

Coal Infrastructure Program of Actions 2009

Progress Report

Identifying the needs of Queensland's coal industry including rail, ports, rollingstock, water, skills, energy, housing and planning.

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The Department of Infrastructure and Planning brings together planning, local government and infrastructure responsibilities into one department enabling government to deliver integrated solutions, face the state's population and economic challenges and secure a sustainable future for Queensland.

The State of Queensland (Department of Infrastructure and Planning) 2010.



Published by the Queensland Government, May 2010, 100 George Street, Brisbane Qld 4000.

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Department of Employment, Economic Development and Innovation

Department of the Premier and Cabinet



Introduction

Coal is Queensland's single largest export industry. In 2008-09, Queensland achieved \$40.7 billion in export sales and exported 159.5 million tonnes of coal—a 4.6% increase in tonnes exported the previous year.

Queensland exports coal worldwide but predominantly to its key markets in Asia and Europe. Collectively, Japan, India, Korea and Taiwan imported over three quarters of coal exported from Queensland.

Queensland is the world's largest seaborne coal exporter. Each year these export sales make a significant contribution to the Queensland economy.

Queensland's position as a major coal exporter is built upon reliable and efficient coal supply chains and the Queensland Government's commitment to ensuring coal infrastructure projects are delivered in advance of demand.

In 2005, the Queensland Government, with the support of the Queensland Resources Council, developed the coal infrastructure program of actions (CIPA) to ensure infrastructure would continue to be delivered in a timely manner to meet the short- and medium term needs of the coal industry.

The Queensland Government's and the coal industry's continued commitment to investing in infrastructure has delivered some significant increases in the export capacity of Queensland's coal supply network, with \$4 billion worth of projects completed since the release of CIPA in 2005.

In 2008, CIPA was updated following the release of the first implementation report. The updated report incorporated project plans totaling approximately \$19.3 billion.

The update also included an assessment of the financial commitments to soft infrastructure, such as skills and housing provision, in recognition of the vital role social infrastructure development plays in the sustainable growth of the coal industry.

The Queensland Government recognises that future growth in the coal industry is not without its challenges. In particular, the industry must minimise the impact of the global economic downturn and adapt to the emergence of carbon trading schemes worldwide.

This report (CIPA 2009) details the progress made in implementing CIPA during 2008 and identifies the key projects that will drive growth in the coal export industry in the short-term. The figures provided in CIPA 2009 are current as of December 2008.



Program overview

Unfavourable economic conditions and continued uncertainty about the potential impacts and depth of the economic downturn have seen the coal infrastructure program of actions 2009 (CIPA 2009) developed in a less optimistic environment than CIPA 2008. Coal demand and prices declined significantly since the record highs of mid-2008 and the industry experienced widespread job losses and production cuts. Additionally, a number of new coal projects and infrastructure expansions were placed on hold or reviewed.

In mid-2009, the Queensland Government finalised an audit of the implementation of CIPA initiatives throughout 2008. This audit was conducted by the Coal Infrastructure Taskforce within the Department of Infrastructure and Planning.

CIPA 2009—which captures the findings of the audit—identifies completed, committed and planned projects through to December 2008 totalling approximately \$25.5 billion. This includes investment in coal infrastructure comprising:

- rail—\$8.7 billion
- rollingstock—\$1.8 billion
- ports—\$12.7 billion
- water—\$628 million
- energy—\$1.3 billion
- roads—\$330 million
- skills—\$20 million
- housing and planning—\$28.5 million.

Key findings of the audit for CIPA 2009 revealed that:

- more than \$1.1 billion worth of projects were completed during 2008
- significant progress was made on a number of key infrastructure projects which will provide a significant boost to Queensland's coal export capability. These projects are detailed further on page 14
- approximately \$4.9 billion in committed investment has been made between 2009 and mid-2012
- a further \$19.5 billion has been identified for planned projects, with the majority scheduled for completion by 2015
- as at December 2008, \$3.6 billion had been spent on projects in CIPA 2009.

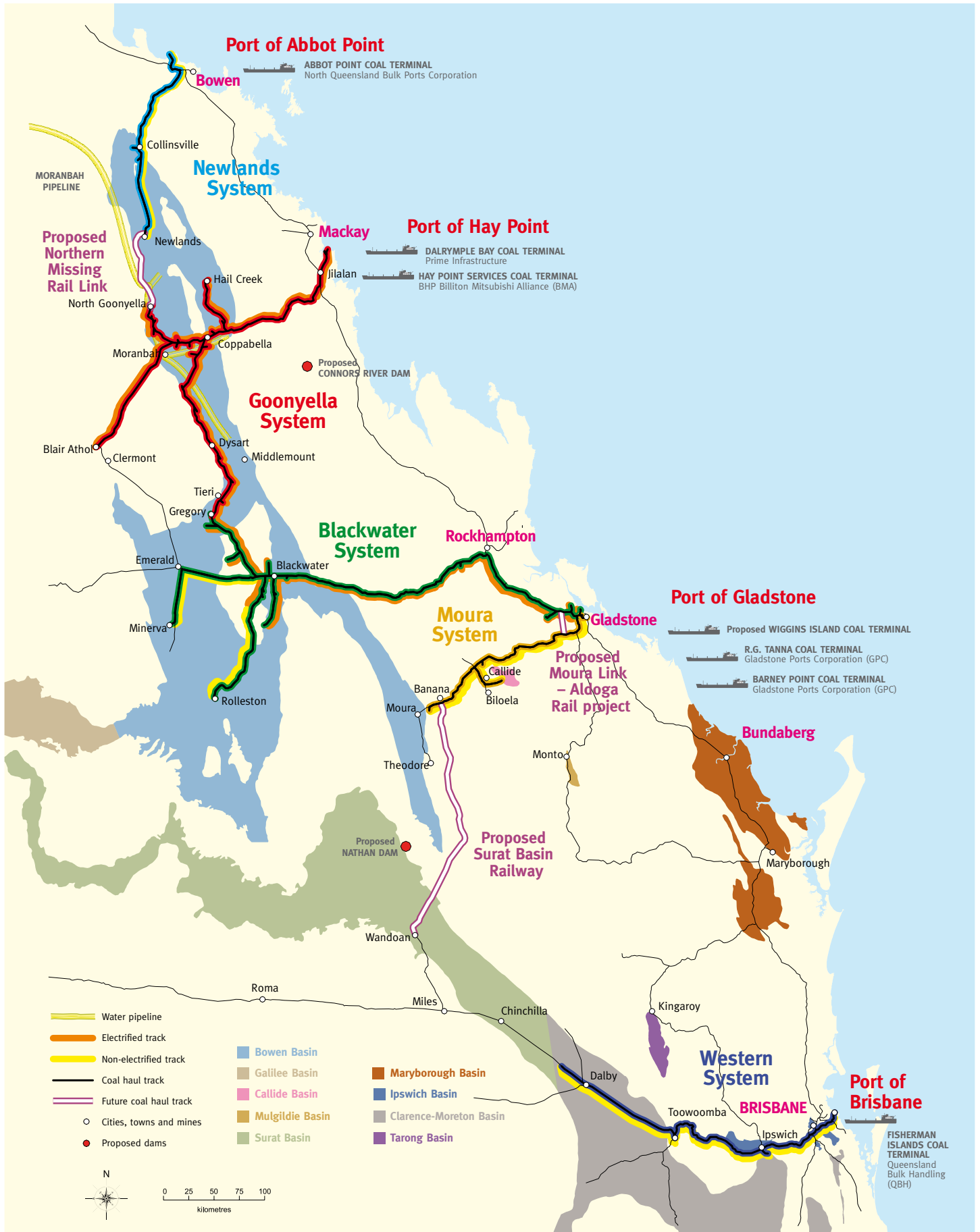
State agencies and government owned corporations are responsible for delivering projects to the value of \$20.1 billion, with private sector infrastructure providers and the coal industry responsible for \$5.4 billion. In the future however, it is likely that the private sector will play an increasingly larger role in directly financing infrastructure. The relativity of government and private sector investment will also change, as the asset sales plan is progressively implemented.

Coal system capacity

The coal transport network in Queensland comprises four supply chains: the Newlands, Goonyella, Blackwater/Moura and the Western Systems. In recent years, significant additional capacity has been created in these systems. Figure 1 on page 3 details the coal supply network and major infrastructure projects.

During 2008, CIPA delivered an additional 7.5 million tonnes per annum (Mtpa) capacity on the rail network and 8 Mtpa of port capacity. As at December 2008, rail capacity was 221 Mtpa and port capacity was 214 Mtpa.

Figure 1: Queensland's coal systems map





The balanced capacity of the network as determined by CIPA 2009 is 209 Mtpa. This balanced capacity represents the lowest nominal capacity of either the below rail or port infrastructure but does not consider rollingstock which can also be a constraint to achieving the nominal capacity available in any given system.

The table below details the capacity in the coal transport network as at 2005, December 2008 and committed and planned capacity.

Coal infrastructure	Capacity 2005 (Mtpa)	Capacity December 2008 (Mtpa)	Committed capacity (Mtpa) #	Planned capacity by 2020 (Mtpa) ##
Newlands System	14	19	19	100
Newlands Rail System	14	19	19	100
Abbot Point Coal Terminal	16	21	50*	110
Goonyella System	88	110	129	140
Goonyella Rail System	95	110	130**	140
Dalrymple Bay Coal Terminal (DBCT)	54	68	85	103
Hay Point Services Coal Terminal	34	44	44	55
Blackwater/Moura System	45	75	75	134
Blackwater Rail System	44	69	69	94
Moura Rail System	16	17	17	40^
RG Tanna Coal Terminal	40	68	68	68
Barney Point Coal Terminal	5	7	7	0
Wiggins Island Coal Terminal	0	0	0	70
Western System	4	6	7	7.7
Western Rail System	4	7	7	7.7
Fisherman's Island Coal Terminal	5	6	7	8
Total balanced capacity	151	210	230	381.7

* In June 2009, works were completed increasing capacity by 4 Mtpa to a total of 25 Mtpa.

** These works were completed in August 2009.

^ Includes proposed Surat Basin Railway.

Committed capacity refers to projects that are not yet completed or may not have started yet, but a formal commitment to proceed has been provided.

Planned capacity refers to projects that are being investigated, planned or under consideration. Planned projects may be at various stages of consideration, but a financial commitment for the project to proceed has not been made.



Infrastructure development

Infrastructure development in Queensland is largely driven by commercial arrangements linked to export demand. Investment in coal infrastructure, particularly by government owned corporations, is governed by guidelines which restrict investment to commercially viable projects. The exception to this is investment in regulated assets, where rates of return and pricing are subject to control by a regulatory authority.

Many of the planned projects in CIPA 2009 are still in the early planning stages and will require environmental and shareholding minister approval, and be supported by a commercial case for development. As such, construction of the project and the scheduling and costs outlined in CIPA will be affected by these considerations.

The viability and staging of some future growth projects identified in CIPA 2009 may also be affected by global and domestic climate change responses such as emissions trading schemes. While the potential costs remain uncertain, climate change policies, particularly in Australia and Queensland's key overseas coal markets, are likely to affect coal prices and demand, production costs and infrastructure costs.

Key achievements and future growth projects

The following sections provide an overview of key projects completed during 2008 as well as committed and planned projects for future growth.

Committed projects are those where an investment decision to proceed has been made. This includes committed feasibility investigations or early works which form part of a larger planned project where no commitment has been made. Planned projects are those that are currently being investigated and while they are at different stages of conception, no formal approval or commitment to deliver the project has been made. Inclusion of these projects in CIPA 2009 does not imply Queensland Government support for the project nor a commitment to them proceeding.

Newlands Coal Supply System

More than \$9.2 billion completed, committed and planned

The Newlands System serves around six coal mines at Collinsville and Newlands and runs from the Northern Bowen Basin coalfields through to the Abbot Point Coal Terminal at the Port of Abbot Point (see Figure 2 on page 7).



Growth projects

Project	Capacity (Mtpa)	Estimated completion	Estimated capital expenditure \$ M
Committed projects #			
Abbot Point Coal Terminal X25	21–25	Completed June 2009	95
Abbot Point Coal Terminal X50	25–50	June 2011	818
Goonyella to Abbot Point Expansion Project (GAP) early works	0	June 2012	198
Planned projects ##			
GAP Project*	19–50	January 2012	Under review
GAP Project	50–100	Under review	Under review
Abbot Point Coal Terminal X110	50–110	Under review	Under review

* Includes the Northern Missing Link.

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Planned capacity refers to projects that are being investigated, planned or under consideration. Planned projects may be at various stages of consideration, but a financial commitment for the project to proceed has not been made.

Figure 2: Newlands Coal System map





Goonyella Coal Supply System

More than \$5.4 billion completed, committed and planned

The Goonyella System services more than 30 mines in the northern and central Bowen Basins. Coal is transported along the Goonyella line to two privately owned terminals at the Port of Hay Point—the Dalrymple Bay Coal Terminal and the Hay Point Services Coal Terminal (see Figure 3 on page 9).

Completed projects **

Project	Capacity (Mtpa)	Completion	Capital expenditure \$ M
DBCT Stage 7X Phase 1*	60–68	March 2008	560
Goonyella rail upgrades	105–110	October 2008	93.7

Growth projects

Project	Capacity (Mtpa)	Estimated completion	Estimated capital expenditure \$ M
Committed projects #			
DBCT 7X Phase 2/3*	68–85	Completed June 2009	707
Jilalan Rail Yard	110–130	December 2009 [^]	500
Goonyella rail upgrades	110–130	December 2009	158.7
Planned projects ##			
Goonyella rail upgrades	130–140	June 2011	307
DBCT Stage 8*	85–103	January 2015	2436
Hay Point Services Coal Terminal X55*	44–55	December 2013	675

* Private sector project.

[^] Completed December 2009.

** Projects completed during 2008.

Committed capacity refers to projects that are not yet completed or may not have started yet, but a formal commitment to proceed has been provided.

Planned capacity refers to projects that are being investigated, planned or under consideration. Planned projects may be at various stages of consideration, but a financial commitment for the project to proceed has not been made.

Figure 3: Goonyella Coal System map





Blackwater/Moura Coal Supply System

Approximately \$6.6 billion completed, committed and planned

The Blackwater/Moura Coal Supply System incorporates the Blackwater Rail System which runs to the west of Rockhampton and services around 12 Central Queensland coal mines, and the Moura Rail System which services a small number of mines to the south west of Gladstone. Both rail systems transport coal for export via two terminals at the Port of Gladstone, the RG Tanna Coal Terminal and Barney Point Coal Terminal (see Figure 4 on page 11).

Completed projects **

Project	Capacity (Mtpa)	Completion	Capital expenditure \$ M
Blackwater rail upgrades	65.5–69	August 2008	71.4
Road upgrades	-	December 2008	108.7

Growth projects

Project	Capacity (Mtpa)	Estimated completion	Estimated capital expenditure \$ M
Committed projects #			
Blackwater rail upgrades	69–69	June 2012	187
Planned projects ##			
Blackwater rail upgrades	69–94	December 2012	1197
Moura rail upgrades	17–40	June 2013	336
Surat Basin Railway*	40 (no addition to system capacity)	Late 2013	1000
Wiggins Island Coal Terminal*	70	Stage 1 to 25Mtpa–June 2013	3800

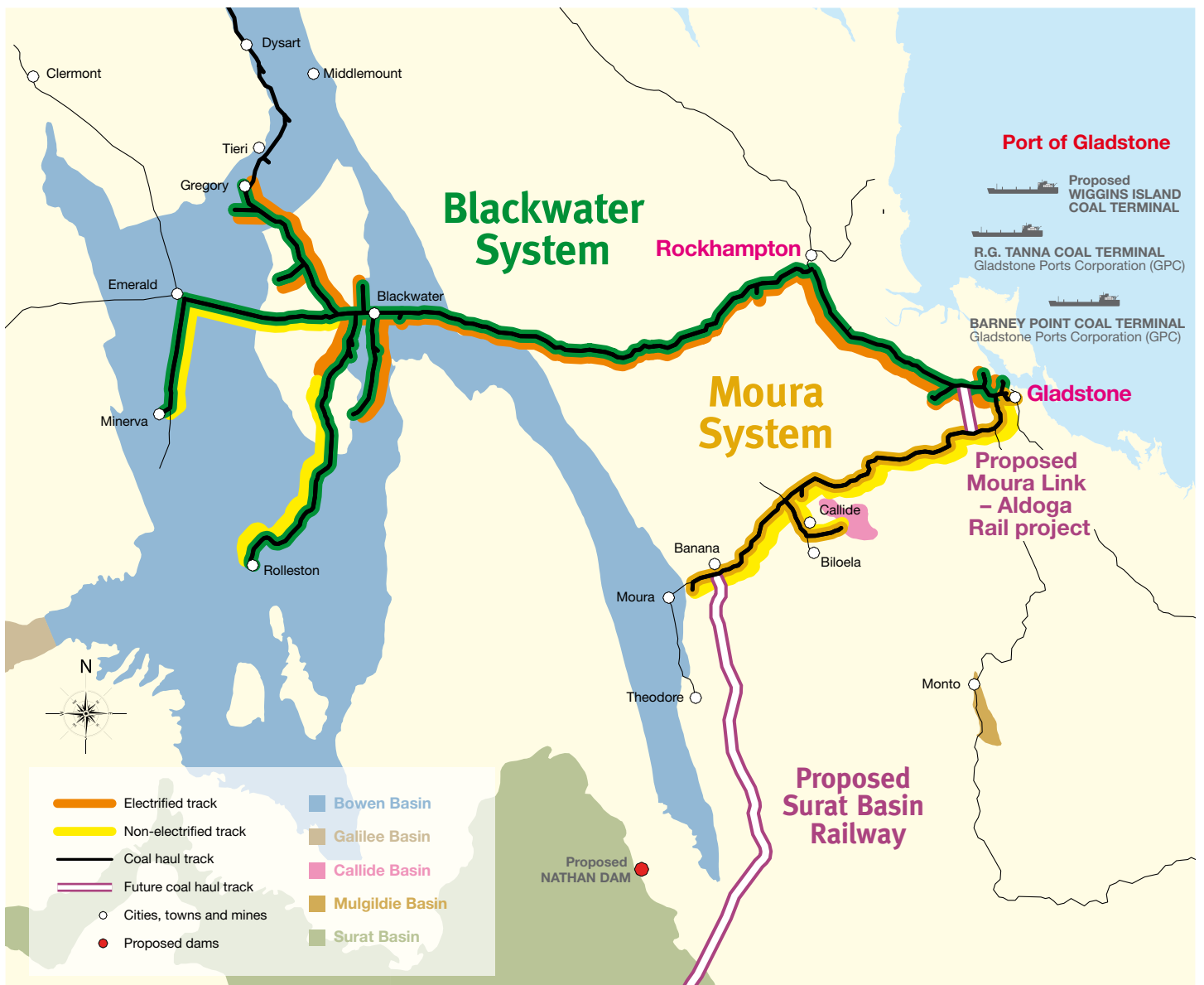
* Private sector project.

** Projects completed during 2008.

Committed capacity refers to projects that are not yet completed or may not have started yet, but a formal commitment to proceed has been provided.

Planned capacity refers to projects that are being investigated, planned or under consideration. Planned projects may be at various stages of consideration, but a financial commitment for the project to proceed has not been made.

Figure 4: Blackwater/Moura Coal System map





Western Coal Supply System

More than \$155 million completed, committed and planned

The Western System includes a rail line from west of Dalby, through the Brisbane suburban rail network to the Fisherman's Island Coal Terminal at the Port of Brisbane. While future growth in exports via the Port of Brisbane will be constrained, expansion of the Western rail line could be undertaken at the western end to link up with the proposed Surat Basin Railway for export via the Port of Gladstone (see Figure 5 on page 13).

Growth projects

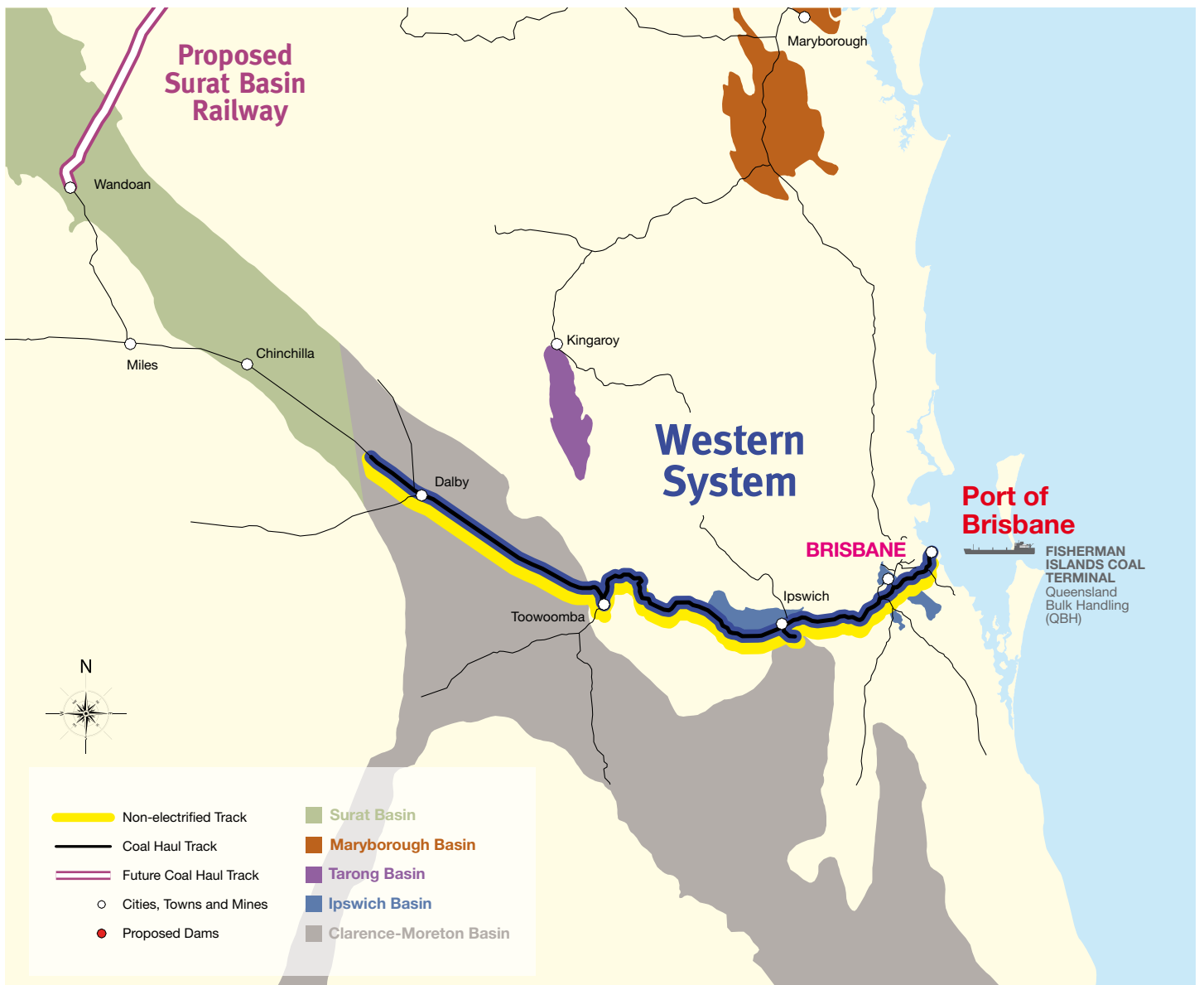
Project	Capacity (Mtpa)	Estimated completion	Estimated capital expenditure \$ M
Committed projects #			
Fisherman Island Coal Terminal X7*	6-7	June 2010	10
Planned projects ##			
Western rail upgrades	7-7.7	June 2011	130
Fisherman Island Coal Terminal X8*	7-8	June 2012	15

* Private sector project.

Committed capacity refers to projects that are not yet completed or may not have started yet, but a formal commitment to proceed has been provided.

Planned capacity refers to projects that are being investigated, planned or under consideration. Planned projects may be at various stages of consideration, but a financial commitment for the project to proceed has not been made.

Figure 5: Western Coal System map





Rail rollingstock

More than \$1.8 billion completed, committed and planned

Throughout 2008, Queensland Rail's rollingstock procurement program saw the finalisation of locomotive and wagon orders totalling approximately \$200 million. This included the arrival of a number of new coal wagons and upgrades to existing diesel electric locomotives.

Progressive implementation of the rollingstock procurement program over the next three years to mid-2012 will deliver a significant boost to the state's rollingstock capacity and provide Queensland Rail with greater flexibility to meet customer needs. Commitments will see the arrival of new coal wagons and electric and diesel locomotives as well as upgrades to existing rollingstock.

The state government also welcomes Pacific National into the coal haulage market in Queensland. Pacific National commenced hauling coal in the 2009-10 financial year.

Water infrastructure projects

Approximately \$628 million completed, committed and planned

The Queensland Government is progressing detailed feasibility and environmental assessments for proposed new water infrastructure. This infrastructure will provide medium- to long-term water supply solutions to support growth of the coal industry, other industries and regional communities.

CIPA 2009 identifies approximately \$628 million of investment in water infrastructure. This includes over \$31 million in committed expenditure for feasibility investigations into the proposed Connors River and Nathan Dams.

Throughout 2008, the state government continued to progress feasibility investigations and environmental assessments for these projects. More detail on the proposed Connors River and Nathan Dams can be found on page 17.

Skills development

Approximately \$20 million completed, committed and planned

As at July 2009, it was estimated that the Queensland coal industry employed approximately 25 900 people. This was despite the impact of job losses in the mining sector. The Queensland Government, in collaboration with industry, moved quickly to provide support for displaced workers, protect jobs and encourage new employment opportunities both within the mining industry and other industries.

During 2008, the Department of Education and Training completed the final year of a three year agreement to establish the Mining Industry Skills Centre (MISC) which provides government and industry with a 'one stop shop' on all training and workforce matters.

CIPA 2009 identifies more than \$13 million committed to skills initiatives through to June 2011, including \$2.9 million in industry contributions. Key projects to be delivered include the Central Queensland Coal Regional Skills Formation Strategy and further support for both the MISC and the Queensland Minerals and Energy Academy.

Energy infrastructure

Approximately \$1.3 billion completed, committed and planned

The availability of adequate power is essential to growth in the coal industry. Electricity demand in the coal industry is driven by mining activities, supply chain infrastructure such as rail networks and the communities that support coal mines and their workers.

CIPA 2009 identifies \$18 million in energy infrastructure delivered during 2008, with a further \$323 million of coal related energy projects in Ergon Energy's work program for the next three years.

Ergon estimates that a \$965 million of works could be undertaken for electricity connection to new and expanding coal mines as well as electricity network, port and water infrastructure upgrades.



Road infrastructure

Approximately \$330 million completed, committed and planned

The mining industry and, more importantly, the wide range of industries that service the mining industry and mining communities cannot operate without an adequate road network. Additionally, state government is focussed on ensuring roads are safe and reducing the risk of accidents due to fatigue.

The Department of Transport and Main Roads completed in excess of \$116 million of road projects in coal mining regions during 2008. These projects include road improvements and the implementation of road safety and driver fatigue management initiatives.

A further \$214 million has been committed to deliver road and road safety projects over the next three years.

Housing and planning

Approximately \$28.5 million completed, committed and planned

This report recognises the importance of adequate housing and social infrastructure to support growth and provide attractive lifestyle options for mine workers. Additionally, the communities which support mining activities need to be developed in a sustainable way through planning which considers the cumulative impact of mining development.

In 2008, the Queensland Government released the Sustainable Resource Communities Policy which sees a greater focus on assessment of social impacts and ensuring cumulative and regional impacts are considered by all stakeholders in decision making and planning for resource communities. The policy is supported by a three-year \$100 million commitment by government to fund economic and social infrastructure projects in regional and rural communities in key mining areas.

CIPA 2009 includes more than \$28 million in housing and planning initiatives to support the coal industry. During 2008:

- the Department of Communities spent more than \$28 million on acquisitions and construction to provide additional social housing in the Bowen Basin, Mackay/Whitsunday region, and the Rockhampton/Livingstone area.
- the Department of Infrastructure and Planning published the *Bowen Basin Population Report 2007* providing full-time equivalent population estimates for all local governments in the Bowen Basin. The Department of Infrastructure and Planning also completed the first *Surat Basin Population Report* which provides population estimates for local government areas and communities in the Surat Basin.

The Queensland Government will continue to support sustainable development by:

- continuing to provide additional social housing in coal mining regions
- undertaking a range of planning studies to provide demographic and social data upon which government agencies can make informed and robust decisions in respect to the social infrastructure needs of coal mining communities
- completing the Bowen Abbot Point Accommodation and Community Infrastructure Study which aims to ensure the supply of community infrastructure can meet population growth as a result of the potential industrial development in the region.



Significant projects

The following sections detail the key infrastructure projects which, should they proceed, could provide significant expansion of Queensland's coal export capability.

Goonyella to Abbot Point Expansion Project (including Northern Missing Link)

The project incorporates a 69 kilometre rail link, known as the Northern Missing Link, between the Newlands and Goonyella coal rail systems. The project includes design capacity to provide for transportation of coal from North Goonyella mines across the link, and also expansion of capacity on the Newlands System.

During 2008, Queensland Rail progressed early works for the Northern Missing Link and detailed planning for the Goonyella to Abbot Point Expansion Project. In October, the government announced that the project would proceed with expansion to 50 Mtpa expected by January 2012. Final planning and commercial negotiations are continuing.

Jilalan Rail Yard

The Jilalan Rail Yard is used for servicing and maintaining coal trains on the Goonyella Rail System. Queensland Rail's expansion of the yard is essential to increase system capacity to 130 Mtpa.

Construction commenced in April 2008 as planned and the major \$190 million track component was completed in August 2009. The \$310 million above rail component comprising rollingstock maintenance and train provisioning facilities was completed in December 2009.

Wiggins Island Coal Terminal

The proposed Wiggins Island Coal Terminal and associated rail infrastructure at the Port of Gladstone are closely linked to the Surat Basin Railway and other mining developments in the Surat Basin.

The current plan envisages incremental capacity expansion across three stages to a total capacity of 70 Mtpa, with a terminal capacity of 25 Mtpa in the first stage. Potential exists for greater expansion should this be necessary in the future.

The Wiggins Island Coal Export Terminal consortium comprising industry mining companies has been granted preferred developer status to develop the terminal.

Moura Link – Aldoga Rail Project

Development of the Wiggins Island Coal Terminal will require a major rearrangement of the rail networks in the Gladstone area. The project will provide rail access to the terminal from both the Blackwater and Moura Systems and includes the following works:

- a rollingstock maintenance yard and provisioning facilities at Aldoga
- a new rail line to carry Moura/Surat traffic via the Moura Short Line
- quadruplication of the North Coast Line.

Construction is anticipated to commence during the first half of 2011 with the project expected to commence operations by late 2013. However, progress will depend on mining industry support and development of the Wiggins Island Coal Terminal.

Surat Basin Railway (Southern Missing Link)

The \$1 billion Surat Basin Railway project involves the construction of a 210 kilometre rail link between Wandoan and Banana—formerly known as the Southern Missing Link. The project also provides for upgrades to existing rail lines from Wandoan to Toowoomba (the Western System) and Banana to Gladstone (the Moura System).

Government has granted an exclusive mandate to a consortium to develop the project. If the consortium meets all criteria as stipulated in the exclusive mandate agreement, construction could be completed by late 2013.

Throughout 2008, the Department of Infrastructure and Planning continued to facilitate development of the project to meet agreed milestones in accordance with the exclusive mandate agreement. To date, the consortium has satisfactorily met six of the seven milestones as scheduled under the mandate including preparation of an environmental impact statement. A supplementary environmental impact statement is now being prepared. The final milestone will be the achievement of financial close in June 2010.



Connors River Dam and Pipelines Project

The proposed Connors River Dam, approximately 235 kilometre west of Rockhampton, may underpin expansion of coal production in the Northern Bowen Basin. The proposed dam and pipelines could be completed by 2014 as a medium- to long-term option for supplying water to Northern Bowen Basin coal mines and communities. The business case being developed details a storage capacity of 373 700 megalitres with a corresponding high-priority water yield of 56 400 megalitres per year.

Sunwater as project proponent, is progressing business case investigations including preparation of an environmental impact statement (EIS). As well as environmental considerations, development of this project is subject to demonstrated customer demand and the commercial feasibility of the project. The business case is expected to be completed in 2010 and if the project is approved for construction, practical completion could be achieved by 2014.

Nathan Dam

The Nathan Dam project involves construction of a new 880 000 megalitre dam in the Taroom Shire and pipelines to serve the industrial, mining and agricultural interests of the region. The estimated annual yield of the proposed dam is 190 000 megalitres of medium-priority water or 70 000 megalitres of high-priority water.

Sunwater as project proponent, is progressing business case investigations including preparation of an EIS. As well as environmental considerations, development of this project is subject to demonstrated customer demand and the commercial feasibility of the project.

Galilee Basin

Interest in coal mining in the under-developed Galilee Basin has increased in the past few years. A number of proponents are planning large scale projects incorporating mines and associated infrastructure. Infrastructure options being considered by proponents include building new rail infrastructure and coal terminals, or linking in with existing facilities.

Given the early stage of development of Galilee Basin proposals, infrastructure in the Galilee Basin has not been addressed in CIPA 2009. Galilee Basin infrastructure will be further described in CIPA 2010.

Queensland coal infrastructure strategic planning

The Department of Infrastructure and Planning is also responsible for developing a long-term view of the infrastructure required to support industry growth, as well as developing strategies to address issues that may impact on future coal industry growth such as climate change. The Department of Infrastructure and Planning will continue to undertake coal infrastructure strategic planning to guide infrastructure development over the longer term.



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