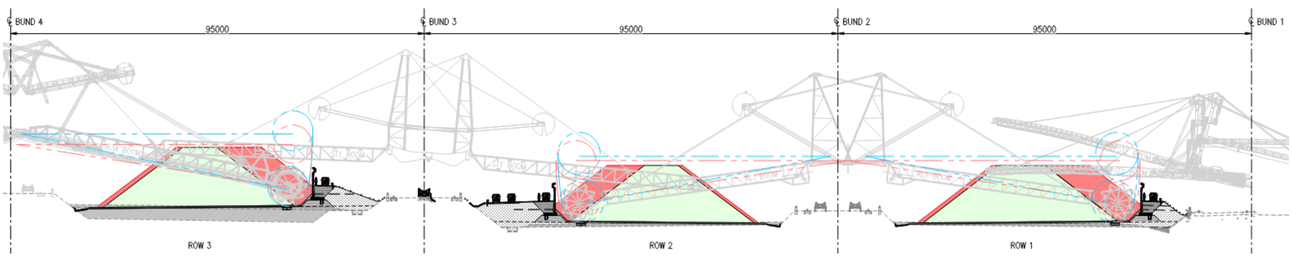
Figure 35: Areas of Stockyard affected by Phase 2



Stockyard Augmentation Project (SAP)

SAP increases the stockyard storage volume, delivering an efficiency gain in the existing coal chain by allowing more parcels to be built simultaneously in the stockyard which, in turn, allows trains to be sent to more mine load-outs on any given day. This improved efficiency provides additional system capacity by reducing the peaking congestion at points in the network.

Figure 36: SAP stockyard cross-section of rows 1, 2 & 3 showing additional stockyard volume

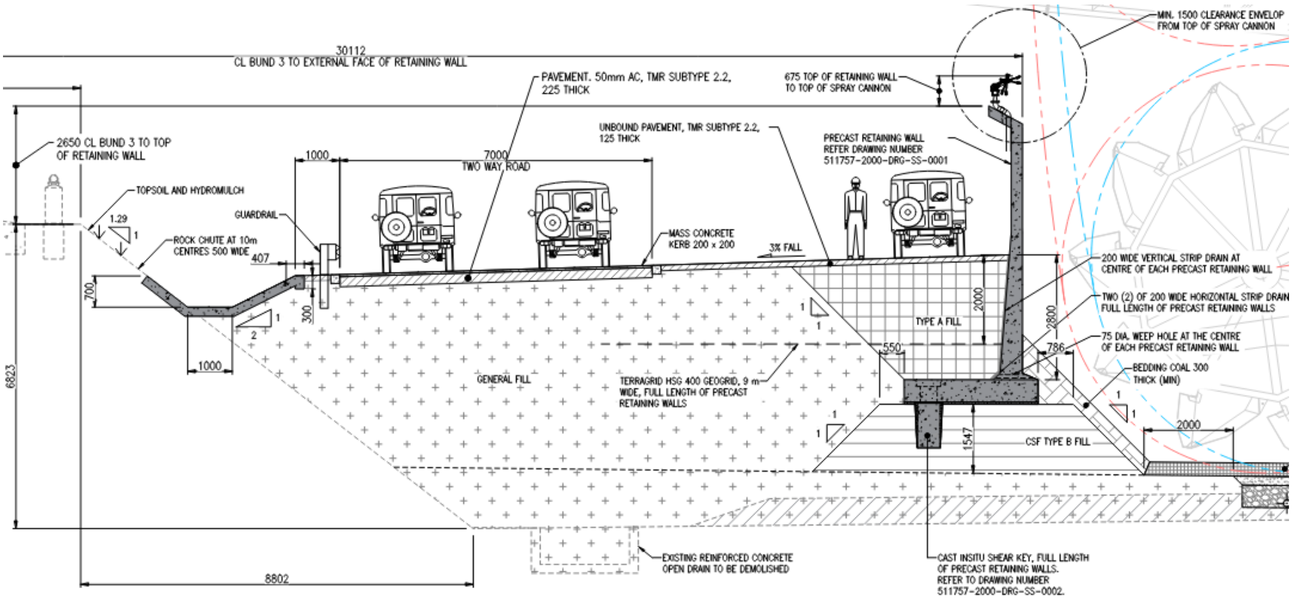


Volume improvements are approximately 20 to 35% based on typical 25,000 t individual pile sizes associated with typical 60 kt average parcel sizes. The gains could be greater depending upon the mix of stockpile sizes involved. Larger parcels lead to a larger relative change in volume.

The vertical walls also have the effect of improving average reclaim rates able to be achieved by reclaim machines RL1, RL3, SR2 and SR3A.

The vertical wall design detail is shown in Figure 37 above , indicating the stockyard re-profiling and improved drainage features. This design reduces the risk of stockpile slumping during heavy rainfall.

Figure 37: SAP Bund 3 East – typical section



RL3-R2 Upgrade

RL3 has the same capacity bucketwheel, boom conveyor and reclaim chute as RL1, RL2, SR3A and SR4A. The machine is capable of operating at a nominal 5,300 tph without requiring any major upgrades. Phase 2 includes the upgrade of R2 reclaim conveyor to 5,300 tph to capitalise on RL3's capability. This will be achieved by a speed increase from 4.9 m/s to 6.2 m/s and a carry idler upgrade from 35° to 45°. Other changes include a drive and brake upgrade, a transfer chute replacement, and a tail mounted brake to prevent chute overfilling.

R2 will also receive a conveyor safety system upgrade to comply with AS4024 for devices associated with emergency stops.

There is minimal work required to allow RL3 to reclaim at the new rate. These tasks include;

- Adjustment of the skirts on RL3 transfer conveyor and R2 transfer chute
- Commissioning RL3's reclaim parameters to suit 5,300 tph (including adjusting chutes, deflectors, skirts, blocked chute switches and other field devices to suit the new operating conditions)
- Revising control parameters for reclaiming against the new SAP walls on Bunds 1 and 3

Stackers ST1A Upgrade

Inloading system 3 has a rate of 8,100 tph but is limited to a lower rate of 5,500 tph when used to stack via ST1A. Figure 38 shows the relative location of machines in the stockyard.

In the case of ST1A, the machine geometry is suitable to accommodate the vertical bund walls and is designed to accommodate the higher stacking rate with only minor modifications.

The FEL 3 Study confirmed that S5 conveyor should be replaced with a new 2000 mm wide conveyor to achieve the target 8,100 tph consistent with all other stacking conveyors. The rate of 8,100 tph allows higher rate inloading systems to stack at full rate whenever a dedicated stacker is being used.

Replacing the conveyor with a new conveyor on the same footings has the additional benefit of reducing brownfield shutdown risk.

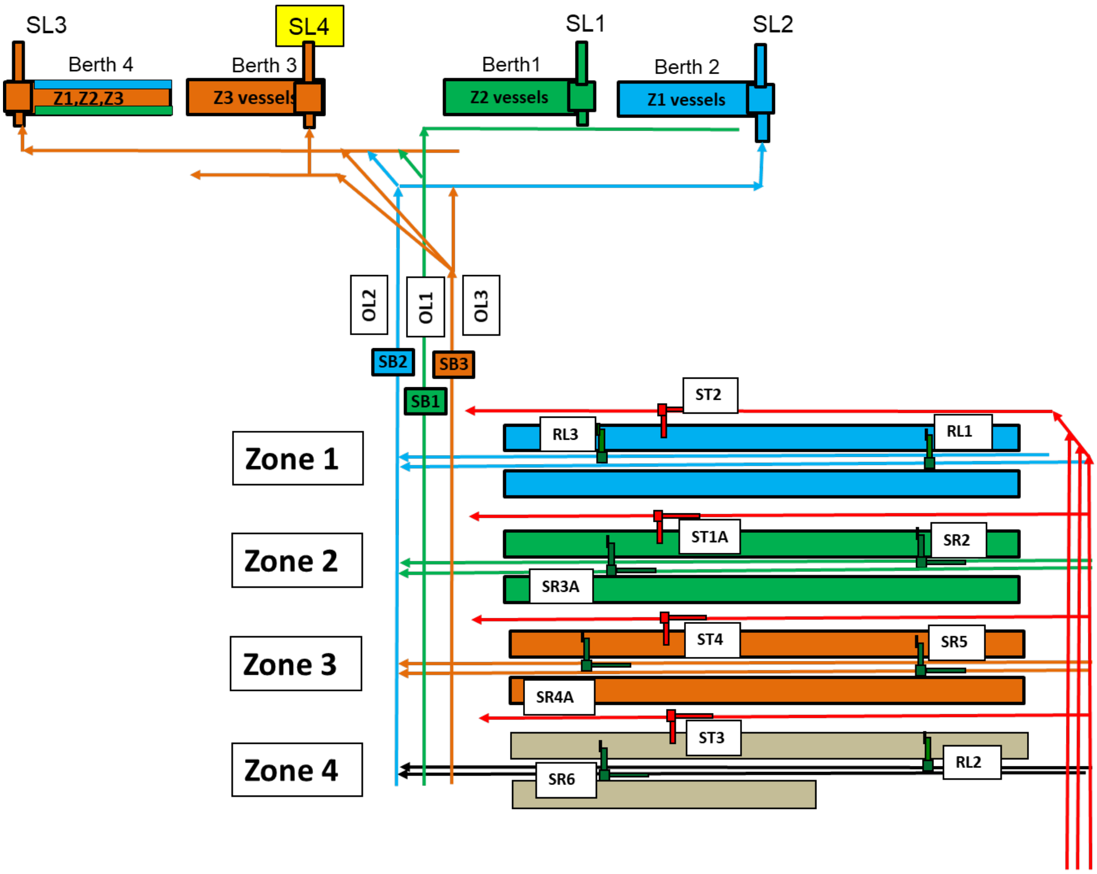
Zone Swap

After the above works are completed, the Zone to OL system pairing will be changed to reflect the new balance of reclaim rates and storage volumes across the Zones.

The new optimal pairing will be:

- Zone 1 to OL3, SL3/SL4 on a dual Berths 3 and 4
- Zone 2 to OL1, SL1 on a single Berth 1

Figure 38: Proposed re-allocation of stockyard zones to OL systems following SAP



The ILC model shows that Phase 2 yields a System Capacity of 92.7 Mtpa (Table 8), including an increase of 4.1 Mtpa compared with 3.9 Mtpa in FEL 2.

Table 8: Scope and Capacity Increment for Phase 2

Phase	Description	Capacity (Mtpa)
Baseline	Phase 1	88.6
8X Phase 2	• Vertical Bund walls and backfill, Bund 1 (west) and Bund 3 • Stockyard surface re-grading • Upgrades of existing equipment (ST1A, RL3 and conveyor R2) • Replacement of conveyor S5 • Reconfiguration of stockyard zones	92.7

Operational impacts during implementation Phase 2

The ILC modelled the potential throughput losses the construction of Phase 2. Various implementation scenarios were modelled. The modelling led to an optimisation of the implementation schedule to minimise the impact of the works. The modelling shows that the total loss 3.0 Mt if the terminal handles 100% of contracted demand over that period. The 3.0 Mt is based on conservative assumptions for affected rows. There is scope to further reduce this loss by using temporary bunds to locally increase storage volume in these areas. The modelling showed that there would be no throughput loss if the terminal handled volumes in the order of 75 Mtpa which is representative of recent forecasts provided to the Operator.

5.4.3 Phase 3: New IL4 and Inloading and Outloading Upgrades

The key elements of Phase 3 are summarised as:

- New Rail Receival Pit 4 (RRP4) and inloading system IL4 (8,100 tph)
- IL2 upgrade (5,500 tph to 8,100 tph) by splitting flow onto S3 & S4
- Decommissioning of RRP1 and conveyor S1
- Upgrade to existing outloading conveyor OL1 to 8,650 tph

New Inloading System IL4

Currently DBT has one high rate inloading string (IL3 operating at 8100 tph) and 2 lower rate systems (IL1 and IL2 operating at 5500 tph). It is technically feasible to upgrade IL1 and IL2 to 7600 tph, however the shutdown durations to complete the works are prohibitive. The shutdown duration to upgrade RRP2 and IL2 is estimated to be approximately 6 months and RRP1 would likely need to be shut down for considerably longer. The RRP1 pit would require extensive modifications to the receival hoppers and feeder system, as well as the conveyor systems. Completing both upgrades before building a fourth system would reduce the terminal capacity to less than 60 Mtpa for more than a year.

A new high capacity fourth inloading system (based on the IL3 design) is proposed as the first step to increase inloading capacity as a part of 8X Phase 3. The FEL 3 Study determined that the best option included construction of RRP4 on a new Track 4 on the inside of the existing rail loops and a new conveyor system running over the rail lines to feed the yard as shown in Figure 39, via a new tunnel under Hay Point Road. A more detailed perspective of the changes to the inloading system is illustrated in Figure 40.

Figure 39: Onshore expansion works showing inloading upgrades

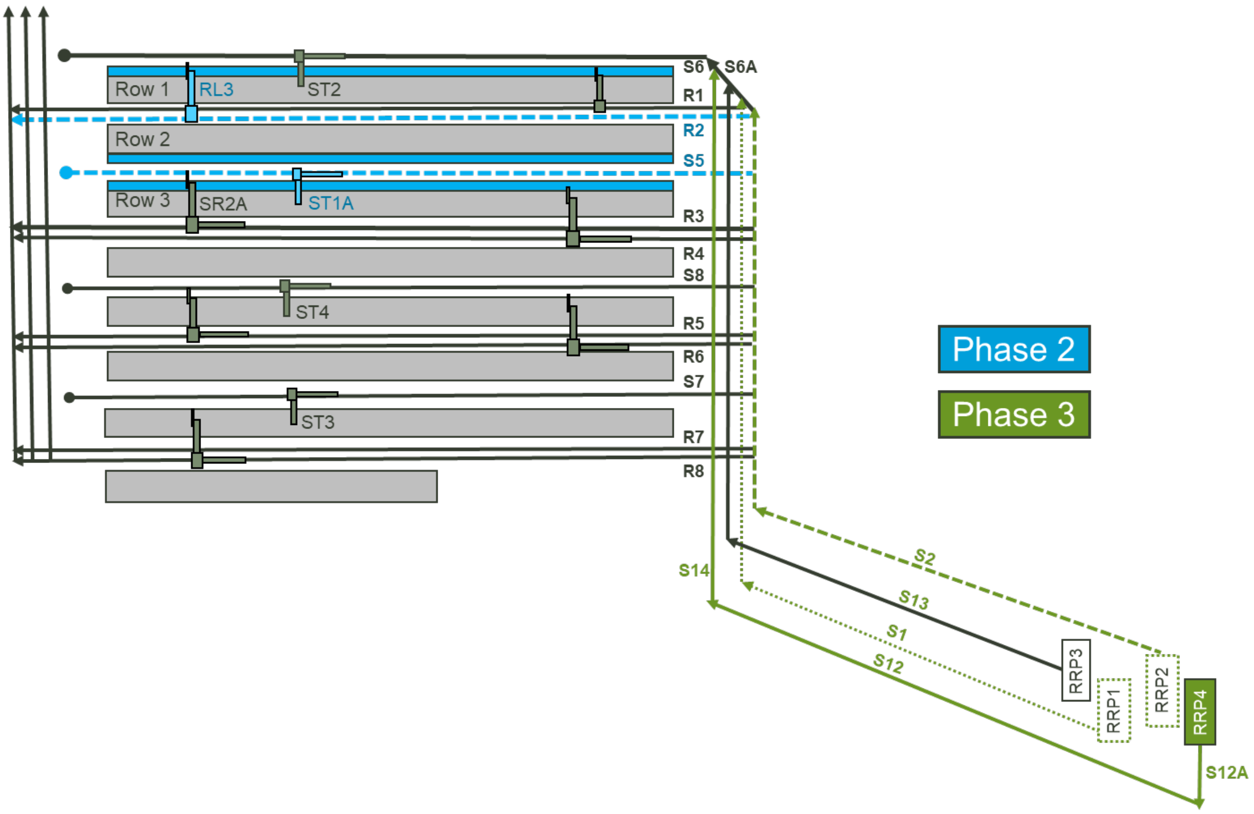
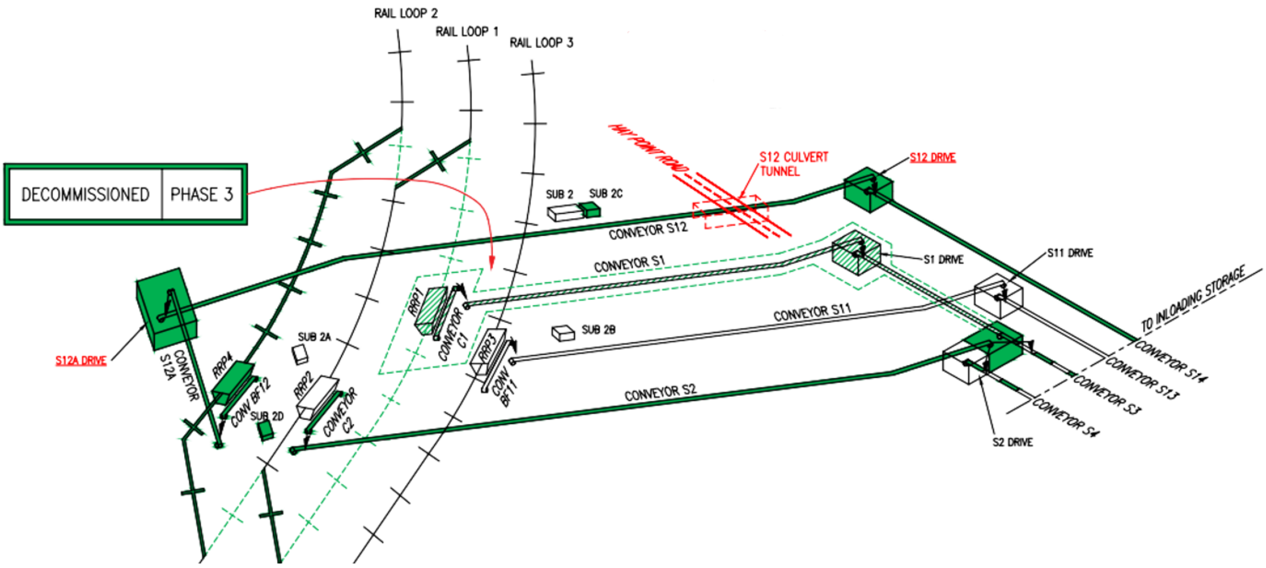


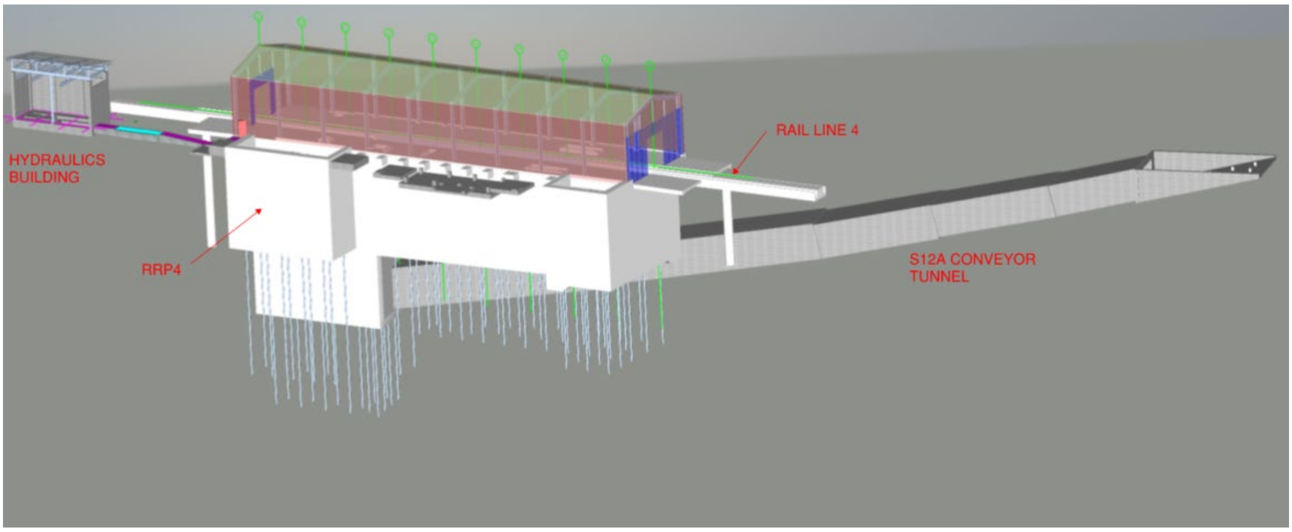
Figure 40: 8X Expansion – Schematic – Changes to Inloading System due to Phase 3



Rail access to RRP4 is achieved by a temporary closure of RRP2 and slewing of existing rail line 2 to provide access to RRP4. This provides an opportunity to upgrade RRP2 without throughput loss.

The new RRP4 is similar in design and operation to RRP3, apart from the lower vault area due to the proposed alignment of the S12A tunnel as it departs the pit. The RRP3 tunnel departs the pit at essentially a right angle to the rail centreline. The RRP4 tunnel will depart at an acute skew, as illustrated in Figure 41.

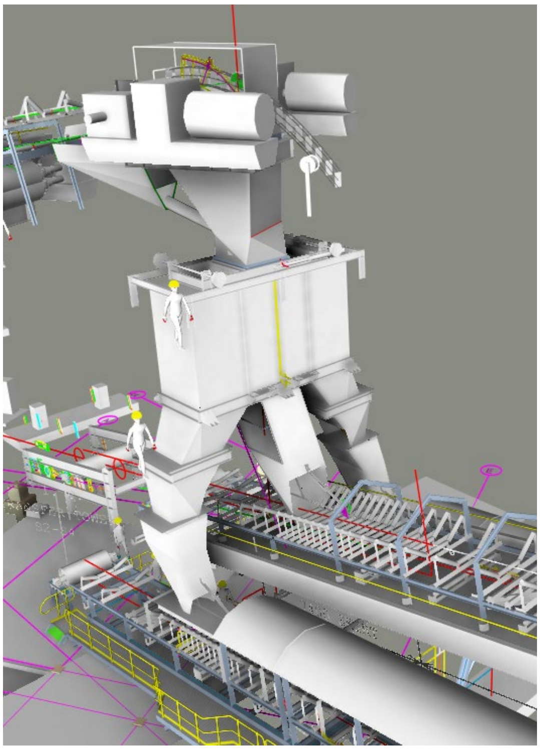
Figure 41: 3D view of proposed arrangement of RRP4 and S12A tunnel



Inloading System IL2

During FEL 3, a simpler, lower capital cost and lower whole of life cost solution to upgrading IL2 was studied in detail. This involved the upgrade of RRP2 to 8,100 tph and splitting of the 8,100 tph flow between the existing S3 and S4 conveyor systems as shown in Figure 42. The flow is then combined again on the yard conveyors as it is delivered from S3 and S4 conveyors simultaneously. The existing IL1 and IL2 Systems are rated at 5,500 tph and therefore do not require any upgrade. One significant benefit of this approach is that it eliminates several shutdowns on the transfers from IL2 to the various yard conveyors.

Figure 42: S2 Flow splitter to S3 and S4



The key elements of the upgrade include:

- Upgrade of RRP2 to 8,100 tph by operation of the existing vibrating feeders at higher amplitudes and modifications to the pit concrete and trigger locations;
- Replacement of the C2 conveyor within the RRP2 receival station with a new 2,500 mm conveyor to handle 8,100 tph;
- Upgrade existing inloading conveyor S2 to 8,100 tph and upgrade S2 drive tower to feed to existing conveyors S3 and S4, and allow for feeding to new Phase 4 conveyor S9 via new conveyor S9A

A key feature of the proposed upgrade is that train unloading would normally proceed at 8,100 tph but would automatically reduce to no less than 5,500 tph, and continue operation without delay, should one of the two inloading conveyor systems (IL1 or IL2) halt unexpectedly during train unloading.

To enable this transition to occur without stopping rail unloading operations, the S2 conveyor is proposed to have two operating speeds using a fluid coupling to achieve the speed differential. In normal, high-speed operation, S2 will operate at a ‘high-tonnage’ rate, with its feed split onto S3 and S4 which are both ‘low tonnage’ belts. However, if either S3 or S4 goes out of service, then S2 can continue to operate at the “low-tonnage” rate in conjunction with the one remaining downstream belt. To manage the issue where S2 is fully loaded at high-tonnage, but then needs to change to low-tonnage mode the S2 fluid couplings will allow the heavily loaded belt to run at low speed to run off the existing material onto the low-tonnage belt. Once empty, S2 is stopped, re-started at normal speed, and fed at the low-tonnage rate from RRP2/C2.

The Split Flow concept also allows the flow to be either re-joined at transfer to a common 8,100 tph stacking conveyor in the yard, or alternatively to be directed to two different stacking conveyors at the same time, subject to the availability of the two stackers. This type of operation could potentially deliver time savings when required to split train loads to two separate stockpile destinations to ensure coal is not over-stacked in the dynamic zone.

Alternatively, the system can be set to operate at a reduced rate of 5,500 tph via either S3 or S4 alone in cases where lack of availability of a high rate stacking path forces stacking via a stacker-reclaimer that may be capable of stacking at only 5,500 tph.

Decommissioning of Inloading System IL1

The IL1 system will not be upgraded in 8X and will be decommissioned after IL2 is returned to service by slewing the rail line from IL1 to IL2.

The scope of RRP1 decommissioning includes the removal of all mechanical and electrical equipment except the following:

- Enclosing building
- Access pit covers
- All existing access stairs
- Existing monorail beams
- Rail beams and existing grizzlies and hopper covers
- Pit and tunnel ventilation system including ductwork, registers, flashings, mechanical ventilation unit, filters and weatherproof acoustic enclosure
- Sump pump and associated piping

Steel plate covers to protect existing openings between rails will be added to make the area safe. This infrastructure will be left in place because the possible future 9X project would make use of the original RRP1 facilities.

OL1 Upgrade

The rate limitations of the outloading conveyor systems and surge bin capacities contribute to “full bin” events during ship loading. “Full bin” events impose delays on yard machines that would normally be avoided by matching outloading rates to surge bin capacities and reclaim rates.

As part of Phase 1, reclaim rates from machines in Rows 1, 2 & 3 will be increased, giving SR3A an increased reclaim rate. Additionally (as part of the NECAP program), SR2 will be replaced with a higher rate machine with a capacity equal to RL1, RL2, RL3, SR3A and SR4A. These two factors validate the increase of the OL1 rate from 7,200 tph to 8,650 tph to match OL3.

The OL1 rate increase will be achieved by speeding up Belt Feeders BF5 & 7, L5 and L7 Conveyors. Several transfer chutes will also require upgrade or replacement.

ILC modelling shows that completion of Phase 3 yields a System Capacity of 99.1 Mtpa (Table 9), including an increase of 6.4 Mtpa compared with 5.5 Mtpa in FEL 2.

Table 9 : Scope and Capacity Increment Phase 3

Phase	Description	Capacity (Mtpa)
Baseline	Phase 2	92.7
8X Phase 3	• Rail Receival Pit 4 (RRP4) and inloading system IL4 (8,100tpa) • IL2 upgrade (5,500 tph to 8,100 tph) by splitting flow to S3 and S4 conveyors • Upgrade to existing outloading conveyor OL1 to 8,650 tph	99.1

Operational impacts during implementation Phase 3

The Phase 3 works have been developed to ensure that there are no material operational impacts during the Phase 3 implementation. Shutdowns required for inloading upgrades are all expected to take days rather than weeks to complete. It is anticipated that the shutdowns can be planned to shadow normal maintenance outages.

5.4.4 Buildings and Facilities

The 8X Expansion impacts an office and ablutions facility at the Jetty Head end which is made up of temporary construction buildings. During Phase 1, a new Wharf Building will be built on the new marine structure just north of the existing facility, leaving room for car parking in place of the existing facility.

Other building works required to support 8X include a warehouse extension to cater for the additional spares as a result of 8X.

As part of the NECAP program, a new administration building will be constructed in the existing Operations Building area, to replace the existing Hilltop Building, Corporate Centre and various other buildings and facilities in the same area. Replacement of a number of these buildings was previously identified as part of the 8X Expansion scope.

5.4.5 Capital Cost of 8X

The capital cost estimate for 8X was revised during FEL 3, as summarised in Table 10. The estimate is an estimate at completion including forward escalation with an assumed start date of April 2024 and excludes the cost of FEL Studies and Interest During Construction (IDC).

The estimate was prepared in a manner consistent with an expected estimate accuracy range of ±15% within a 90% confidence interval, in accordance with the Standard Underwriting Agreements with Expansion Parties.

A Quantitative Risk Analysis (**QRA**) was conducted in February 2023 by specialist risk management consultancy Broadleaf Capital, in conjunction with DBIM and Aurecon personnel. The QRA determined that the actual P10 to P90 estimate range is -2.7% to +15.7% from the base cost.

For the purposes of financing the project, the estimate includes escalation and contingency to the P95 level for all phases, similar to the approach taken for all NECAP proposals.

The estimate was based on concurrent execution of all three phases, which provides the most cost effective project delivery strategy. If less than 14.9 Mtpa is taken up by unconditional take-or-pay contracts, then the capital cost estimate will need to be adjusted accordingly.

Table 10: 8X Capital Cost Estimate

Phase & Scope		Gain (Mtpa)	Total (Mtpa)	Cost ($m)
1	New Shiploader SL4 and Outloading Optimisation	4.4	88.6	466
2	Stockyard Augmentation Project for Rows 1, 2 & 3	4.1	92.7	289
3	New Inloading System IL4 & RRP4, and upgraded IL2 & OL1	6.4	99.1	614
Total		**14.9**	**99.1**	**1,369**

5.4.6 8X Schedule

The 8X expansion comprises 3 phases which allow for the phases to be executed sequentially or concurrently depending on demand and commercial outcomes. DBI retains significant optionality around how many phases (if any) it undertakes. If developed concurrently, the phasing becomes less relevant – the order of completion changes slightly and capacity that becomes available is no longer neatly defined by 3 capacity increments. During FEL 3 the schedule was further refined to identify the steps in which capacity becomes available. A high-level FEL 3 summary schedule is shown in Figure 43. The potential timing of any commencement and scheduling of the 8X Project remains subject to a number of factors including commercial negotiations with Access Seekers, formal unconditional commitment by Access Seekers to 8X capacity and a final investment decision by DBI.

Figure 43: Possible 8X Summary Schedule

ID	Activity	Start	Finish
1	**General**	**Jan-23**	**Sep-28**
2	Master Plan 2023 (based on FEL 3)	Jan-23	Jun-23
3	Financial Investment Decision	Apr-24	Apr-24
4	FEL 4 engineering & project delivery	Apr-24	Sep-28
5	**Phase 1 - SL4 and Outloading Optimisation**	**Sep-24**	**Feb-27**
6	Outloading optimisation	Sep-24	Jun-25
7	New L18 coveyor	Aug-25	Dec-26
8	New shiploader SL4	Oct-25	Feb-27
9	**Phase 2 - Stockyard Augment Project (SAP)**	**Oct-24**	**Jun-27**
10	SAP panel fabrication	Oct-24	Mar-26
11	Bund installation works	Aug-25	Oct-26
12	SAP Row 2 and ST1A/S5 works	Apr-26	Sep-26
13	SAP Row 3	Sep-26	Feb-27
14	SAP Row 1 and RL3/R2 works	Feb-27	Jun-27
15	**Phase 3 - New IL4 and IL2/OL1 upgrade**	**Feb-25**	**Sep-28**
16	OL1 upgrade	Feb-27	Mar-27
17	New IL4 & RRP4	Feb-25	Apr-27
18	IL2 upgrade	Apr-27	Sep-28

5.4.7 Effect of 8X on O&M Costs

During the technical FEL 3 studies, the Operator re-assessed the incremental additional Operation and Maintenance (**O&M**) costs that would be applicable for each of the phases of 8X. The study identified the one-off project costs that the Operator will incur during the development of 8X as well as the long term effect on O&M costs of the terminal. Where appropriate, as defined by the Operations and Maintenance Contract (**OMC**) the one-off project costs are included in the 8X capital estimate. The incremental O&M costs provided by the Operator during FEL 3 are shown in Table 11. The Operator estimates that the additional O&M cost for the full three phases of 8X will be $10.22m per annum which, when spread over the full 99.1 Mtpa available at completion of 8X will significantly lower the Handling Charge per tonne for all Users of DBT.

Table 11: Incremental O&M Costs associated with 8X ($m)

Phase	1	2	3	Total
Incremental O&M Costs	4.09	2.23	3.90	10.22

5.4.8 8X Expansion Ruling

In March 2021, DBIM submitted an application to the QCA for an Expansion Ruling on 8X. Following a period of reviews and stakeholder consultation, the QCA issued its final determination and ruling in November 2021 that the 8X expansion should be Socialised, that is, the new facilities due to the expansion should form part of the existing terminal.

In the event of material changes to the circumstances, scope, cost and schedule of the expansion, the QCA may reconsider its ruling. DBIM is required to apply for another Expansion Ruling as part of the Capacity Expansion Application process, to allow the QCA to confirm whether the changes from its original ruling are sufficiently material to warrant a new ruling.

In DBIM's view, the changes do not materially affect the QCA's original justification for its ruling, and Socialisation remains appropriate. This is because the key factors underlying the QCA's original ruling have not changed, specifically:

- 8X is expected to operate in a wholly integrated way with the existing terminal
- 8X is expected to significantly reduce operation and maintenance costs on a per tonne basis
- 8X is expected to reduce ongoing NECAP costs
- 8X is expected to reduce risks to existing Users
- 8X is expected to reduce future throughput losses through increased availability, reliability and flexibility.

5.5 8X Expansion – Further Phase

The 8X expansion recommended in this Master Plan is a 3-phase expansion that will increase the System Capacity of DBT to 99.1 Mtpa, thereby providing the 14.9 Mtpa of additional capacity consistent with the requirements of the Expansion Parties and the approvals already in place.

Consequently DBIM adjusted the scope and schedule of the recommended expansion.

DBIM notes that the objective of the 8X expansion was to maximise the system capacity available in the existing terminal footprint, which the ILC confirmed as part of the FEL 3 technical studies to be 102.3 Mtpa, or 18.1 Mtpa more than the current system capacity of 84.2 Mtpa. This means 3.2 Mtpa remains to be utilised after the recommended 3-phase expansion is completed.

However, in the event that sufficient demand exists after the 8X expansion to justify the remaining scope, then DBIM will consider undertaking further studies at that time, subject to approvals. Until then, no further work will be done on development of the further phase.

Table 12: Scope and Capacity Increment for 8X Final Phase

Phase	Description	Capacity (Mtpa)
Baseline	Phase 3	99.1
8X Further Phase	Zone 4 including: • Completion of second half of Row 8 stockyard development • New ST5 and Conveyor S9 on Bund 7 to the west of Row 8 • New RL2A with a longer boom & different slew centre, replacing RL2 • Western Access Gate & Road Stockyard and outloading upgrades including: • Upgrade of stacker ST2 and conveyors S6 & S6A • Upgrade of outloading conveyors OL2 to 8,650tph, including SL2 • Upgrade of R3 conveyor to accommodate higher rate SR2/RL4	102.3

Phase 4 involves completion of the existing stockyard Row 8 to enable both Rows 7 and 8 to operate together as a fourth operating zone (**Zone 4**). Zone 4 would be utilised for storage of remnants and selected high-throughput coal types in dedicated stockpiles.

The project includes the following key components:

- Extension of Row 8 and the provision of a vertical walled bund (Bund 7) on the western side of the stockyard.
- Relocation of hybrid stockpiling (currently in use throughout the yard) with storage of selected high-volume products in dedicated piles in Zone 4 and another in a dedicated pile in Zone 2.
- Provision of an independent stacking path to Row 8 via the new Bund 7 and a new Stacker ST5 to improve the availability of the Zone 4 reclaim machines to attend to reclaim tasks.
- The replacement of the existing Reclaimer RL2 with a new Reclaimer RL2A with different geometry and a longer boom to ensure that it can reach all coal stored in Row 8 after the expansion.
- The relocation of the existing Western Site Access Gate and the Western Access Road.

The above aspects of the Zone 4 Project are illustrated in Figure 44 below.

Figure 44: Extent of Works for Zone 4

The Zone 4 project delivers an increase in stockyard storage capacity and some minor improvements in stacking and reclaiming efficiency.

Like SAP, the Zone 4 expansion is not focused on provision of more coal handling equipment but instead focuses on increasing the storage volume available for cargo assembly and hybrid operations. This additional volume delivers an efficiency gain in the existing coal chain by allowing more simultaneous cargo builds in the stockyard at any one time. Building more simultaneous parcels allows for more mine loadouts to be accessed on any day, reducing the peaking congestion on various parts of the rail network. The infrastructure provided by the Zone 4 expansion will operate in a wholly integrated way with the existing facility, meaning that existing Users will necessarily have the same access to the facilities built as part of this expansion as expanding Access Seekers.

The proposed increase in the DBT stockyard storage volume would be achieved by an increase in width and length of row 8. The upgraded row 8 will feature a high retaining wall on the western side to allow greater storage efficiency than has been achieved in any other existing walled row.

The increased stockyard volume also facilitates an important change to the efficiency of hybrid stockpiling. In the context of the Zone 4 expansion project, the increased volume in Row 8 allows two of these dedicated product stockpiles to be moved out of the cargo assembly zones and into rows 7 and 8, coexisting with the remnant stockpiles. This allows rows 7 and 8 to be treated as a 4th stockyard Zone that will handle the two dedicated high-throughput coal brands as well as all remnants. The products in the Zone 4 dedicated piles are then not required to be handled via any of the other three cargo assembly zones or outloading systems. Coal from Zone 4 can then be proportioned across the 3 outloading systems in a way that allows Zone 4 to act as an extension, at various times, of each of the other three zones.

The effective storage ratio for the cargo assembly portion of throughput is increased and the increase in storage ratio is distributed more evenly across the stockyard zones than can be achieved prior to implementation of the Zone 4 project.

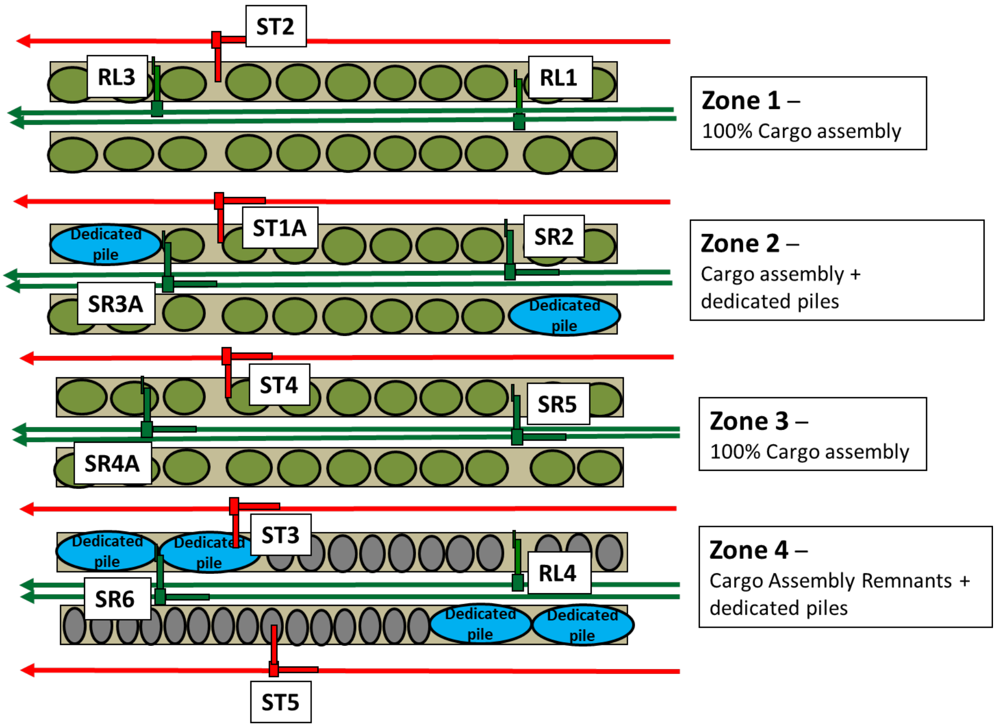
Minor improvements in overall stacking and reclaiming performance are also achieved in the Zone 4 Project via:

- replacement of the existing RL2 reclaimer with reclaimer RL2A which will feature a longer boom. RL2A will achieve higher average reclaim rates due to its ability to reclaim from wider stockpiles
- addition of a new high capacity stacker ST5 to facilitate independent stacking into row 8 without disrupting reclaim operations

These equipment improvements contribute to the overall throughput capacity gain that will be achieved from the Zone 4 project.

The stockpile areas are proposed to be utilised as shown below (Figure 45).

Figure 45: DBT Stockyard following Zone 4 expansion



Use of the Zones can be described as follows:

- Zone 1 – This zone remains a cargo assembly zone.
- Zone 2 – This zone remains largely as a cargo assembly zone but will also accommodate two dedicated stockpiles with total 120 kt capacity for a high throughput coking coal (shown in blue). This is expected to handle most of the total throughput of this coal type.
- Zone 3 – This zone remains a cargo assembly zone.
- Zone 4 – This zone, including Rows 7 and 8, was previously used only as a storage area for dedicated remnant stockpiles to support the cargo assembly operation but after 8X the increased capacity will allow some large dedicated storage piles to be handled in this zone.

The Row 8 development within the Zone 4 project achieves a higher storage volume potential in Row 8 in comparison to other existing walled rows on the site. This occurs because of the increased height of the wall on the western side of Row 8 in comparison to the wall height on other rows at DBT. This benefit is able to be utilised by the new large dedicated storage piles where significant length savings are achieved. Savings in stockpile length for the smaller remnant stockpiles are also possible, however the benefit is not as great as it would be for the larger, dedicated stockpiles. Further volume benefits are also achieved in Row 8, because being the western most stockyard row, there is no requirement for cross drains in Row 8 and no consequent loss of stockpile space.

The ILC modelling shows that Phase 4 adds 3.2 Mtpa, taking the System Capacity at completion of the full 8X project to 102.3 Mtpa (Table 13).

Table 13: Scope and Capacity Increment Phase 4

Phase	Description	Capacity (Mtpa)
Baseline	Phase 3	99.1
8X Final Phase	Zone 4 including: • Completion of second half of Row 8 stockyard development • New ST5 and Conveyor S9 on Bund 7 to the west of Row 8 • New RL2A with a longer boom & different slew centre, replacing RL2 • Western Access Gate & Road Stockyard and outloading upgrades including: • Upgrade of stacker ST2 and conveyors S6 & S6A • Upgrade of outloading conveyors OL2 to 8,650tph, including SL2 • Upgrade of R3 conveyor to accommodate higher rate SR2/RL4	102.3

Operational impacts during implementation Phase 4

The operational impact from Phase 4 is not expected to be significant. The existing operational areas in Row 8 are currently used for remnant management. There will need to be a width reduction in the operational stockpile width while Bund 7 is constructed. This will impact on the reclaim rate from the remnant stockpiles which forms only a small part of each cargo. Currently, the reach of SR6 is approximately 9m longer than RL2 in Row 8. Limiting the western toe of the Row 8 stockpiles to RL2’s reach is likely to be sufficient space to allow safe construction of Bund 7.

5.6 9X Project

The 9X Expansion comprises four phases which could increase terminal capacity to 137.3 Mtpa. The 9X Expansion includes the addition of a new stockyard and two new berths. These components cannot be delivered within the existing terminal footprint. As a result, DBT would require additional land, in addition to capital dredging. The requirement for capital dredging introduces further challenges and is anticipated to require complex environmental approvals.

Capacity on the Goonyella rail system will need to be expanded to accommodate the 9X Expansion. In a previous review, Aurizon Network identified that capacity on the trunk route between Hatfield and Yukan was limited, and that additional capacity would require triplication and other upgrades.

The proposed 9X Expansion is outlined in Table 14.

Table 14: 9X Expansion - Scope by Phase

Scope			Gain (Mtpa)	Capacity (Mtpa)	Cost ($m) @ P50
Phase		Description			
9X	1A	• 4th Rail loop to connect IL4 + Other rail loop siding mods • IL1 recommissioned to the 8X footprint (Upgrade of RRP1 and first conveyor segment to Louisa Creek transfer point is optional) • New inloading stream to connect to IL1 and IL4. • New stockyard – 2 Rows, 2 Reclaimers, 2 Stackers – with overall length dependent on operating mode • New OL4 on existing jetty structure to feed L18 only	8.5	110.8	1500
	1B	• 1 X New inloading stream to connect to IL1 and IL4 • Additional 2 rows of stockyard with 1 additional reclaimer and 1 additional stacker	10.4	121.2	460
	2	• Additional OL onshore conveyor link from Louisa Creek to existing OL1, OL2, OL3 • 1 new stacker and 1 new reclaimer • New Berth 5, extend L17 to allow SL3 to work Berth 4 and Berth 5	5.9	127.1	670
	3	• New SL5 & wharf conveyor L27, provide transfer from OL4. • Extend L18 to allow SL4 to work Berth 4 and return to task of backing up SL1, SL2, SL3 for the 8X yard. SL4 also backs up SL5 when available.	6.0	133.1	210
	4	• New Berth 6 & extend L17 to allow SL3 to move to Berth 6 • Extend L18 to allow SL4 to move to Berth 5 • Extend L27 to allow SL5 to move to Berth 4 providing dual berth capacity to Louisa Creek	4.2	137.3	530
Total			**35.0**	**137.3**	**3,370**

It is not currently possible to predict how the new stockyard might be utilised within the expanded terminal operation. There are 2 main options for stockyard strategy which require different configurations.

The stockyard could be either:

- Operated as an integrated part of the existing facility to allow an extension of existing cargo assembly operations. This would suit incremental growth in throughput of the existing coal types combined with the addition of new coal types. All products could be loaded onto vessels in any combination.
- Operated as a stand-alone terminal that would be dedicated to handling a select group of coal types. Following this approach, coal stored in the 9X stockyard would not be able to be loaded onto vessels already loading from the existing stockyard. This application would tend to be more favourable to higher throughput coals stored in dedicated storage stockpiles.

Considering these two potential operating approaches, a number of configuration options are possible. These were documented in more detail in Master Plan 2018. They are highly dependent on the commercial arrangements that underpin such an expansion and would be further developed in any future feasibility studies that include 9X.

Offshore configuration

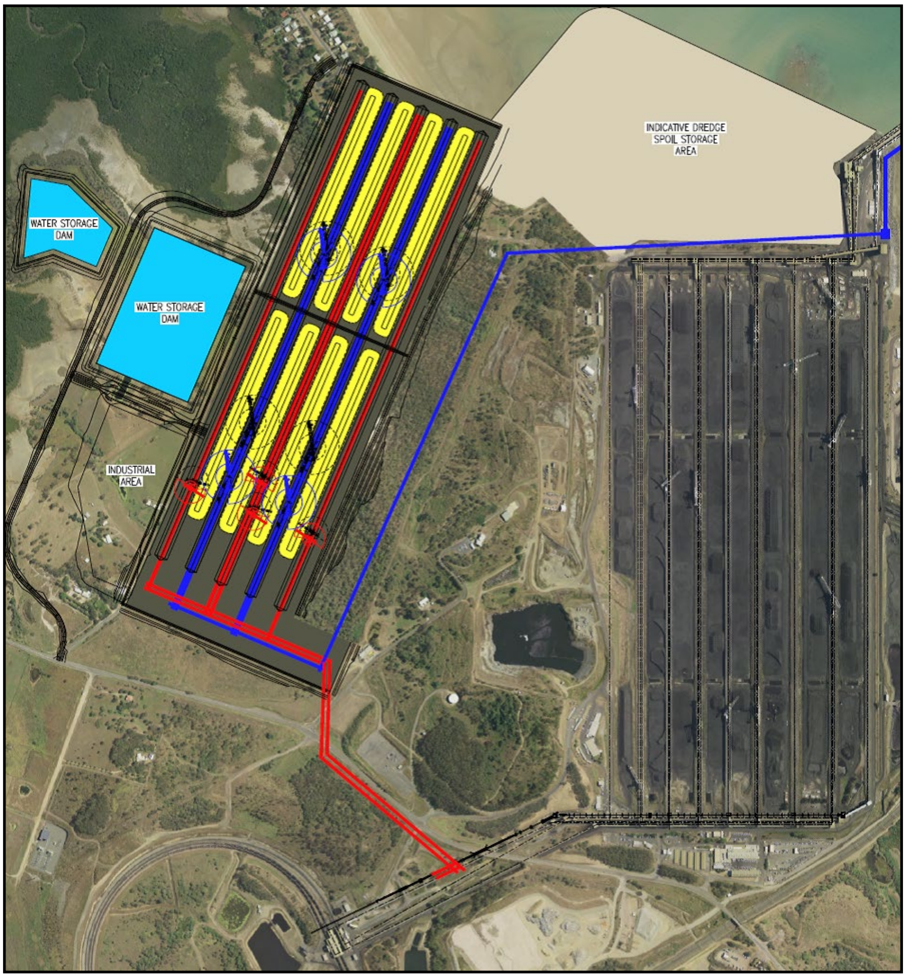
It is proposed that the new OL4 outloading string would load to vessels via shiploader SL3, which would operate on new Berths 5 and 6. The travel range for shiploader SL4 would be increased to include Berth 4 at that stage.

Physical arrangements for stockyards and conveyors

Stockyard layouts have been prepared to demonstrate how the configuration options could be accommodated within the Louisa Creek site. Two potential site arrangements have been prepared including a short and long stockyard option.

The standalone terminal operation at Louisa Creek would best suit the long stockyard arrangement.

Figure 46: Long stockyard arrangement



The outloading conveyor arrangements need to be varied according to the required level of integration between the Louisa Creek stockyard and the existing DBT stockyard, and the way in which the Louisa Creek stockyard will be utilised.

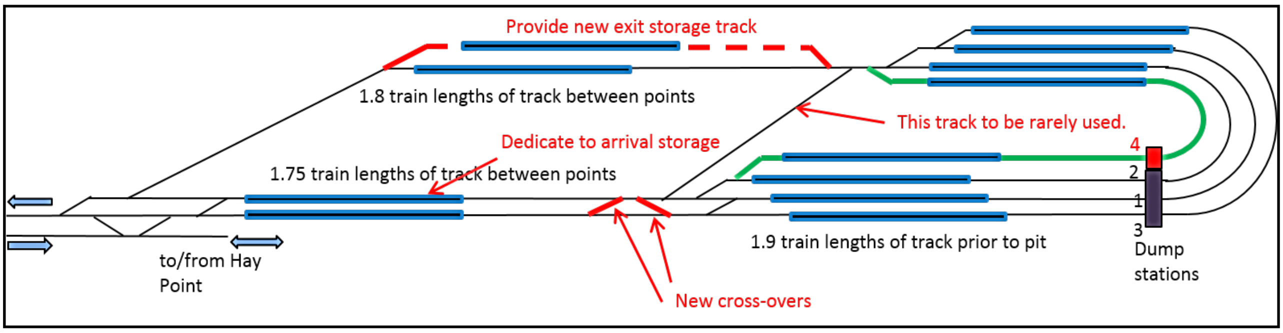
The single outloading conveyor string shown for the long stockyard in particular is suitable in the case of Louisa Creek being developed as a virtual standalone terminal, assuming that 8X operations continue unchanged within the existing stockyard. Any other case will require the construction of some additional outloading conveyors.

5.7 Rail Infrastructure

The rail track infrastructure in the vicinity of the terminal does not form part of the facilities managed by DBIM. The current rail track arrangements are understood to contribute to delays in the process of directing full trains to dump stations. Delays have also been observed in clearing empty trains from the loop after unloading to allow uninterrupted unloading of subsequent trains. Some relatively minor rail track improvements would likely address these issues and provide a throughput gain.

Potential modifications that would be expected to avoid train delays and improve utilisation of the dump stations are indicated in red in Figure 47 below. It is proposed that these improvements would be carried out at the time of establishing RRP4 during the 8X expansion i.e. when RRP4 is fed from a diverted loop 2 and prior to establishment of the fourth rail loop. The fourth rail loop would not be developed until the 9X expansion.

Figure 47: Proposed 8X rail loop modifications shown in red as proposed to be constructed with the IL4 dump station. The fourth rail loop in green would be constructed only at the later 9X stage.



5.8 Potential future transition of DBT

DBT is well positioned as the world's largest metallurgical coal export facility with demand expected to remain resilient over the longer term under a range of climate scenarios. DBIM retains significant expansion optionality to accommodate growth in metallurgical coal exports from the Bowen Basin.

Rapid growth in the development of green steel around the world may present DBT with a transition opportunity. Following the signing of a funding agreement with NQBP, Brookfield Infrastructure Group (Australia) Pty Ltd and ITOCHU Corporation in February 2022, the project consortium commenced initial feasibility studies aimed at understanding the potential for development of a regional hydrogen hub within the vicinity of existing terminal infrastructure. In 2022, DBI and its three consortium parties jointly funded a market study which highlighted the rapid growth in demand expected for green hydrogen and its derivatives over the period to 2050, and funded further analysis of possible green energy carriers for use at DBT. The output of this work suggests that DBT's infrastructure may be suitable for the export of a number of new energy products, with the shipment of ammonia (as a carrier of liquid hydrogen) currently considered the most suited to the existing terminal infrastructure. Further engineering and assessments are planned in 2023.

6 Alignment with Sustainability Framework

Overview

In 2020 DBT released a Sustainability Strategy – 'Handling with Care' – a joint commitment of DBIM and the Operator.

DBT's sustainability principles have been defined to underpin decision-making and future planning, to balance core business goals with corporate responsibilities. Key themes of the Strategy include a focus on People, Environment, Business Performance and Community & Partnerships as seen in Figure 48.

Figure 48: DBT Sustainability Strategy - Key Themes

In 2022, DBIM completed its second detailed Materiality Assessment involving both internal and external stakeholders. More than 300 stakeholder responses were received. The 2022 MA tested 28 material issues using both online surveys and face-to-face interviews.

Analysis of the data revealed that the highest ranked issues were within the People and Environmental pillars, with the highest priority issues being Health, Safety and Wellbeing; the Great Barrier Reef World Heritage Area, Water Management and Dust and Noise. Stakeholders placed a higher priority on addressing climate change, renewable energy transition and greenhouse gas emissions when compared to the 2019 survey.

As a result of the second Materiality Assessment process, and in line with continuous improvement, DBI has worked with the Operator to further integrate targeted sustainability initiatives through various joint strategies.

Alignment of 8X pathway with DBT Sustainability Strategy

In alignment with DBI's sustainability principles and the overarching DBT Sustainability Strategy, a specific project-based 8X Sustainability Framework has been developed to guide the design, construction and integration of the project into DBT's operations and governance.

The framework includes:

- Climate Change and Resilience
- Water
- Impact Management
- Stakeholders

- Cultural Heritage
- Workforce
- Procurement
- Resources, Materials and Waste
- Communication and Education

A whole-of-life approach has been used to develop the framework with specialists across a range of disciplines involved including financial, risk management, governance, engineering, environmental planning, sustainability and project management.

6.1 Sustainability Reporting

DBI has released two Sustainability Reports since 2021. These reports can be found on the DBI website at dbinfrastructure.com.au.

6.2 Alignment with United Nations Sustainable Development Goals (SDG) Framework

In line with the Sustainability Strategy, the Terminal Master Plan has included sustainability considerations. Key principles upon which the plan has been built are included in Table 15.

Table 15: Alignment of Master Plan 2023 with DBT Sustainability Strategy

Principles	Key Themes	Master Plan 2023	Aligned with UN SDGs
Drives Land Use Efficiency / Efficient Use of Resources	Business Performance	• The 8X Project has been specifically designed to be within the existing terminal footprint and strategic port land already allocated to DBIM. • The 8X project has increased infrastructure capabilities throughout the terminal process - increasing the overall efficiency of the terminal footprint.	
Facilitates Economic Growth	Business Performance	• The 8X Project will facilitate additional exports - increasing economic prosperity in the region through increased employment opportunities for local suppliers and labour hire groups through construction and operations.	
Ensures Resilient & Adaptive Infrastructure	Business Performance	• The design of project infrastructure has considered and studied in detail existing operational and coastal marine environment learnings from historical operations. • Climate change considerations (ie. adaptation and resilience) have been examined. • Whole of Life costs have been used to help shape and instruct infrastructure design.	
Manages the 'Port-Township' Interface	Partnerships	• Robust consideration of adjoining rural residential and neighbouring residential areas and protection of port buffers have been focus points of the design of the 8X project - in particular with regards to potential air quality and noise impacts. • Significant consultation with community representative groups, elected representatives (State and Commonwealth) and the Mackay Regional Council has been undertaken to ensure the expansion pathway is well understood. See Chapter 8 for more detail.	

Principles	Key Themes	Master Plan 2023	Aligned with UN SDGs
Includes Early Consideration (& subsequent protection) of Environmental Values	Environment	• Early consideration of National and State Matters of Environmental Significance in the 8X pathway including detailed assessment of ecological values and coastal processes / marine values (ie. terrestrial and marine based values assessment). • The 8X pathway has avoided any dredging and/or significant disturbance to marine areas.	6 CLEAN WATER AND SANITATION 13 CLIMATE ACTION 14 LIFE BELOW WATER 15 LIFE ON LAND
Identifies & Protects Critical Supply Chains	Business Performance Partnerships	• The Master Planning process has considered efficiency gains across surface transport supply chains - rail / sea channels etc	17 PARTNERSHIPS FOR THE GOALS
Promotes Stakeholder Engagement, Inclusiveness & Transparency	People Partnerships	• Extensive Consultation undertaken as part of the Master Planning and 8X Project Process (see Chapter 8 for more detail)	17 PARTNERSHIPS FOR THE GOALS
Ensures Port Safety & Security	People	• Engineering Design has been developed in accordance with relevant standards & regulations • Safety remains the key focus for terminal operations.	3 GOOD HEALTH AND WELL-BEING

Climate Change

DBIM acknowledges the Intergovernmental Panel on Climate Change (**IPCC**) Special Report on global warming[26] and continues to support the objective of finding a pathway to limit global warming to well below 2°C. DBIM is committed to limiting the impact from its own operations and to assisting its partners to reduce their emissions, where feasible.

DBIM has also committed to a target of achieving net zero Scope 1 and Scope 2 greenhouse gas emissions from DBT by 2050.

DBIM has also reported its future priorities to include:

- implementing its roadmap to Net Zero Scope 1 and Scope 2 emissions for DBT over time;
- setting its Scope 3 emissions boundary;
- using its climate change physical risk assessment to monitor and plan for potential impacts to DBT;
- integrating transition risks and opportunities into corporate decision-making and strategy; and
- further improving its Task Force on Climate-related Financial Disclosures (**TCFD**) alignment in future disclosures.

Since the 2021 Master Plan, DBIM has advanced Climate Risk Assessment work by undertaking detailed transition and physical risk assessments. The results from the physical risk assessment indicate that overall there is low risk to the terminal from the identified climate hazards. Four of the risks identified will require consideration, namely: coastal inundation, soil movement, riverine flooding and surface water flooding. Where risks may materialise, they are localised to specific areas of the DBT site. Further details on the risk assessments can be found in the 2022 DBI Sustainability Report.

Water Management

One of the principal aims of the Reef 2050 Plan is a continued focus on improving water quality throughout the GBRWHA and control of inflows into the Great Barrier Reef marine environment. As part of robust

[26] IPCC, 2018 Special Report: Global Warming of 1.5°C.

terminal master planning, DBIM has over the past several years, actively invested in water management infrastructure across the terminal environs to improve both water security and water efficiency. Equally, the investment in significant water management infrastructure such as the series of terminal dams – including the Rail Loop Dam which increases the ability of the terminal to significantly reduce outflows into the surrounding marine environment. For a full description of water management infrastructure refer to Section 2.2.5.

Monitoring of water quality also forms part of the Environmental Licence conditions in place for the terminal from the Department of Environment and Science (**DES**).

Geopolitical & Social Influences

Accelerating stakeholder expectations regarding robust governance systems and whole-of-business sustainability considerations have continued in recent years.

Within the sphere of control of the DBT is the need to ensure all operations are appropriately focussed on relevant people, environment, business & prosperity, and community & partnership issues. DBI is currently working with the Operator to update and refresh the DBT Sustainability Strategy to appropriately address these themes.

In terms of social influences, existing consultation undertakings provided by DBIM, the Operator and NQBP ensure that the community is adequately aware of terminal issues, trends and planned activities including expansion options. Refer to Chapter 8 for more information regarding the consultation activities undertaken in the preparation of this Master Plan.

7 Environmental Values & Adaptive Management Approach

7.1 Overview

Over the past several years, stakeholder expectations have accelerated as the global community looks at Australia's response to increase environmental protection and management of the GBRWHA in which DBT is located.

DBIM's robust governance approach to environmental management at DBT ensures compliance with all relevant Australian, Queensland and local Government laws and regulations.

The Australian Government is responsible for the GBRWHA working in partnership with the Queensland Government. The Reef 2050 Plan is the Australian and Queensland Government's overarching framework for protecting and managing the Great Barrier Reef to 2050.

The Queensland Government is responsible for the protection of Queensland waters and accordingly committed to a number of Reef 2050 Plan initiatives relating to port development. The *Sustainable Ports Development Act 2015 (Qld)* (**Ports Act**) establishes a legislative framework to balance the protection of the Great Barrier Reef with the development of the state's major bulk commodity ports in that region. The Act implements the Queensland Government's key port-related actions of the Reef 2050 Plan.

DBIM recognises that operating in the GBRWHA requires robust environmental systems and proactive, adaptive management.

Best practice environmental management within the coastal environment, and particularly within the GBRWHA requires two fundamental considerations:

- Detailed consideration of existing environmental values as part of terminal and expansion planning – ensuring that environmental values are examined and managed using the well understood mitigation hierarchy of avoidance, mitigation and offsets; and
- Ensuring robust Environmental Management Frameworks are in place for the ongoing management of operations consistent with the requirements of existing and renewed Environmental Authorities for terminal operations and construction activities.

The master planning process for priority ports is being conducted by the Queensland Government in accordance with the Ports Act and the Reef 2050 Plan. This provides for greater transparency of Environmental Management Frameworks and a stronger focus on port protection measures including appropriate environmental buffers.

The draft Port of Hay Point/Mackay Master Plan and draft port overlay were released for public consultation in October 2022, and stakeholder submissions concluded in January 2023. DBIM supported the process and regularly engages with NQBP and the State.

This Master Plan outlines the regulatory approvals matters associated with the 8X pathway – and a summary of the environmental assessment work that was carried out as part of the environmental planning regulatory assessment phase.

7.2 Proposed 8X Pathway Environmental Planning Regulatory Approvals

7.2.1 Australian Government Matters

The *Environmental Protection and Biodiversity Act 1999* (Cth) (**EPBC Act**) is the key Commonwealth legal framework to protect and manage nationally and internationally important ecological communities and heritage places.

In line with a robust approach to project governance, the proposed 8X pathway was 'referred' to the Commonwealth Minister for the Environment, to determine if the proposal required assessment under the EPBC Act.

As part of this submission, extensive environmental assessments were undertaken focusing on potential marine, ecological, air quality and acoustic impacts. Comprehensive stakeholder engagement was undertaken at local, State and Commonwealth levels.

In February 2021, the Commonwealth advised that under the EPBC Act, the proposed development was a ‘Non-Controlled Action’ and therefore did not require any further assessment (ie. EIS) at the Commonwealth level.

7.2.2 Queensland Government Matters

Approvals for compliance against key State environmental and social legislation applicable to the 8X pathway was carried out.

Following extensive environmental technical work, strategic planning assessment, and comprehensive stakeholder consultation, the key State-based regulatory applications were lodged and subsequently approved including:

Port Development Application

In accordance with the *Transport Infrastructure Act 1995* and *Planning Act 2019* a ‘Port Development Application’ was required, which comprehensively addressed a range of environmental planning issues, including the ‘NQBP Sustainable Port Development Guidelines’.

Following detailed assessment by NQBP and relevant state agencies, formal approval for the 8X project was granted in August 2022.

Operational Works (Tidal Works) Application

In accordance with the *Coastal Protection and Management Act 1995* and the *Planning Act 2019,* an Operational Works (Tidal Works) Application was required. This addressed the proposed marine works (behind existing Berth 3) in phase 8X-1 of the project.

This assessment was undertaken by NQBP, the Department of Environment and Science and Maritime Safety Queensland.

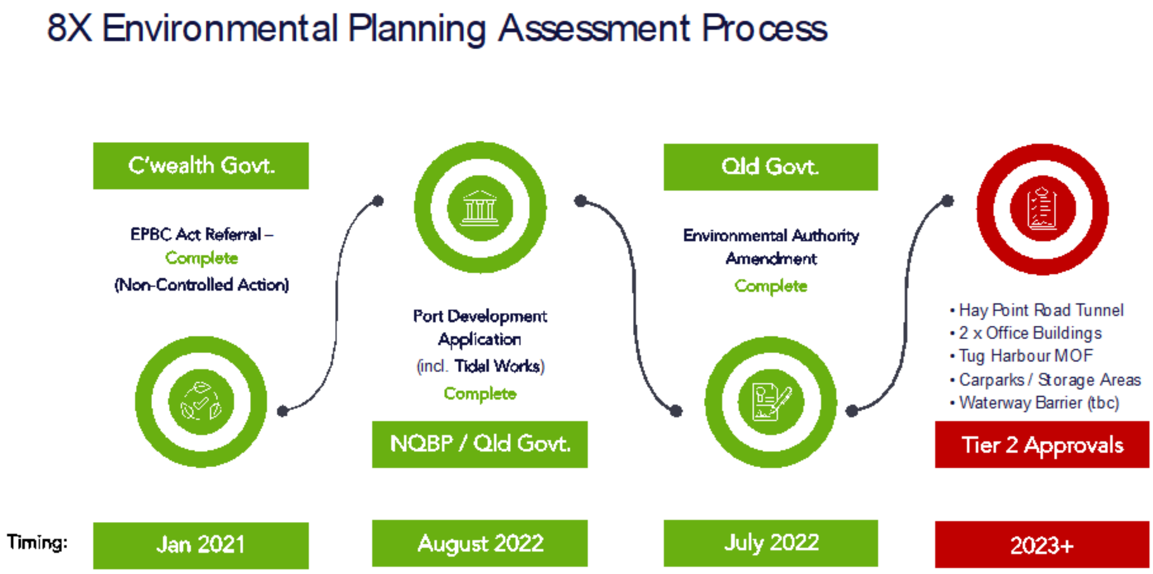
Following detailed assessment by NQBP and relevant state agencies, formal approval for the 8X project was granted in August 2022.

Environmental Authority Amendment Application

In accordance with the *Environmental Protection Act 1994* an Environmental Authority Amendment Application was required for the existing Environmental Authority (EPPR00504513) held by the Operator for ERA50(2) Bulk material handling & ERA63(1)(b)(ii) Sewage Treatment. Following detailed assessment by DES, including consideration of additional technical information relating to the extent of proposed ‘disturbance areas’, formal approval for the Environmental Authority Amendment was granted in July 2022. The following environmental authorities are now held:

- The Operator now holds an Environmental Authority (EA) (Permit EPPR00504513) which authorises the undertaking of ERA 50 Bulk Material Handling (up to 99.1 Mtpa) and ERA 63 Sewage Treatment (more than 100 but less than 1500 Equivalent Persons design capacity); and
- DBIM holds an EA granted on 27 April 2015 which authorises the undertaking of ERA 16 Extractive Activities (extracting and screening, other than dredging of more than 100,000 t but not more than 1,000,000 t in a year) across the terminal site (Permit EPPR02825115). The EA authorises the undertaking of blasting as part of the extractive activities.

A summary of the environmental planning assessment process can be seen in the figure below:



A number of 'Tier 2' approvals will be required closer to the time of development of the 8X project.

8 Stakeholder Consultation

8.1 Public Consultation Process

Ongoing and consistent stakeholder engagement will be critical for enduring success of the Master Plan pathway. The following consultation forums have been in operation for several years:

8.1.1 Community Reference Group

The Port of Hay Point Community Reference Group (**CRG**) is facilitated by NQBP and has been a critical link between DBT and the community. Membership of the CRG currently includes representatives from the following groups:

- NQBP (including the CEO as chair)
- Mackay Regional Council
- Local Business
- Yuwi Aboriginal Corporation
- Aurizon
- BMA
- DBCT P/L
- DBIM
- Local community representatives from Louisa Creek, Timberlands, Half Tide, Salonika Beach, McEwans Beach, and Fenechvale/Droughtmaster Drive.

The CRG discusses a wide range of local concerns and is kept abreast of general developments at DBT and Hay Point. This forum provides an ongoing opportunity to ensure the community is well informed about DBT issues that affect port stakeholders. In turn, DBIM and DBCT P/L are able to consider and gauge general community concerns as part of the ongoing DBT planning process. The CRG Terms of Reference is available on NQBP's website together with minutes of meetings and copies of presentations given during the meetings.

8.1.2 Community Working Group

In addition to the CRG, DBCT P/L facilitates the Community Working Group (**CWG**). This group is represented by community members, local government, DBCT P/L, the local State member of parliament and DBIM. The primary goal of the group is to facilitate open two-way communications that enhance understanding of issues specifically associated with the terminal and to build trust between the members.

Environmental performance remains an important consideration for the community, and DBIMs involvement in the CRG and CWG ensures community relations are maintained and that community concerns are heard and acted upon.

DBIM recognises that potential expansion projects may create additional community pressures that are not related to the terminal's operations. Accordingly, DBIM takes an active role with the community by promoting stakeholder knowledge of future potential expansions, such as the 8X pathway, by giving progress updates in these two forums.

CRG meetings are typically held every three months and CWG meetings are held every two months. Since mid-2014, DBIM has regularly updated these forums on current and future projects. Current and future projects may include projects undertaken as NECAP works, expansion projects contemplated by the Master Plan, and feasibility studies. Both the CWG and the CRG have been kept abreast of the full suite of projects contained in this Master Plan.

Expansion Planning Updates on the potential 8X pathway have been regular with detailed presentations provided prior to and during the regulatory assessment processes during 2021 and 2022.

8.2 Community Engagement Strategy

The primary objective of a community engagement strategy (**CES**) is to assist in the provision of a stable social operating environment for the business and to allow DBT to expand to meet industry demand. DBIM's community engagement strategy is based on the following:

- Informing and educating the community regarding the terminal's operating philosophy and activities including values, history, commitment to sustainability, security, among other things.
- Working to continually improve relations with the immediate community through open and successful community engagement and relationship building.
- Proactively strengthening key stakeholder relationships outside the immediate community.
- Effectively and efficiently managing complaints and issues.
- Promoting greater integration/interdependence between the community and the terminal over the long term.

A multi-faceted approach to Community liaison has been adopted, as no single plan, including attendance at the CRG or CWG meetings, can satisfy all of the expectations of various community groups and individuals.

Typical responsibilities of this liaison role include the following:

- Meet and greet activities, including working with local schools and TAFE colleges, managing site tours, visits and handouts. This forms an integral part of the community information and education campaign.
- Interaction with the CRG and CWG local advisory group.
- Production of written material on how the terminal operates, its values, history, environmental initiatives, etc.
- Development of local employment, primarily through the non-expansionary capital works program and DBT expansion projects, as well as ongoing terminal operations.
- Speaking engagements at local clubs, council, and industry groups where appropriate
- Support for local charities and community groups
- Response to community input or issues.
- Maintaining a website to better inform interested parties of terminal related matters.

8.3 Key Stakeholder Relations Program

While the focus of the CES is community engagement, a range of critical external stakeholders also need to be engaged and informed about terminal operational issues and potential expansion pathways. These external stakeholders include:

- Regulatory assessment agencies (Commonwealth, State and Local)
- Elected representatives (Commonwealth, State and Local)
- Portfolio Ministers relevant to the operation or expansion of the terminal
- Media
- Environmental Groups, and
- Local Government officers from Mackay Regional Council

As such, community engagement programs have been developed to include communication with these key stakeholders in order to ensure greater transparency.

DBT is only one component of the Goonyella coal supply chain and relies on the performance and alignment of the upstream and downstream stakeholders to operate at maximum efficiency. As a result, DBIM continues to place a strong emphasis on maintaining a cooperative relationship with its stakeholders through its membership of the ILC and through regular informal contact.

Engagement regarding the 8X pathway has been extensive, and has included engagement as follows:

Stakeholder	Engagement Method	Date completed
Australian Government		
Hon Michael McCormack Deputy Prime Minister and Minister for Infrastructure, Transport and Regional Development	Letter - with offer to meet in-office	November 2020
Hon Sussan Ley Minister for the Environment	Letter - with offer to meet in-office	November 2020
Hon Keith Pitt MP Minister for Resources, Water and Northern Australia	Letter - with offer to meet in-office	November 2020
Hon Michelle Landry Assistant Minister for Northern Australia & Member for Capricornia	Teleconference	10 November 2020
Hon George Christensen Member for Dawson	Teleconference	14 December 2020
Queensland Government		
Hon Mark Bailey Minister for Transport	In-person meeting	21 July 2020
Hon Julieanne Gilbert Member for Mackay	In-person meeting	11 November 2020
Hon Stephen Andrew Member for Mirani	Letter - with offer to meet in-office	November 2020
Local Government		
Mayor Greg Williamson & **CEO Michael Thomson**	In-person meeting	12 November 2020
Stakeholders		
Yuwibara People (the registered Native Title group)	In-person meetings	Throughout CHMP negotiations + ongoing
Community Reference Group Representatives including: • NQBP (CRG Chair) • Mackay Regional Council Representative • Business representative • Indigenous representative • Aurizon representative • BMA representative • DBCT P/L representative • DBIM representative • Community representatives	Project Updates & Presentations (as requested)	June 2019 May 2020 August 2020 November 2020 June 2021 September 2021 November 2021 March 2022 June 2022 October 2022 March 2023

Stakeholder	Engagement Method	Date completed
Community Working Group Representatives including: • Salonika Beach Community representative • Louisa Creek Community representative • Half Tide Beach Community representative • Local Business Group representative • Local Environmental Group representative • DBIM representative • DBT P/L representative	Project Updates & Presentations (as requested)	June 2019 October 2019 June 2020 December 2020 February 2021 March 2021 May 2021 July 2021 February 2022 March 2022 May 2022 July 2022 September 2022 October 2022 December 2022 February 2023

Additional engagement occurred through the following forums and meetings:

- NQBP Principal Planner: regular discussions throughout FEL 3 and in preparation of Master Plan 2023.
- Queensland Department of Transport & Main Roads (**TMR**): including Director (Governance and Ports) and the Project Manager (Sustainable Ports Planning) – March 2023.
- All DBT Access Holders, Access Seekers and Rail Operators via email and meeting on request – March-April 2023.
- All Expansion Parties via regular update reports during FEL 3 Study.
- The Operator – Master Plan 2023 presentation to Executive Leadership Team (**ELT**) and Key Managers – March 2023, regular monthly TMT meetings with ELT plus regular monthly FEL 3 Study Interface meetings since November 2018 with Manager Projects.
- Aurizon Network (rail network owner and manager) – Supply Chain Development Manager – Network – via regular interface meetings including technical interface meetings during FEL 3.
- ILC – General Manager and Master Planning and Simulation Manager - ongoing and frequently throughout the FEL Studies and the development of Master Plan 2023

8.4 Management of Complaints and Issues

DBIM values its trusted relationship with the local community in which it operates. To maintain this relationship, DBIM fosters community engagement to field and manage community input and complaints in an efficient and effective manner. Dedicated channels of communication and protocols have been established to facilitate management of community suggestions and issues which include both the terminal Operator and any major works contractors.

Important Notes

Industry and market data

DBI has commissioned AME Mineral Economics Pty Ltd (**AME**) to provide certain information for inclusion in this document. Information provided by AME is referred to in this document as 'AME'. This document uses market data, statistics and third party estimates, projections and forecasts relating to the industries, segments and end markets in which DBI and DBIM operate. Such information includes, but is not limited to statements, statistics and data relating to product segment and market share, estimated historical and forecast market growth, market sizes and trends, and DBIM's estimated market share and its industry position. DBI has obtained significant portions of the market data, statistics and other information from databases and research prepared by third parties, including reports and information prepared by the AME and other third parties, and other sources. AME has advised that (i) information in their databases is derived from their estimates, subjective judgements and third-party sources, (ii) the information in the databases of other coal industry data collection agencies will differ from the information in their databases, (iii) that forecast information is highly speculative and no reliance may be placed on this data. In the compilation of the AME statistical and graphical information will be unreliable, inaccurate and will contain errors of fact and judgement. It is subject to full validation and the provision of such information requires investors and other users of this document to make appropriate further enquiries. Investors and other users of this document should note that market data and statistics are inherently predictive, subject to uncertainty and not necessarily reflective of actual market conditions. There is no assurance that any of the third party estimates or projections contained in this information, including information provided by AME, will be achieved.

The references to Metallurgical coal outlook under steel's accelerated energy transition two-degree scenario, Metallurgical coal outlook under steel's accelerated transition 1.5 degree scenario – v2022 and Global Metallurgical Coal Strategic Planning Outlook H1 2022 was obtained from Metallurgical Coal Market Service Outlook, a product of Wood Mackenzie. DBI has commissioned Wood Mackenzie to provide certain information which has been included or referred to in this document. The data and information provided by Wood Mackenzie should not be interpreted as advice and you should not rely on it for any purpose. You may not copy or use this data and information except as expressly permitted by Wood Mackenzie in writing. To the fullest extent permitted by law, Wood Mackenzie accepts no responsibility for your use of this data and information except as specified in a written agreement you may have entered into with Wood Mackenzie for the provision of such data and information.

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Forward-Looking Statements

This document contains certain forward-looking statements with respect to the financial condition, operations and business of DBI and DBIM and certain plans and objectives of the management of DBI. Forward-looking statements can be identified by the use of forward-looking terminology, including, without limitation, the terms "believes", "estimates", "anticipates", "expects, "predicts", "intends", "plans", "goals", "targets", "aims", "outlook", "guidance", "forecasts", "may", "will", "would", "could" or "should" or, in each case, their negative or other variations or comparable terminology. These forward-looking statements include all matters that are not historical facts. Such forward looking statements involve known and unknown risks, uncertainties and other factors which because of their nature may cause the actual results or performance of DBIM or DBI to be materially different from the results or performance expressed or implied by such forward looking statements. Actual results may materially vary from any forecasts in this document. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this document. To the maximum extent permitted by law, none of DBI or DBIM, their directors, employees or agents, nor any other person accepts any liability, including, without limitation, any liability arising out of fault or negligence, for any loss arising from the use of the information contained in this document. In particular, no representation or warranty, express or implied is given as to the accuracy, completeness or correctness, likelihood of achievement or reasonableness of any forecasts, prospects or returns contained in this document nor is any obligation assumed to update such information. Such forecasts, prospects or returns are by their nature subject to significant uncertainties and contingencies