IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Review of access pricing on the NSW grain line network

Transport — Issues Paper
May 2011

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Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by Friday 24 June 2011.

We would prefer to receive them by email <ipart@ipart.nsw.gov.au>.

You can also send comments by fax to (02) 9290 2061, or by mail to:

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Our normal practice is to make submissions publicly available on our website <www.ipart.nsw.gov.au>. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed on the previous page.

We may choose not to publish a submission—for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. IPART will then make every effort to protect that information, but it could be subject to appeal under freedom of information legislation.

If you would like further information on making a submission, IPART's submission policy is available on our website.

Contents

1 Introduction

Over the past decade, 2 reviews have examined the efficiency and viability of the rail lines in NSW known as the branch lines, or the grain line network (reflecting the lines' primary role in transporting grain). In 2004, the NSW Government established the Grain Infrastructure Advisory Committee (GIAC) to review the reasons for the low utilisation of these lines and the merits of keeping them open.[1] In response to GIAC's findings, the Government suspended operations on several lines. However, low utilisation and low cost recovery on the grain lines continued to be a concern.

In 2008, the Australian Government commissioned the NSW Grain Freight Review. This review examined the efficiency of grain supply chain in NSW, including the grain line network. Like the GIAC review, it considered the viability of keeping the grain lines open. It recommended that most of the lines remain open on the basis that if they were closed, the costs of increased grain traffic on the road network would outweigh the costs of keeping the lines open.

In light of this, the NSW Grain Freight Review recommended that the lines be stabilised at a minimum 'fit for purpose' condition through a non-recoverable government grant, contingent on industry investment in other supply chain improvements. It also recommended that the NSW Government review future access charges for the grain line network to determine an appropriate level of user contribution to the cost of maintaining the lines.[2]

In its preliminary response to the review, the former NSW Government agreed to this recommendation. In December 2010, it asked the Independent Pricing and Regulatory Tribunal of NSW (IPART) to conduct a review of future access pricing for sustainability of the network. The terms of reference for this review is provided in Appendix A.

The purpose of this paper is to explain what we have been asked to review, how we propose to conduct the review and the key issues we will consider, and to seek written submissions from stakeholders on these issues. A glossary of terms is provided in Appendix D.

1 Grain Infrastructure Advisory Committee, *Report on Rail/Road Options for Grain Logistics*, 2004.
2 Australian Government, *New South Wales Grain Freight Review*, September 2009.

1.1 What part of the NSW rail network is included in the scope of this review?

The terms of reference ask us to investigate and advise on appropriate pricing arrangements for the NSW grain line network as it is defined in the NSW Grain Freight Review. That review examined a network consisting of around 19 lines covering over 1,200 km of track (see Table 1.1). This network is made up primarily of 'Class 5' or 'restricted' lines, which are able to carry only partly loaded trains and light-axle locomotives (19 tonnes) at low speeds (up to 40 km/h). This reflects the design and age of the network, much of which is approaching 100 years old. The network also includes a few 'Class 3' lines, which have the same axle limit, but allow for faster speeds (up to 70 km/h) or the use of heavier locomotives at lower speeds.

The grain line network connects the northern, western and southern NSW grain-growing regions to the greater Country Regional Network (CRN), and to the Interstate Network operated by the Australian Rail Track Corporation (ARTC). A map of the NSW rail network is provided in Appendix B. We note that some other parts of the CRN also carry grain traffic, but these lines are not within the scope of our review.

Table 1.1 NSW grain line network: sectors included in the scope of IPART's review

Region	Sector code	Sector	Route km
Northern	477	Moree to Camurra[a]	11.2
	478	Camurra to Weemelah	85.7
	480	Narrabri to Burren	83.1
	481	Burren to Walgett	88.2
	482	Burren to Merrywinebone	52.6
	485	Camurra to North Star[a]	83.5
Western	732	Bogan Gate to Tottenham	114.6
	743	Nevertire to Warren	20.2
	761	Dubbo to Coonamble	149.6
Southern	645	The Rock to Boree Creek	56.6
	660	Koorawatha to Demondrille[b]	74.4
	661	Cowra to Koorawatha[b]	27.3
	663	Koorawatha to Greenethorpe[b]	21.5
	672	Temora to Barmedman	36.3
	673	Barmedman to West Wyalong	31.5
	674	West Wyalong to Ungarie	40.4
	675	Ungarie to Lake Cargelligo	71.4
	678	Ungarie to Naradhan	60.4
	687	Griffith to Hillston	108.1
	Total		**1,216.6**

a Expected to be included in the ARTC leased inland route from 1 July 2011.
b Currently non-operational, subject to Ministerial Taskforce business case.
Source: CRIA.

Since the NSW Grain Freight Review was completed, services have been withdrawn from the sections of line from Cowra to Demondrille (including Koorawatha to Greenethorpe). We understand that the resumption of services on these lines is subject to a business case study being undertaken in partnership between the NSW Government and relevant local governments. It should also be noted that 2 lines in the northern region are expected to be included in the ARTC lease from 1 July 2011: Moree to Camurra and Camurra to North Star. We have included these lines in our review at this stage.

While our review of access pricing is limited to the grain line network, it is important to understand that this network is one part of the greater grain supply chain. For example, grain may start its transport journey on the grain line network, move onto the CRN and complete the journey on the ARTC's interstate network, which may also include movements on the RailCorp network. It may also complete all or part of its journey on the road network. Therefore, any changes to access prices on the grain line network will have an impact on the overall grain supply chain, including road transport operations.

1.2 What have we been asked to do?

The NSW Government has asked us to investigate and advise on appropriate pricing arrangements for the NSW grain line network, taking into account:

- the efficient costs of providing grain freight services over the next 5 years
- the ability and willingness of industry to pay for these services
- the principles and approach underpinning the determination of access charges in other states
- effect of any pricing recommendations on the whole supply chain for grain including the road network and any potential flow-on effects to local government
- policy developments relating to national road-pricing reforms, including the implementation of COAG Road Reform Plan
- the advantages and disadvantages of any alteration to access charges being phased in over a 5-year period
- the effect of any pricing recommendations on the level of government funding provided for Community Service Obligations
- potential implementation strategies for any changes to pricing measures recommended by IPART.

We have been asked to provide a draft and final report to the Minister for Transport, within 12 to 14 months.

1.3 Who will be affected by the outcome of this review?

This review will affect a broad range of stakeholders directly and indirectly. These include:

- Grain producers, who use the network to move their grain from farms to domestic and international customers, and ultimately bear the cost of rail access charges.
- The government agency responsible for managing operations and maintenance on the grain line network – the Country Rail Infrastructure Authority (CRIA)[3] – which collects access revenue to recover costs of providing and maintaining the network.
- Train operators and GrainCorp Operations Limited (GrainCorp), which has a grain haulage agreement with the NSW Government to supply above rail services on the grain lines. Train operators pay access charges (which are passed onto their customers) and play a key role in making decisions about the timing and destination of transporting grain, the mode of transport and location of grain receival terminals.
- Grain handlers such as GrainCorp, the Australian Wheat Board (AWB) and the Australian Bulk Alliance (ABA), which own silos on the network and play a role in deciding the mode of transport.
- NSW taxpayers and the NSW Government. The NSW Government provides a substantial ongoing subsidy to keep the lines operational, which is funded by taxpayers.
- Road agencies such as the Roads and Traffic Authority (RTA) and local councils. The local road network provides an alternative means of transporting grain. If more grain is transported by road this has implications for road infrastructure and maintenance costs and the stakeholders who fund those costs.
- Other participants in the grain supply (such as truck operators), which service the grain market, and the industries that rely on grain as an input into their production processes (such as flour mills and farmers, who use grain to feed cattle and poultry).

1.4 How and when can stakeholders participate in the review?

In addition to undertaking our own research and analysis for this review, we will consult with the stakeholders listed above. In particular, we invite all interested parties to make written submissions on this paper by 24 June 2011.

3 Formerly the Rail Infrastructure Corporation (RIC).

We will consider all matters raised in these submissions before we make our draft decisions, which we will provide to the Minister for Transport in a draft report in September 2011. We will also release this draft report publicly, and invite written submissions by October 2011. In addition, we will convene a roundtable discussion in July to provide stakeholders with another opportunity to present their views on key issues.

Our final decisions will consider all matters raised in submissions and at the roundtable. The final report will be provided to the Minister for Transport in February 2012 and then released publicly.

Table 1.2 sets out the indicative timetable for the review. Details on how to make a submission can be found at the front of this paper.

Table 1.2 Indicative timetable for the review

Key tasks	Due
Release issues paper and seek submissions from stakeholders	13 May 2011
Receive submissions on issues paper	24 June 2011
Hold roundtable discussion with stakeholders	July 2011
Provide draft report to Minister and release for public consultation	September 2011
Receive submissions on draft report	October 2011
Provide final report to Minister	February 2012

1.5 List of issues on which we seek comment

The following chapters identify and discuss the issues on which we seek comment. Stakeholders may address all or some of these issues in their submissions and may raise any other issues they consider relevant to this review. For convenience, a full list of the issues on which we seek comment is set out below, along with the page at which we request such comment.

16 Could the grain industry benefit from greater interstate coordination and planning of the eastern states grain supply chain? 52

17 How should willingness to pay be taken into consideration in setting access prices? Should the grain line cost recovery levels increase during good harvests? Should different prices be charged for different lines or access seekers? 60

1.6 What does the rest of this report cover?

To assist stakeholders in making submissions to the review, the following chapters provide some important contextual information and discuss the key issues we will consider:

- Chapter 2 provides an overview of grain logistics in NSW. It also summarises the key findings of previous reviews of the NSW grain supply chains.
- Chapter 3 sets out our proposed approach to the review.
- Chapter 4 presents some of the existing information on the costs of the grain line network and discusses how we might establish the efficient 'below rail' costs of the network.
- Chapter 5 explains why estimating the external costs and benefits of rail and road and avoided road costs are key elements for determining the proportion of the grain line costs that should be borne by government as opposed to users. It explores how we propose to identify the competing road network and estimate road maintenance and upgrade costs that would be incurred if the lines were not there.
- Chapter 6 explains how our decision on the appropriate user cost share must also consider the extent to which increases in access prices make the grain lines uncompetitive compared to road transport. It also explains how we intend to estimate the 'above road' costs of transporting grain to compare with those of rail to estimate the 'cross over' point at which road becomes the cheaper option.
- Chapter 7 examines the outlook for the production of grain in NSW and how we should forecast the potential level of demand on the grain lines from grain and other sources over the pricing period.
- Chapter 8 discusses the issues we will consider in deciding on the appropriate access pricing arrangements for the grain lines, and whether governance reforms would assist in implementing the new pricing arrangements.
- Chapter 9 discusses key issues we need to consider in assessing the impact of our recommended access charges on stakeholders, including the willingness and capacity of industry to pay for higher access prices.

2 Overview of grain logistics in NSW

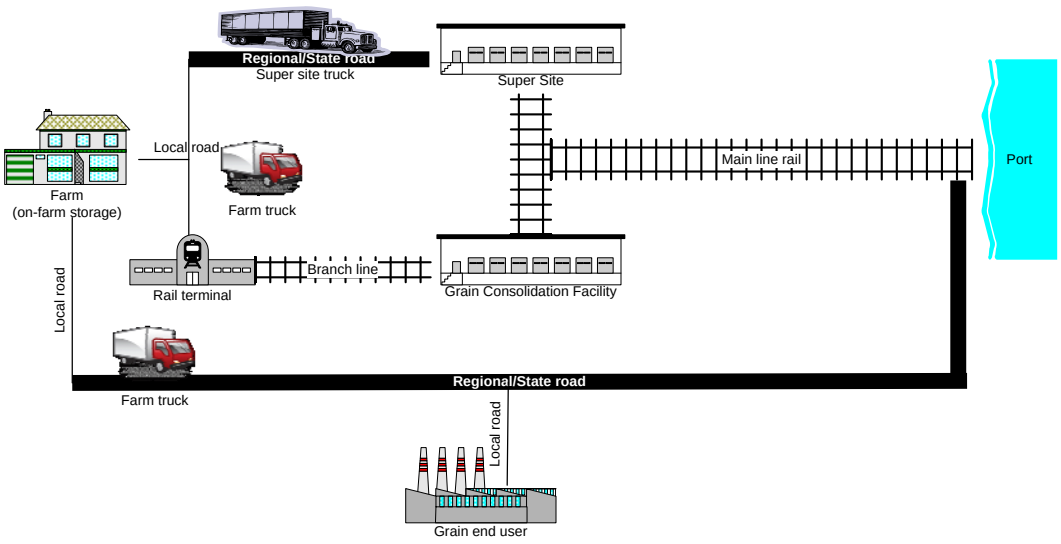
Each grain growing region in NSW is served by both road and rail options for transporting grain. Grain may be stored on farm or transported into the bulk handling system or directly to end users by road, rail or a combination of both.

The sections below provide an overview of grain logistics in NSW, including what influences grain producers' decision to use road or rail transport, and who is responsible for providing and paying the costs of each mode of transport. The final section summarises the key findings of previous reviews into the NSW grain supply chain.

2.1 Road or rail – what influences the logistics decision?

A grain producer's decision to use road or rail transport typically depends on a number of factors including, but not limited to, destination, cost, contractual arrangements with grain handlers, flexibility, availability of train paths or trains and other supply chain factors. Importantly, the choice of rail or road hinges on the cost to the freight customer of each mode of transport. Figure 2.1 illustrates some of the modal decisions faced by a grain producer.

Figure 2.1 Grain logistics decisions faced by producers



Source: IPART.

Traditionally, rail has been a more efficient choice for transporting high-volume bulk grain to domestic customers or ports (for export). However, along the grain line network, lower traffic volumes mean that rail has less of a cost advantage over road transport when transporting grain to a bulk storage facility on the main line. The widespread introduction of B-doubles and increased investment in road infrastructure that can handle a higher frequency of heavy trucks has also made road a more competitive option.

2.2 Who provides rail transportation?

Rail transportation includes 2 elements:

- 'below rail infrastructure', which includes the tracks, signalling equipment and other inputs related to the line network, and
- 'above rail operations', which include the rolling stock and other inputs required to operate train services.

Historically, both elements were owned and operated by the NSW Government. In 1996, responsibility for below rail infrastructure was separated from above rail operations in response to the introduction of National Competition Policy. The below rail 'natural monopoly' network remained in government ownership and above rail operations were opened up to the market, with the government charging operators an access fee to use the network.

2.2.1 Below rail infrastructure

CRIA is responsible for operating and maintaining the CRN, including the grain lines within the scope of IPART's review. CRIA is a statutory corporation and NSW Government agency, whose activities are managed and controlled by its Chief Executive Officer, in accordance with any directions from the Director–General of the Department of Transport and the Minister for Transport.

CRIA's principal functions are to:

- hold, manage, maintain and establish rail infrastructure facilities on behalf of the State
- provide persons with access under the current NSW Rail Access Undertaking to the part of the NSW rail network vested in or owned by CRIA, which is not subject to an Australian Rail Track Corporation (ARTC) lease or licence.

CRIA is responsible for promoting and facilitating access to the CRN in accordance with the conditions of the NSW Rail Access Undertaking. Rail access prices are negotiated with access seekers between a minimum 'floor' price and a maximum 'ceiling' price and are not published. The current pricing framework is discussed in more detail in Chapter 8.

Until 2012, CRIA has a management agreement with the ARTC to operate the CRN. In 2010, CRIA ran a market testing process for a new contract to manage operations and maintenance on this network for 10 years. John Holland, a private construction and maintenance service provider, was selected as the successful bidder to undertake this role from early 2012. Under the new contract, John Holland will be responsible for the full scope of railway asset management services, including network operations, signalling, structures and major periodic maintenance. The contract is worth approximately $1.5 billion over the 10-year period.

2.2.2 Above rail operations

As noted above, the market for above rail operations has been open to competition since 1996. Any train operator can negotiate access to the network, subject to the conditions of the NSW Rail Access Undertaking and reaching commercial agreement with the network owner. However, since deregulation, there has been a lack of commercial interest and investment in operating trains along the grain line network.

In 2009, the NSW Government, after a public expression of interest process, signed a grain rail haulage agreement with GrainCorp to provide above rail services on the NSW grain line network for a 5-year period. GrainCorp is a publicly listed company whose principal activities include the receival, storage and handling, marketing and transport of grain and other bulk commodities by road and rail. It is the primary user of the grain line network.

Under the grain haulage agreement, the NSW Government transferred ownership of grain specific rolling stock assets to GrainCorp and set out conditions for the use and maintenance of these assets for the provision of grain haulage. The agreement does not provide any additional financial support, business guarantees or preferential treatment. GrainCorp has an agreement with Pacific National to operate some services on the CRN on its behalf, including grain haulage.

2.3 Who provides road transportation?

Road transportation also includes 2 elements — 'below road infrastructure' (the road networks) and 'above road operations' (truck haulage services).

2.3.1 Below road infrastructure

Nearly all roads are owned by government authorities. The roads that compete with the grain lines include local and regional roads and state highways. Local and regional roads are primarily owned and maintained by local government. State highways are owned and maintained by the RTA.

2.3.2 Above road operations

The provision of above road or truck haulage services is considered to be competitive with a number of providers and no real barriers to entering the market. Many grain handlers, including GrainCorp, AWB and ABA offer road haulage services.

2.4 Who pays for rail and road transport?

The costs of providing rail and road transport services for grain haulage are shared between grain producers (users) and government.

2.4.1 Rail transport costs

The costs of the below rail infrastructure are recovered through access charges (which are levied on rail operators and passed on to users) and government line subsidies:

- Access charges recover the difference between the costs of upgrading and maintaining the infrastructure and government line subsidies. In 2009/10, the total revenue generated by access charges across the whole CRN (not just the grain lines) was around $18 million, which is equivalent to about 5% of our estimate of the CRN's below rail infrastructure costs of around $400 million.[4]
- The total subsidy provided by the NSW Government has the aim of making the rail mode more competitive with road. Because the grain lines face competition from roads, the costs that can be recovered from users are constrained to a level that makes the total cost of transporting grain by rail equal to or below that of transporting grain by road. If access prices were set to recover the full economic cost of the rail network, the cost of using road transport would be cheaper and all grain traffic would shift to road. This would have significant impacts on the costs of and traffic on roads.

The costs of the above rail operations are incurred by grain haulage operators and passed on to users. These are mostly out of the control of the track owner, although the track's design standard and condition has some bearing on them (see Chapter 4).

[4] This is an estimate only with the asset base value derived from the book value in CRIA's annual accounts and the rate of return that is applied in the Hunter Valley Coal Network. Currently, the line subsidy and access revenue do not provide for a rate of return on capital and so do not recover the full economic costs of the network.

2.4.2 Road transport costs

The below road costs are recovered through heavy vehicle road user prices (which are paid by truck operators and passed onto users) and government subsidies:

- Heavy vehicle road user prices are determined by the National Transport Commission (NTC) on a nationally uniform basis, and the funds they generate are hypothecated to state and local road authorities. Registration fees, which are based on vehicle type, and a fuel-based excise, are the main mechanisms through which trucks contribute to the cost of providing and maintaining the road infrastructure that they use. (The heavy vehicle road pricing framework is explained in more detail in Chapter 5.)
- The amount of government subsidy is not explicitly set. It results from any difference between the revenue recovered from heavy vehicle road users that is hypothecated to the relevant road agencies and the actual costs incurred through heavy vehicle road use on the local and regional roads in question.

2.5 Findings of previous grain supply chain reviews in NSW

The GIAC (2004) review and NSW Grain Freight Review (2009) both undertook analysis of the costs and benefits of the NSW grain line network and competing road network. The findings and recommendations of these reviews that are relevant to our review of access pricing are discussed below.

2.5.1 Grain Industry Advisory Committee Report

In 2003, the NSW Government established GIAC, which comprised key industry and government stakeholders in the grain industry supply chain. GIAC was asked to investigate and report on a range of issues affecting the future utilisation of the restricted grain rail lines and road networks in those regions. GIAC considered the costs and benefits of upgrading and/or maintaining the lines over a 20-year period.

GIAC found that cost recovery across the 15 grain lines it examined ranged from 0.8% to 6.3%, and was 3% on average. This was based on the net present value of initial one-off capital upgrading of tracks and bridges, annual routine maintenance and major periodic maintenance, divided by the total expected tonnage carried on the line over a 20-year period.

GIAC identified:

- 5 lines where it considered the cost of upgrading would be significantly less than the cost of potential road alternatives
- 7 lines where it considered that there was still some uncertainty about the costs and benefits and recommended that these be investigated further after the 2003/04 grain harvest

- 3 lines where it considered the cost of upgrading would be significantly greater than the cost of upgrading potential road alternatives.

Following the GIAC report, the NSW Government suspended operations on 4 grain lines and announced funding of $69 million over 3 years to keep the remaining lines open. In November 2008, the NSW Government announced its decision to withdraw services on 5 more lines; however, these lines remained open pending the outcome of the Australian Government's NSW Grain Freight Review.

2.5.2 NSW Grain Freight Review

In 2008, the Australian Government initiated the NSW Grain Freight Review to assess the efficiency of grain supply chains in NSW and recommend options to improve the system in light of industry changes, including the exit of Pacific National from the grain rail haulage market. The review was undertaken by a high level task force of industry and government representatives, appointed by the Minister for Infrastructure, Transport, Regional Development and Local Government.

The review undertook a cost-benefit analysis of the merits of retaining the grain lines. It concluded that the majority of the lines should be retained, despite finding that the lines' cost recovery was around 6%. It recommended that the cost of stabilising these lines at their current class should be met through a non-recoverable (NSW) government grant and that the access charges should be reviewed to determine an appropriate level of user contribution to ongoing maintenance.

On the Cowra-Demondrille line, where the benefits of retaining the line were ambiguous, the report recommended that a detailed independent study of the potential use of the lines for the movement of containers and non-grain freight be undertaken. The report also noted that the net present value for upgrading the Weemelah-Camurra and Boree Creek-The Rock lines to a sustainable standard was negative. The report recommended that a cost-sharing agreement be negotiated between the asset owner and industry for upgrading the Weemelah-Camurra and Boree Creek-The Rock lines. If such an agreement could not be reached, then the lines should be closed.

In 2010, the former NSW Government published its preliminary response to the Review, in which it agreed to fund the stabilisation of the recommended grain lines and conduct a review of access pricing.[5]

[5] Stabilisation involves asset replacement of timber sleepers and bridge assets to a specified standard for trains operating on the line. These standards relate to the current nominated class of the track – eg, 'Class 5' or 'Class 3'.

3 Our proposed approach to the review

IPART has considerable experience in determining prices for industries where the costs of providing a service are shared between the government and users, including the public transport and bulk water industries. For example, in our most recent CityRail[6] determination, we set fares by:

- establishing the efficient costs of providing CityRail services, taking into account an appropriate return on capital investment, depreciation allowance and operating costs
- deciding on the proportions of costs that should be borne by government and by users, based on the value of external benefits that accrue to the general public from the provision of CityRail services, and taking account of the implications for the affordability of fares and the competiveness of CityRail services compared to alternative modes of transport (particularly private vehicles)
- deciding on an appropriate pricing framework that sends efficient price signals to users and investors.

We have developed a proposed approach for the grain line review that draws on this experience and takes account of the requirements in the terms of reference for this review, but recognise that the rail network competes with road. We propose to assess the grain line network by line, which is the same approach taken in previous reviews by the Australian and NSW governments. For each line, we will take the following steps:

1. Deciding on the total costs to be recovered from users through access charges by:
   a) Establishing the total efficient below rail costs of the line. This will also help us understand the total revenue required for the future sustainability of the network.
   b) Deciding on the appropriate level for the government grain line subsidy and thus the share of efficient costs to be allocated to users. This will involve considering the external costs and benefits that accrue to the general community as a result of the operation of the grain line.

6 CityRail is the state government-owned agency which provides passenger rail services in suburban Sydney and extending to the Hunter, Central Coast, Blue Mountains, Southern Highlands and South Coast regions.

c) Recommending the share of efficient costs to be allocated to users, based on an understanding of the constraint that competition from the alternative road network places on access charges. This will involve establishing the extent to which road competes with the grain lines and the comparable costs of transporting grain by road to identify the 'cross over' point at which road becomes a cheaper transport option than rail.

2. Estimating the current and forecast demand for the line from grain and other traffic, including the expected change in demand from a change in access prices. This will allow us to calculate the access price level by determining how the costs to be recovered through access charges should be spread across users of the grain line network.
3. Deciding on the access pricing arrangements and recommending proposed prices in line with these arrangements.
4. Considering the implications of our proposed access prices, including whether they are consistent with users' willingness and capacity to pay and whether a transition path from the current to the proposed price level is required.

Each of these steps is discussed briefly below, and the issues we will need to consider at each step are discussed in detail in the following chapters.

3.1 Establishing the total efficient below rail costs of each grain line

To decide on the total costs to be recovered from users through access charges, we first need to establish the total efficient costs of providing and maintaining the grain line network's below rail infrastructure. This will establish the total cost of ensuring the sustainability of the lines, and thus the total revenue required from government subsidies and access charges. In line with our usual practice (and good regulatory practice) we will only include costs we consider to be efficient in this calculation, on the grounds that users should not be asked to pay for costs that are incurred through inefficient business practice.

We will also estimate the above rail operating costs, so that we can compare the total cost of transporting grain by rail and road (in step 1c). This is relevant because producers pay for the total cost of train haulage services, not just the access price.

Chapter 4 discusses the key issues that we will consider in establishing the total efficient costs of the grain lines.

3.2 Deciding on appropriate level for the grain line subsidy and thus the share of efficient costs to be allocated to users

To decide what share of the total efficient costs should be recovered from users through access charges, we will first establish the appropriate share to be paid by the NSW Government (or NSW taxpayers). As we have stated in previous reports, we consider it appropriate for the Government's share to be roughly in line with the value of the external and other benefits (minus any external costs) that accrue to the general community as a result of the operation of the grain lines. Thus the users' share is the amount remaining when the Government's share is subtracted from the total efficient costs.

One of the key findings of the final report of the NSW Grain Freight Review was that if the grain lines were closed, the increased heavy vehicle traffic on the road network would increase the cost of road provision and maintenance above the cost of providing the grain lines. While this value has been estimated in previous reviews, we will update this analysis for each line.

Chapter 5 discusses the key issues to be considered in deciding on the share of efficient costs to be allocated to users.

3.3 Considering the constraint competition from roads places on access charges

While the previous step broadly establishes the appropriate users' share, our recommendation on this share also needs to take account of the extent to which increases in access prices will make the grain lines uncompetitive compared to road transport, and thus result in grain traffic shifting from these lines to local and regional roads.

Therefore, we will examine the comparable cost of transporting grain by road, including above road operating costs, to identify the 'cross over' point at which road becomes the cheaper alternative. We will also examine the extent to which the provision of roads is subsidised by governments and how ongoing policy developments in road user charging may affect the costs borne by users in future. We will take these issues into account when determining our recommendation on the share of efficient costs that should be borne by users.

The key issues we will need to consider for this step are explored in Chapter 6.

3.4 Estimating the current and forecast demand for the grain line network from grain and other traffic

Before we can translate the recommended users' share of efficient costs into prices, we need to estimate the current and the forecast demand from grain and other traffic over the price setting period (5 years). The level of demand on a line indicates how the costs to be recovered through access charges should be spread across users of that line. One of the complicating factors in forecasting demand for the grain line network is that the industry is characterised by highly variable supply, which is seasonal and heavily contingent on weather, crop disease and other climate-related conditions. In addition, demand will be influenced by the prices that are set.

The key issues associated with estimate demand are discussed in Chapter 7.

3.5 Deciding on the access pricing arrangements and recommending prices

We also need to decide on the pricing arrangements – including the types and structure of prices – before we can translate the users' share into prices. The above steps can be thought of as determining the appropriate price level to be recovered from users. But we also need to consider pricing structures. To make this recommendation, we will consider the access pricing principles that currently apply to the grain line network, and the various options for access pricing arrangements available. We will also consider whether governance reforms would assist in implementing new pricing arrangements.

These issues are discussed in Chapter 8.

3.6 Considering the implications of our proposed access prices

In line with our usual practice, before we finalise our recommended access prices, we will consider the implications of these prices on stakeholders, and whether they achieve a reasonable balance between the various objectives implied by the terms of reference for this review. Two key issues we will need to consider are whether users are willing and able to pay for any increase in access prices, and how the access prices will impact on the various stakeholders, including grain growers, train and heavy vehicle operators, rail and road infrastructure owners and local and state governments. A change in access prices may also lead to a change in demand for the grain line network.

These issues are explored in Chapter 9.

4 Establishing the total efficient below rail costs of each grain line

The first step in our proposed approach is to establish the total efficient below rail costs of each grain line. As Chapter 3 noted, this will establish the total cost of ensuring the sustainability of the lines, and thus the total revenue required from government subsidies and access charges.

Some of the key issues we will need to consider in this step include:

- Should the efficient below rail costs include direct costs only, or full economic costs?
- How should we estimate these costs?
- Should the condition of the below rail assets influence how we estimate these costs?
- Should the impact of below rail decisions on above rail operations costs be taken into account?

Each of these issues is discussed below.

4.1 Should the efficient below rail costs include direct costs only, or full economic costs?

Under the current NSW Rail Access Undertaking, those who use or seek access to the grain line network are to negotiate the access price they pay with the infrastructure owner. The undertaking requires that an individual user's access price at least reflect the **direct costs** associated with their use of the network (known as the floor price), and is not more than the **full economic costs** of the sectors they use calculated on a standalone basis (known as the ceiling price). In practice the negotiated access price is also affected by the competition from road which means full economic costs cannot be recovered.

The undertaking defines direct costs as efficient forward-looking costs that vary with usage and include a charge for variable Major Periodic Maintenance (MPM) costs, but do not include any depreciation or rate of return. It defines full economic costs as line (or sector) specific costs that include a rate of return and depreciation and an allocation of non-sector specific costs such as train control and overheads.

As noted in Chapter 2, the former NSW Government agreed, in its preliminary response to the NSW Grain Freight Review, that it would fund the stabilisation of the grain lines. This suggests that the costs of this stabilisation should not be recovered through access prices, and that only the costs of ongoing maintenance and any future upgrades should be recovered.

As part of this review we have been asked to identify the efficient costs of providing grain freight services, which includes both the direct costs and the full economic costs of operating the grain lines. However, the terms of reference do not direct us to use either of these costs as the basis for setting access prices. We note that currently, CRIA recovers only the direct costs of the network through access revenue and line subsidies and does not receive any return on capital. Given the extremely small proportion of revenue received through access charges and the reality of road competition faced by the grain lines, we are inclined to place more emphasis on identifying the efficient direct costs of the network.

While we will consider the value of the full economic costs for completeness, we acknowledge that this exercise is largely academic as this level of costs would not be able to be recovered from access seekers without resulting in all traffic shifting to the road network.

4.2 How should we estimate efficient below rail costs?

CRIA recently concluded a tender for maintenance and operations services on the CRN. The tender called for comprehensive network maintenance and operational services involving a mixture of remedial investment, ongoing maintenance and operational services, such as train control. Provided this tender process was conducted at arm's length and sufficient competition was present among bidders, the tendered prices represent the best method of estimating the efficient cost of undertaking these services.

However, it is not clear whether these tendered prices can be readily separated into the costs of stabilisation investment and those of ongoing maintenance by grain line. As a consequence, we may need to consider other suitable information to establish the efficient costs of operating the grain network for the next 5 years. In addition, the tendered prices represent the direct costs of operating the grain lines only, not the full economic costs. As discussed in section 4.1, we will also estimate the full economic costs for completeness, which include a rate of return on the asset base and return of it (depreciation).

4.2.1 Other suitable sources of information for estimating the direct costs

Two additional sources of information on the direct below rail costs are the findings of the GIAC review and the NSW Grain Freight Review on these costs. We could also benchmark these costs against other low-traffic freight lines in Australia, and compare them to cost estimates from other sources.

Using the findings of the GIAC review and NSW Grain Freight Review

Both the GIAC review and NSW Grain Freight Review analysed the costs of the road and rail grain transport networks. The GIAC final report published most of the detail behind its cost estimates (Table 4.1), but the NSW Grain Freight Review report contained only a high-level summary of the business case. We will seek detailed information on the NSW Grain Freight Review business case from the Australian Government as part of our review.

Table 4.1 Summary of GIAC's findings on the costs and revenues for some of the grain lines included in IPART's review

		Branch line length km	Average tonnes '000 pa	Access revenue $'000 pa	Annualised cost[a] $'000 pa	Annualised loss[a] $'000 pa	Cost recovery %	Profit/ tonne $
Northern	Camurra to Weemelah	85.7	167	57.6	1,639	-1,581	3.5	-9.5
	Burren to Merrywinebone	52.0	122	30.5	517	-486	5.9	-4.0
	Camurra to North Star	83.5	165	47.5	1,030	-982	4.6	-6.0
	Bogan Gate to Tottenham	115.1	170	65.5	1,066	-1,001	6.1	-5.9
Western	Gwabegar to Binnaway[b]	144.7	59	26.4	2,420	-2,394	1.1	-40.6
	Nevertire to Warren	20.2	27	4.1	803	-799	0.5	-29.6
Southern	Boree Creek to The Rock	57.4	88	26.0	1,199	-1,173	2.2	-13.3
	Koorawatha to Greenethorpe	21.5	40	5.8	291	-286	2.0	-7.1
	Rankins Springs to Barmedman[b]	115.3	80	32.2	1,712	-1,680	1.9	-21.0
	West Wyalong to Ungarie	40.4	41	7.3	214	-207	3.4	-5.0
	Ungarie to Lake Cargelligo	71.7	112	50.5	1,210	-1,160	4.2	-10.4
	West Wyalong to Burcher[b]	54.0	30	7.2	673	-665	1.1	-22.2
	Ungarie to Naradhan	60.4	84	34.1	632	-597	5.4	-7.1
	Griffith to Hillston	108.1	111	44.1	697	-653	6.3	-5.9
	Willbriggie to Yanko[b]	40.4	23.	4.2	551	-547	0.8	-23.8
	Totals	1,070.4	1,319	443.0	14,653	-14,210	3.0	-10.8

[a] This is not the annual cost, but the annualised cost over a 4-year period.

[b] These lines are included for information only. They were not considered in the NSW Grain Freight Review (2009) and subsequently, are not included in the scope of this review.

Note: The GIAC review considered only the 'restricted' lines within the grain line network; that is, it did not consider the Class 3 lines that are also used largely for transporting grain.

Source: GIAC (2004).

GIAC also calculated the costs of upgrading and sustaining condition on these lines. Table 4.2 summarises GIAC's calculations for each of 3 upgrade scenarios. Scenario 1 represents limited steel resleepering, limited new ballast, and bridge replacement as required to achieve 19 tonne axle mass limits and maximum speeds of 30 km/hr loaded (50 km/hr empty). Scenario 2 represents more extensive steel resleepering and new ballast, along with long welding of existing rail to achieve maximum speeds of 50 km/hr loaded (80 km/hr empty). Scenario 3 represents resleepering, ballast and bridge work as in scenario 2, but also continuously welded rail to achieve 23 tonne axle mass limits

Table 4.2 Summary of GIAC' findings on the costs of upgrading and sustaining condition on some of the grain lines included in IPART's review

		Line upgrading scenario		
		1 **$m**	**2** **$m**	**3** **$m**
Northern	Camurra to Weemelah	12.2	29.0	35.9
	Burren to Merrywinebone	7.1	17.4	21.6
	Camurra to North Star	3.0	3.0	3.0
	Bogan Gate to Tottenham	18.6	40.9	50.2
Western	Gwabegar to Binnaway[a]	25.5	50.5	62.2
	Nevertire to Warren	4.2	5.9	6.7
Southern	Boree Creek to The Rock	9.6	20.5	25.2
	Koorawatha to Greenthorpe	3.8	7.4	9.2
	Rankins Springs to Barmedman[a]	13.4	35.2	44.5
	West Wyalong to Ungarie	0.9	0.9	0.9
	Ungarie to Lake Cargelligo	9.5	23.7	29.6
	West Wyalong to Burcher[a]	5.5	15.6	20.0
	Ungarie to Naradhan	1.3	1.3	1.3
	Griffith to Hillston	10.2	31.9	40.6
	Willbriggie to Yanko[a]	4.1	12.1	15.4
	Totals	128.7	295.4	366.4

a These lines are included for information only. They were not considered in the NSW Grain Freight Review (2009) and subsequently, are not included in the scope of this review.

Source: GIAC (2004).

The work done for these prior studies could potentially shed some light on the questions facing us in this review.

IPART seeks comments on the following

1 How relevant or useful now are the inputs and conclusions of the 2004 GIAC review, and the 2009 NSW Grain Freight Review? For each these reviews, what assumptions, if any, should be modified in light of subsequent experience or new information?

Benchmarking against other low-traffic freight lines in Australia

Cost benchmarking can be useful if relevant unit cost data can be derived for sufficiently similar railway lines elsewhere in Australia. Any lines included in such a benchmarking analysis should have similar seasonal and low traffic levels to the NSW grain lines. Grain lines in other states, such as Western Australia, South Australia, Victoria and Queensland are likely to be the closest comparators. Appendix C provides a summary of each of these jurisdictions' grain industries, rail networks and any recent reviews.

Comparing with cost estimates from other sources

In light of the inherent uncertainties surrounding rail infrastructure costing, it would be ideal to be able to compare cost estimates derived from different sources. However, it would be necessary to put these cost estimates onto a common basis. For example, the costs of stabilisation investment for certain lines would need to be separated from the ongoing maintenance costs once these lines are stabilised, because different funding sources may be invoked for these types of cost.

The GIAC report goes some way to separating these types of cost for some of the branch lines.

4.2.2 Approach for estimating an asset base and determining return on assets and depreciation

Under the current access pricing arrangements, the upper bound of access prices is equal to the full economic costs including a rate of return on the asset base and return of it (depreciation). If we were to calculate the full economic cost, we would need to determine a rate of return and depreciation and also to estimate an asset base. As discussed in section 4.1, this exercise is largely academic as competition with road means that access charges cannot recover these costs under the current reality of competition from road.

However, if stakeholders consider that it is useful to estimate the full economic costs, we could use ones of the following approaches to estimate the value of the asset base:

- the opportunity cost (or scrap value) of the assets
- the historical or actual cost of the assets
- the book value of the assets
- the deprival value of the assets, which is the lower of the optimised depreciated replacement cost (ODRC) and the economic value.

Typically, the estimated value of the asset base varies widely, depending on which of these approaches is used. The lower band of the potential range for this value is zero. This would occur if all past capital expenditure was considered to be neither efficient nor prudent, and the existing assets were considered to be 'sunk assets' that have no scrap value or opportunity cost. The upper bound of the potential range is likely to be equal to the ODRC element of the deprival value of the assets. If stakeholders consider it useful, we will use one of these approaches to value the asset base of the grain line network. We will also calculate appropriate rates of return on and of the asset base. It may be useful to government to gain a complete understanding of the full economic costs of providing the grain line network.

4.3 Should the condition of the below rail assets influence how we estimate these costs?

The NSW Grain Freight Review recommended that most of the grain line network be stabilised to allow the network to operate class 48 rather than class 81 (main line) locomotives. Other than the stabilisation works, the key ongoing costs of operating the grain lines are track maintenance costs.

Track maintenance costs include fixed costs that do not vary by usage, and variable costs that vary by usage. Asset condition affects both of these types of cost. The fixed cost activities include replacing sleepers and repairing and replacing bridges. They are driven primarily by the passage of time, rather than by wear and tear caused by trains. For any given type of track maintained to a given condition, the fixed costs tend to be fairly constant amounts per kilometre per year.

The variable cost activities include replacing rail, rail profiling, tamping and realigning the track. These costs are driven primarily by the effects of trains running across the track. The damaging effect of tonnage accumulates over time.

The asset condition of a railway line directly influences the costs of maintaining the line. Typically, higher fixed costs are required to build a track of a higher standard, but the variable costs of maintaining the track are low. However, a poorer condition of track may be cheaper to build, but the variable costs of maintenance are high, as a train does more damage to a poorly maintained track than to a well-maintained track.

The total cost of maintaining a line in a given condition depends on the fixed and variable costs of the line in its current condition and also on the amount of traffic (number of gross tonnes). For each traffic level, there is one asset condition at which the total cost of maintenance is minimised. As such, it is optimal to maintain the track to that least-cost condition, given the expected level of traffic. For lightly trafficked lines, a lower asset condition is associated with least cost, while for more heavily trafficked lines track maintenance is minimised if asset condition is higher.

As efficient costs depend on the traffic load, it is necessary to form a view as to the most likely traffic levels on each of the lines in question. Chapter 7 discusses the outlook for the NSW grain industry and level of demand on the grain line network.

4.4 Should the impact of below rail decisions on above rail operations costs be taken into account?

The track condition (or track standard) affects both the above and below rail costs for a line, influencing the overall rail freight costs. For tracks with a lower track standard (such as the grain lines) the below rail costs are generally lower, but the above rail costs (incurred by the train operators and passed on to users) are higher. For example, when compared to a Class 3 line, a Class 5 line has lighter, cheaper, older rails. As a result, a train's speed and axle load is restricted. The train operator must use a lighter branch line locomotive (such as a class 48 locomotive) at low speed on a Class 5 line. If the operator could have used a main line locomotive (such as a class 81 locomotive) at higher speed, as a Class 3 line would allow, then it could reduce cycle times, crew costs, and its locomotive fleet.

Therefore, there is an inverse relationship between below rail and above rail costs. Higher track standards would reduce train operators' costs, but would increase below rail costs which in turn could flow through as higher access prices.

IPART seeks comments on the following

2 In establishing pricing principles for access prices, should the impact of improvements in below rail investments, and operation and maintenance decisions on above rail operators' costs be taken into account? If so, how?

5 Deciding on the share of efficient costs to be allocated to users

To decide what share of the total below rail costs should be recovered from users through access charges, we need to first establish the appropriate share to be paid by the NSW Government (or NSW taxpayers). To do this, we need to estimate the value of the external costs and benefits, and any other benefits that accrue to the general community as a result of the operation of the grain lines. The Government's share will be roughly in line with the net benefits of rail compared to road. The users' share will be the amount remaining when the Government's share is subtracted from the total costs (subject to the impact of competition from roads, as discussed in the next chapter).

5.1 How should we estimate the external costs?

Both the NSW Grain Freight Review and GIAC review specifically considered the external costs of rail and road transport. These costs included contributions to noise, air, water, and greenhouse gas. While both reviews also considered accident costs, the GIAC considered them to be external costs, while the NSW Grain Freight Review did not.

The GIAC's estimates of the external costs are shown in Table 5.1. The GIAC concluded that this value represented such a small proportion of the total cost of transporting grain by rail or road, that the external costs were not significant. The NSW Grain Freight Review's conclusions on external costs are not clear, since its calculations were not publicly disclosed.

Table 5.1 Estimated external costs of rail and road transport

Externality	Road (cents/ntk)	Rail (cents/ntk)	Difference (cents/ntk)
Noise	0.003	0.000	0.003
Air	0.000	0.000	0.000
Greenhouse	0.170	0.064	0.106
Congestion	0.000	0.000	0.000
Accident	0.700	0.024	0.676
Total	**0.873**	**0.088**	**0.785**

Source: GIAC (2004).

Given this prior research we are inclined to base our estimates of the external costs on the results of the GIAC report, updated by CPI to reflect current prices.

IPART seeks comments on the following

3 Are GIAC's estimates a reasonable basis to assess the external costs of road and rail? Do these estimates or the way they were calculated require updating to reflect any changes? How much difference might that make to the overall conclusions of GIAC?

5.2 How should we estimate the external benefits?

As Chapter 3 noted, the largest value the community accrues from the operation of grain lines is the increase in road costs that this avoids. Therefore, we will need to estimate the costs to the road network if a grain line were to be closed, and all the grain traffic on the line shifted to road traffic. The increase in road costs associated with such a shift will depend on:

- the road type, length and existing condition
- the requirements for major renewals or replacements of bridges to cope with the increased heavy vehicle traffic
- the type and frequency of heavy vehicles that use the road.

To estimate these costs, we propose to:

- identify the alternative roads that compete directly with the grain lines, including the current type and existing condition of those roads
- estimate the costs to these roads of the increased heavy vehicle traffic, including routine maintenance, capital upgrades and externalities associated with heavy vehicle road use
- estimate the 'above road' cost of transporting grain on the identified road routes to compare this with the equivalent cost of transport grain by rail
- consider how ongoing developments in heavy vehicle road user charging and freight network planning may affect the relative costs and hence, modal choice.

Some of the key issues we will need to consider as part of this analysis are discussed below.

5.2.1 How should we identify the alternative road routes to the grain lines?

There are a number of factors that influence grain producers' choice of transport mode, not just the relative costs. The NSW Grain Freight Review found that grain to be used for stockfeed was likely to be handled by trucks, due to the fact it was destined for multiple, dispersed customer locations. In contrast, grain for export was more likely to be moved to a grain consolidation facility at a modal junction by truck or rail, and then by rail on the main line to port. This suggests competition between

the grain line and road networks appears to be strongest for grain, and potentially other freight, that needs to be transported to the main line to go to port.

The GIAC report assumed that in the event of a grain line closure, silos at the end of that line would remain open. The GIAC report estimated costs based on the shortest road route from these silos to the nearest consolidation point in the direction of the port. This was considered to be the primary route. Table 5.2 lists the competing road routes that were used in the GIAC analysis based on length, type and condition.

Table 5.2 Alternative road routes used in the GIAC analysis

	Grain line	Length	Alternative road route	Length	Road type and condition
Northern	Camurra to Weemelah	86	Moree to Weemelah	132	Long route, some unsealed sections
	Burren to Merrywinebone	53	Bellata to Merrywinebone	108	Long route, sections unsealed, variable condition
	Camurra to North Star	84	Moree to North Star	90	Long route, unsealed, variable condition
	Bogan Gate to Tottenham	115	Narromine to Bogan Gate / Tottenham to Tottenham	144 / similar	Long route, mostly sealed, variable condition
Western	Nevertire to Warren	20	Nevertire to Warren	18	Short route, state highway
Southern	Boree Creek to The Rock	57	Newell Highway	59	Medium-distance, sealed
	Koorawatha to Greenthorpe	21	Stockinbingal to Greenethorpe	98	Long route, potential for some use of state highway
	West Wyalong to Ungarie	40	West Wyalong to Ungarie	40	Medium-distance, sealed
	Ungarie to Lake Cargelligo	71	West Wyalong to Ungarie to Lake Cargelligo	116	Long route, sealed, passes through Ungarie
	Ungarie to Naradhan	60	West Wyalong to Naradhan	106	Long route, part sealed
	Griffith to Hillston	108	Hillston to Goolgowi	61	State highway

Note: The GIAC report considered only the 'restricted' or Class 5 grain lines, so not all of the lines under consideration in this review are listed. For the grain lines not examined in the GIAC report, we propose to use the same methodology to estimate the best alternative road route.

Source: GIAC (2004).

Since the GIAC report, there have been some changes in the grain industry, which may have implications for the alternative road routes. These include changes in:

- the relative export and domestic demand for grain, particularly as feedstock
- the type and condition of the roads identified above, including an expanded Higher Mass Limits road network
- the use of on-rail silos – while traditionally, grain produces have used on-rail silos, it may have become more common to by-pass these silos, and deliver grain directly to super sites or off-rail silos.

IPART seeks comments on the following

4 Is it appropriate to use the methodology and assumptions from the GIAC report to estimate the competing alternative road routes to the grain lines?

5.2.2 How should we estimate the costs to these roads of the increased heavy vehicle traffic?

Similar to rail, road infrastructure costs consist of:

- the capital costs of building or upgrading the road, which are fixed and do not vary with traffic types and levels
- the operating and maintenance costs, which result from damage caused by traffic levels and types.

Also similar to rail, there is a trade-off between the capital costs of building or upgrading the road and routine maintenance costs. In general, a high-quality road like a state highway is built to withstand a high concentration of heavy vehicle traffic. Typically, it will have multiple lanes, sealed shoulders and good pavement delineation. While this type of road is more expensive to build and upgrade, the costs associated with additional heavy vehicle traffic are likely to be relatively low.

On the other hand, regional and local roads – which are likely to form the majority of the alternative road routes that compete with the grain lines – are built to withstand medium to low traffic levels respectively. They may be double or single lane, and may have little or no shoulder and a thinner pavement surface that is more susceptible to damage from heavy vehicles. Some sections may be unsealed. These roads are cheaper to build, but have a higher cost of maintenance associated with small increases in heavy vehicle usage.

For its review, GIAC obtained estimates of future annual maintenance costs, pavement renewals and other non-annual costs from the RTA and local governments. It then calculated the total additional road cost for each alternative road route over a 20-year period. The results of this analysis are shown in Table 5.3.

Table 5.3 GIAC's findings on additional road infrastructure upgrading costs if grain lines were closed

	Grain line	Alternative road route	Total additional road cost ($m)	Average cost per tonne ($/tonne)
Northern	Camurra to Weemelah	Moree to Weemelah	6.5	1.9
	Burren to Merrywinebone	Bellata to Merrywinebone	15.5	6.4
	Camurra to North Star	Moree to North Star	10.2	3.1
	Bogan Gate to Tottenham	Narromine to Bogan Gate / Tottenham to Tottenham	18.8	5.5
Western	Nevertire to Warren	Nevertire to Warren	0.1	0.2
Southern	Boree Creek to The Rock	Newell Highway	5.0	2.8
	Koorawatha to Greenthorpe	Stockinbingal to Greenethorpe	5.2	6.5
	West Wyalong to Ungarie	West Wyalong to Ungarie	1.8	3.0
	Ungarie to Lake Cargelligo	West Wyalong to Ungarie to Lake Cargelligo	7.3	3.3
	Ungarie to Naradhan	West Wyalong to Naradhan	12.6	7.5
	Griffith to Hillston	Goolgowi to Hillston	3.3	1.5

Note: Total cost estimates are the net present value of upgrading costs over 20 years using a 10% discount rate.
Source: GIAC (2004).

The NSW Grain Freight Review undertook a similar road cost analysis over a 30-year period. It determined average annual MPM and routine maintenance costs from estimates in the Institute of Public Works Engineering Australia (IPWEA) report on *Road Asset Benchmarking Project: Road Management Report* (2006).

In addition, we note that the RTA has undertaken recent analysis on the marginal cost of road wear in NSW associated with heavy vehicle activity, based on road category and pavement types.

As noted in Chapter 3, we consider that, ideally, all cost estimates should be based on efficient costs. However, in the absence of an objective source that can provide efficient road cost estimates, we may need to use actual cost estimates for this part of our analysis.

IPART seeks comments on the following

5 What assumptions, methodology and data should IPART use to estimate the maintenance and capital costs associated with increased heavy vehicle traffic on the road network if the grain lines were closed? Are the methodology and assumptions used in the GIAC report reasonable? Have there been any changes since the GIAC report that would affect the analysis significantly?

5.2.3 How should we estimate the vehicle type?

The type of heavy vehicles used to transport grain will have an impact on the level of additional road wear and maintenance costs associated with the closure of a grain line, and on the above road operating costs passed on to users. Higher productivity vehicles like B-Doubles and B-Triples may be more efficient to run, and have cheaper operating costs per tonne of grain. However, they cause greater levels of road wear, because road wear depends largely on vehicle mass and axle type.

The NSW Grain Freight Review used 3 vehicle types in its analysis – semi-trailer combination, B-Double and B-Triple. It assumed that grain would be moved by a single vehicle type rather than a combination. However, it noted that B-Triples were not permitted on a majority of the roads considered in its analysis.

IPART seeks comments on the following

6 What assumptions in relation to vehicle type(s) should we base our analysis of the costs associated with additional heavy vehicle use and above road operating costs?

5.2.4 How should we estimate the increased traffic on the road network?

The frequency of heavy vehicles on the alternative road routes will also influence the total cost of routine maintenance and whether capital upgrades are necessary. We propose to calculate the increase in heavy vehicles based on tonnes of grain that are transported by the grain lines, divided by the maximum weight limit allowed for the chosen vehicle type(s). The current and forecast demand on the grain lines is discussed in Chapter 7.

6 Considering the constraint competition from roads places on access charges

In recommending the share of costs to be allocated to users, we need to consider the constraint that the competition the grain line network faces from road places on access charges. This involves establishing the extent to which roads compete with the grain lines and the comparable costs of transporting grain by road, to identify the 'cross over' point at which road becomes a cheaper transport option than rail. This analysis will also highlight the need for governments to get road user pricing right, as distortions affect the sustainability of pricing outcomes for competing modes such as rail.

The sections below discuss how we should estimate the comparable cost of transporting grain by road, and several other issues related to the relative competitiveness of road and rail, including the non-price factors that influence the decision to use road or rail for grain transport, how heavy vehicle road costs are currently recovered and the likely implications of current heavy vehicle network planning and charging reforms.

6.1 How should we estimate the comparable cost of transporting grain by road?

As discussed in Chapter 2, the heavy vehicle road user prices are determined by the NTC. Therefore, the below road costs of transporting grain by rail that are passed onto users are easy to establish. However, as discussed in section 6.3 below, the difficult issue will be establishing the extent to which these costs reflect the full costs that heavy vehicles transporting grain impose on local and regional roads (or the extent to which these costs are subsidised by governments and other users).

We will also need to estimate the above road (or truck operating) costs passed on to users. These operating costs may vary by vehicle type, distance travelled and to some degree, and the type and condition of the road itself (which may restrict the allowed speed and weight of the vehicle).

The NSW Grain Freight Review took into consideration the capital costs of the truck fleet, driver costs, fuel costs (including the fuel excise) and vehicle registration fees. It estimated that these above road costs of transporting grain to a consolidation centre or super site by road ranged between $0.08 and $0.10 per net tonne kilometre.[7]

IPART seeks comments on the following

7 What are the main components that contribute to the above road costs for heavy vehicle operators carrying grain, and are the above road costs of $0.08 and $0.10 per net tonne kilometre, estimated by the NSW Grain Freight Review, a reasonable estimate?

6.2 What non-price factors influence the rail-road decision?

The choice of transport mode involves a trade-off between cost and other service quality factors. These may include:

- storage and handling costs
- contractual arrangements with grain handlers/consolidated storage facilities
- door-to-door service, and
- availability of rolling stock.

IPART seeks comments on the following

8 What other considerations are relevant to the decision to transport grain by road or rail? How important are access prices in this decision?

6.3 How should we take account of the way heavy vehicle road costs are recovered in conducting this analysis?

The costs to the road network that result from additional heavy vehicle traffic have to be paid for somehow. It is arguable that, in aggregate, heavy vehicle road users pay for these costs through vehicle registration and fuel excise charges that are determined by the NTC. These charges are calculated on a uniform basis to recover the average aggregate expenditure on roads attributed to heavy vehicle use. Revenue raised from these charges is loosely hypothecated to state and local road authorities to pay for future road costs.

Local governments have the financial responsibility for local and regional roads, including most of those that are alternative routes to the grain line network. However, the revenue local governments receive for road maintenance is not linked directly to the charges paid by heavy vehicle users of these roads. This is explained in more detail in Box 6.1.

7 Australian Government, *New South Wales Grain Freight Review*, September 2009, p 40.

This system of heavy vehicle cost recovery poses some problems for our analysis. Because these costs are averaged across the whole road network, rather than attributed to specific routes, an increase in grain traffic on the local and regional road network in NSW may result in increased road costs that are not recovered directly. Some portion of the costs may be recovered when the NTC recommends increased registration and fuel excise charges to reflect the increased road expenditure, but they still may not reflect the actual costs attributed to heavy vehicle use of the roads, and they may not be hypothecated back to the local road agency that incurs the costs.

Further, the costs will be borne by all heavy vehicle users via uniform registration and fuel excise increases, rather than attributed to the direct users of the road routes.

IPART seeks comments on the following

9 Are there anomalies in the existing arrangements for heavy vehicle road user charging which affects our analysis of the appropriate user share on the grain line network? How can we overcome these anomalies?

Box 6.1 Current heavy vehicle charging framework

The NTC determines nationally uniform heavy vehicle charges each year to recover the costs of road spending attributed to heavy vehicle use. The pay-as-you-go (PAYGO) system is based on the premise that all expenditure, including capital expenditure, is fully recovered in the year in which it is incurred. The PAYGO cost base is derived from arterial road expenditure that is reported by jurisdictions each year and local road expenditure, obtained from the Australian Bureau of Statistics (ABS).

Costs allocated to heavy vehicles include:

- marginal (attributable) costs of road wear for each type of vehicle
- a share of (common) road costs that benefit all road users, such as rest bays, signage, mass-related enforcement, repairing pavement damage due to weather and age and the costs of building a minimum standard of road or bridge.

Heavy vehicle charges are set using a combination of a fuel-based charge and a fixed registration charge specific to vehicle type. The registration charge is set to recover common costs while the fuel-based charge is set to recover attributable costs.

Each year the NTC undertakes an adjustment to charges based on any adjustments to annual road expenditure, road use, and proportion of vehicle types. Road use estimates are derived from the ABS Survey of Motor Vehicle Use statistics.

The NTC aims to ensure that road expenditure allocated to heavy vehicles in aggregate is fully recovered and that each vehicle class recovers its attributable expenditure so that there are no cross-subsidies between vehicle classes.

The NTC acknowledges the limitations of its PAYGO cost estimation and allocation system, but will continue to use it until a more appropriate mass-distance-location based charging system is developed.

6.4 How will heavy vehicle network planning and charging reforms affect the relative competitiveness of road?

Several of the reform processes underway currently may have implications for grain logistics. These include Infrastructure Australia's National Ports Strategy and National Land Freight Strategy, the NSW Freight Strategy and the Council of Australian Governments (COAG) Road Reform Plan.

6.4.1 Infrastructure Australia National Ports Strategy and National Land Freight Strategy

Infrastructure Australia (IA) is a statutory body which advises governments, investors and infrastructure owners on a wide range of issues. These include Australia's future infrastructure needs, mechanisms for financing infrastructure investments, policy, pricing and regulation.

The former Prime Minister asked IA and the NTC to develop a National Ports Strategy and National Land Freight Strategy for consideration by COAG in 2010. The National Ports Strategy aims to improve the efficiency of port-related freight movements across infrastructure networks, minimise externalities associated with such freight movements and influence policy making in areas relevant to freight. In December 2010, IA released the National Ports Strategy, which identified priority areas of focus including planning, improving landside efficiency – including road and rail links – and greater transparency and responsibility.

In February 2011, IA released a National Land Freight Strategy discussion paper. The paper highlights the need for a national integrated freight network and identifies key issues of governance, higher productivity vehicle access, direct charging for infrastructure, including roads, where efficient and practical, and access arrangements.

6.4.2 NSW Freight Strategy

The NSW Government is currently developing the NSW Freight Strategy in consultation with the NSW Freight Advisory Council. The strategy will provide a strategic framework and short, medium and long term priorities to improve freight movement and inform public and private sector investment decisions. One key focus is on improving integration of land use and transport in NSW.

6.4.3 COAG Road Reform Plan

In 2006, the Productivity Commission found that road pricing and regulatory arrangements hampered the efficient use and provision of transport infrastructure, increasing costs for both industry and government.[8]

In 2007, COAG set out an agenda for the reform of road infrastructure pricing and investment through a market-based approach – the COAG Road Reform Plan (CRRP). The first step was a new heavy vehicle pricing determination, released in December 2007, to ensure that heavy vehicles pay for access to the road network based on total recovery of historical road expenditures, with no cross-subsidies between different types of vehicles. Currently, the CRRP Project Board is undertaking a feasibility study on the merits of a mass-distance-location based heavy vehicle charging system. The study is due to be presented to COAG at the end of 2011.

IPART seeks comments on the following

10 What impacts will reforms to heavy vehicle network infrastructure planning and charging frameworks have on grain transportation on the NSW grain line network?

8 Productivity Commission, *Road and Rail Freight Infrastructure Pricing*, 22 December 2006, No. 41.

7 Estimating the current and forecast demand for the line from grain and other traffic

The fourth step in our proposed approach is estimating the level of traffic from grain and other sources for each line on the grain line network in each year of the pricing period. This level of demand is an important input from translating the recommended cost share to be borne by users into access prices: that is, access price multiplied by the use of the line should recover the users' share of the required revenue to sustain the line.

The demand for grain on the grain lines depends on a number of factors including grain production, the end use market destination for the grain and the extent to which the road network competes. The sections below outline the main issues we will need to consider in estimating demand.

7.1 How should we forecast grain production in NSW?

The supply of grain in the regions serviced by the grain lines is one of the factors that contribute to demand on these lines. NSW is broken up broadly into 3 grain growing regions – north, west and south NSW. As a whole, the industry is characterised by highly variable supply, which is seasonal and heavily contingent on weather, crop disease and other climate-related conditions. In recent years, grain yields of most crops across the state have been above the long-term average, with some growers recording the highest yields ever harvested on their properties for cereal crops.

NSW grain production is dominated by winter crops, including wheat, barley and oilseeds, such as canola. It produces over a third of Australia's winter crop harvest. In 2010/11, these crops are forecast to produce a record 15.3 million tonnes of grain, which is 96% higher than production in 2009/10. NSW also produces over half of Australia's summer crops, including cotton, sorghum, rice and sunflowers. In 2010/11, NSW summer crop production is forecast to be 2.6 million tonnes, which is 82% higher than in 2009/10.

However, as Table 7.1 highlights, NSW crop production varies widely from year to year. Excluding the forecast for 2010/11, production of principal winter crops in NSW over the past 10 years has ranged from 3.5 million tonnes to 12 million tonnes with an average of 8.4 million tonnes.

This makes it difficult to predict the level of demand on the grain line network for any one year. One option for addressing this difficulty is by using an average of historical levels of grain production in each of the regions.

Table 7.1 NSW crop production 2000-2011 (tonnes, 000s)

Production	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11[a]
Winter	10834	11171	3505	10768	10724	11983	3796	4007	9441	7771	15259
Summer	3366	3146	1582	1766	1766	2770	1033	1650	1426	1436	2612

[a] Forecast.

Source: ABARE, Australian Crop Report, No. 157, 15 February 2011.

IPART seeks comments on the following

11 Should we use an average of historical data to forecast grain production?

7.2 What are the end-use markets for grain?

There are 3 main markets for the grain produced in NSW – domestic, feedstock and export. Domestic uses include milling, malting and oilseed crushing, and provide a strong and steady base for the demand for grain. Feedstock includes grain used for cattle and poultry and is a growing market. The export market tends to be a residual market after domestic and feedstock demand has been satisfied. However, exports have been significant in the past 3 years due to large production of grains.

Each market for grain has its own supply chain characteristics. As noted in Chapter 5, grain for feedstock purposes tends to transported by road due to the flexibility of this transport mode and the dispersed nature of the end-use market. Grain for domestic use can be transported by road or rail, depending on customer location, cost and other supply chain factors. Grain for export is transported primarily by rail to centralised storage facilities and then via the main line to port.

7.3 What proportion of the grain freight task is contestable by rail?

Each grain growing region in NSW is served by both road and rail options, and grain may be stored on farm or transported to the bulk handling system or directly to end users by road, rail or a combination of both.

We propose to estimate the proportion of grain that is likely and able to be transported on the grain line network in each region. This includes grain that may be transported to port or to a consolidation facility by road at present.

In addition to the absolute level of production and end use destination, the proportion of the grain freight task that is contestable by rail may also depend on available capacity on the network – particularly the availability of trains in peak periods and other supply chain factors.

We propose to seek information from CRIA on the historical annual tonnages of grain transported on each of the grain lines. However, we will also need to consider:

- how to manage fluctuations in the use of the grain line network based on seasonal variations in grain production and availability of rolling stock
- the expected tonnes of grain transported on the grain lines that result from a change in the access price
- other supply chain factors that influence the road or rail decision, such as the growing trend in on-farm storage.

7.4 Is there demand for the network from other sources?

While the primary use of the grain lines is grain transportation, there may be other users of the network – such as containerised freight or other bulk mineral freight.

One of the key considerations in the business case that is examining the potential for reopening the Cowra-Demondrille grain line is whether there are other sources of freight that may supplement the demand on the network.

IPART seeks comments on the following

12 What proportion of the grain freight task that is being transported currently by road could be contestable by rail? Why is it not being transported by rail? Are there other sources of freight that are contestable by rail on the grain line network? If so, what are the impediments to transporting that freight on the grain line network?

8 Deciding on the access pricing arrangements and recommending prices

Once we have recommended the share of costs to be recovered from users (the amount of revenue that access prices should generate) and estimated the demand on the grain lines (the tonnes of freight and kilometres travelled on which access prices can potentially be levied), we need to decide the appropriate access pricing arrangements, and set recommended prices in line with these arrangements.

This step in our approach will involve addressing a range of issues – such as what type of prices should be levied, how should prices be structured, and whether prices should be the same for all users or differentiated on some basis. We also need to consider what criteria we should use to assess the different options and decide on the most appropriate arrangements.

The section below discusses the current principles for pricing access to the grain line network and current prices. The subsequent sections explore some of the criteria we could use in assessing the possible pricing arrangements, and then outline some of the alternative options and discuss their feasibility. The final section in this chapter discusses whether governance reforms would assist in implementing new pricing arrangements.

8.1 What are the current pricing principles and prices?

The NSW Rail Access Undertaking sets the broad principles for pricing of access to the grain line network and the rest of the NSW rail network. These include that:

- Access revenues from each Access Seeker must at least meet the Direct Cost imposed by that Access Seeker. In addition, for any Sector or group of Sectors, revenue from Access Seekers together with Line Sector CSOs (if applicable) should, as an objective, meet the Full Incremental Costs of those Sectors — the 'floor test'. Full Incremental Costs are all costs that would be avoided if a Sector was removed from the system.
- For any Access Seeker or group of Access Seekers, Access revenue must not exceed the Full Economic Costs of the Sectors which are required on a standalone basis for the Access Seeker or group of Access Seekers — 'ceiling test'.
- The Rail Infrastructure Owner's total access revenues together with Line Sector CSOs (if applicable) must not exceed the stand alone Full Economic Costs of that part of the NSW rail network for which it is the Rail Infrastructure Owner.

Within these broad principles, the price levels are negotiated between the rail infrastructure owner and the access seeker. Currently, access prices are not made public and no indicative access charges are published.

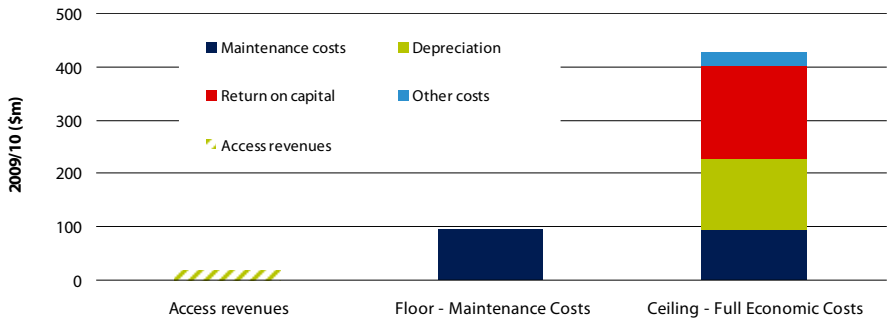
8.1.1 How are access prices levied?

Currently, access prices on the grain line network comprise a charge per train kilometre and a charge per gross tonne kilometre. These charges are standardised across the network, except for the Camurra to Weemelah line, which faces an additional charge of $1 for each tonne of grain transported.[9] Charges are different for passenger services, freight and grain services; however, these charges are not published.

8.1.2 To what extent do current access prices recover the floor and the ceiling costs of the network?

We do not have access to cost information for the grain line network only; however, we estimate that in 2009/10, the maintenance costs for the CRN as a whole (a proxy for floor costs) were just under $100 million. We estimate that the full economic costs (ceiling costs) were around $400 million (if the capital base was based on book value of the assets and an 8% rate of return was applied).[10] In comparison, the revenue raised through access charges for this network was $18 million, which reflects only 4% of our estimated ceiling costs and 19% of our estimated floor costs for the network (Figure 8.1). Cost recovery for the grain lines is likely to be even lower than these figures for the greater CRN suggest.

Figure 8.1 IPART estimates of floor and ceiling costs for the CRN, compared to access revenue received



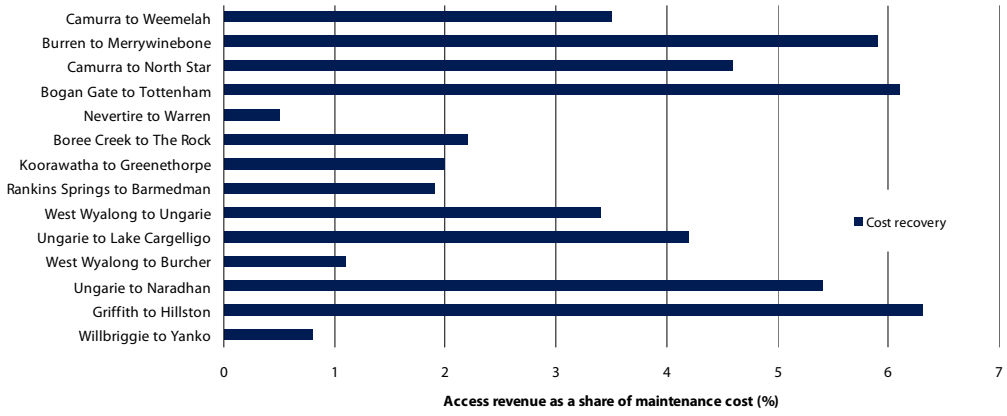
Note: The return on capital is based on a real pre-tax interest rate of 8% as allowed for the Hunter Valley Rail Network. This is applied to the book value for property, plant and equipment. Floor excludes government CSOs, which by definition have to make up the difference between ongoing costs and access revenues.
Source: NSW Access Undertaking; Rail Infrastructure Corporation Annual Report 2009/10.

9 The additional charge for the Camurra to Weemelah line was negotiated in order for the line to be reopened.

10 This is an estimate only with the asset base value derived from the book value in CRIA's annual accounts and the rate of return that is applied in the Hunter Valley Coal Network.

This view is supported by the findings of previous reviews of the grain line network, which have found that the level of cost recovery varies across the different lines, but is generally very low. For example, the GIAC review found that, for an average year, access revenues would recover between 0.5% and 6.3% of the floor or maintenance costs of each grain line (Figure 8.2). This means that the subsidies provided by the NSW Government make up the vast majority of funding for the grain line network.

Figure 8.2 Cost recovery of NSW grain lines in 2004



Source: GIAC 2004.

8.1.3 How have access prices changed over time?

From 2005/06 to 2009/10, the level and structure of access prices for the grain line network were held constant in nominal terms (which means that they declined in real terms) to coincide with a poor harvest period. However, in 2010/11, the access prices across the CRN increased by 14% on average as CRIA aligned its access price structure across the CRN. This included imposing a charge per train kilometre on the transport of grain. We estimate that the increase on the grain line network alone was larger at around 30%.

In 2009, an additional $1 per (net) tonne levy was also applied to grain transported on the Weemelah line in order to keep this line open.[11]

11 See http://www.graincorp.com.au/ir/media/2009%20Media%20Release/Weemelah%20Line%20Re-opening.pdf, accessed 11 April 2011.

8.2 What criteria should we use to assess potential pricing arrangements?

Based on the terms of reference for this review, our understanding of government objectives for access pricing and the principles of good regulation, we consider that economic efficiency should be one of the key criteria we use in assessing and recommending appropriate pricing arrangements. Other valid criteria include transparency, certainty and administrative simplicity.

8.2.1 What do we mean by efficient pricing arrangements?

Defining what we mean by efficient pricing arrangements for the grain line network provides us with a benchmark against which different approaches can be assessed. In general:

- an outcome is economically efficient if resources could not be reallocated to provide greater welfare elsewhere
- an efficient pricing scheme is one that leads to an efficient outcome.

Previous reviews of the grain line network have applied the concept of efficiency in determining whether to keep open, maintain or upgrade individual grain lines.[12] However, they have not generally considered the role of pricing in achieving such an outcome, which is the focus of our review.

Given our definition of an efficient outcome, the pricing arrangements should serve 2 key purposes. The first purpose is to provide a signal as to the commercial benefits of keeping the grain line open or investing in its upgrade. If these commercial benefits, plus any external benefits that accrue to parties other than users of the line, are lower than the costs of keeping the line open then it is economically inefficient to keep the line open. The same is true for decisions to upgrade the line.

In practice it is very difficult to obtain information about the commercial benefits of keeping a grain line open and to whom these benefits accrue. Demand for rail grain freight services will largely reflect how they compare to road grain freight services. This means that demand for rail freight will reflect:

- the price differential between road and rail freight
- other costs, such as double handling
- risks, such as storage risk
- the convenience of each type of freight including ability to move quickly, and
- the reliability of each type of freight.

[12] Grain Infrastructure Advisory Committee, *Report on Rail/Road Options for Grain Logistics*, January 2004; Australian Government, *New South Wales Grain Freight Review*, September 2009.

These factors will differ depending on where grain is coming from and where it is going to, and could change when there is a bumper crop. For example, for farms close to rail, rail will be a better alternative than it is for farms that would have to transport grain over long distances to access the rail network. During bumper crops, when more grain is exported, rail tends to provide better access into ports and to be better able to accommodate larger volumes of grain.

The access price is a mechanism for commercial operators to reveal the value that they place on their use of the rail line, and the value they place on upgrading of the rail line.

The second purpose of the pricing arrangements is to generate optimal use of the grain line, given that it is open. A very large proportion of costs of a rail network are incurred regardless of usage – including the capital investment in rail bridges, ballast and sleepers. This is particularly true of rail lines that are not capacity constrained, such as the grain lines. This means that it can be economically efficient to allow some users to use the rail lines at very low prices.

8.2.2 What other criteria are important for assessing access pricing arrangements?

Other criteria that we will take into account in our assessment of access pricing arrangements include transparency, certainty and administrative simplicity.

- Transparency means that access seekers have clear information and expectations about what price they can expect to pay for access to the routes they use on the network. Information provided would indicate how prices are calculated as well as the current price levels.
- Certainty means that access seekers can predict changes in price (and service levels). This is important because some decisions by access seekers require long-term certainty about prices and service levels. For example, in making decisions about train paths, rolling stock and where to invest in associated infrastructure on the network.
- Administrative simplicity means that the arrangements are practical and not costly for the rail infrastructure owner and Government to implement.

Currently, there is little transparency or certainty about access prices for the grain lines or other freight on the CRN. As noted in section 8.1, these are negotiated between the rail infrastructure owner and the access seeker. Little information on how prices are calculated or how they may change in the future is available publicly. Some rail networks and rail operators provide for greater transparency and certainty by publishing reference prices, which illustrate what the access seeker can expect to be charged for a standard level of service. We support publishing reference prices.

IPART seeks comments on the following:

13 Are there any reasons why reference prices should not be published for the grain line network and/or individual lines?

8.3 What are the possible access pricing arrangements?

We have identified a range of possible access pricing arrangements for the grain lines – including average pricing, long-term contracts, 2-part pricing, price discrimination, peak load pricing, capital contributions and franchising. The sections below briefly describe these options, and how they meet the criteria discussed above.

We note that when there are multiple objectives for pricing – as is the case with the grain lines (see section 8.2.1) – there may be a need for multiple pricing instruments within the pricing arrangements.

8.3.1 Average pricing

The simplest form of pricing is to set an average price that recovers the required revenue to maintain the line over a set period of time. This option is unlikely to be economically efficient, as it would not serve the second purpose of the pricing arrangements – encouraging greater use of the line (discussed in section 8.2). With this form of pricing, it would be difficult for a rail owner to justify turning down access seekers offering lower prices to use the rail network. Therefore, it could lead to lower usage, and therefore lower cost recovery.

The main advantage of average pricing is that it is simple to administer and can provide greater transparency and certainty. For example, average prices can be easily communicated to access seekers through reference prices.

8.3.2 Long-term contracts

Long-term contracting involves the rail infrastructure owner and access seeker agreeing to price outcomes over the contract period (5 years) in return for guaranteed service levels over that period.

This option would significantly increase the level of certainty. The grain haulage operators (and the grain producers who use their services) would have certainty on pricing outcomes for the period. The infrastructure owner would have certainty about the revenue stream available to fund maintenance and investments over that period.

Examples of the use of long-term contracts are common in other industries and include power purchase agreements for power plants. For this option to be feasible for the grain lines there may need to be broader governance reforms to enable the infrastructure owner and access seekers to coordinate their planning decisions (see section 8.7).

8.3.3 Two-part pricing

Two-part pricing is used for many large infrastructure providers to cover fixed costs with an access charge and marginal costs of usage with a usage charge. Typically, access is defined through a right to use a network over a fixed period of time. For example:

- water, electricity, gas and telecommunications for households are typically supplied on this basis with households paying a fixed annual amount for access to the network, and a variable usage charge to reflect marginal costs of use
- heavy vehicles are charged are charged a fixed annual registration fee for access to the road network, and a variable fuel charge to reflect marginal costs of usage.

Two-part prices can also be used for rail, although the access price is defined slightly differently than for other sectors. For rail, there is a fixed charge per train kilometre for a train to access the network and then a variable charge based on gross tonne kilometres. The access charge in this sense is related to use rather than a right of access.

One option for using 2-part pricing is to levy a fixed charge on train operators for the right to use of the network over a period of time (eg, 1, 2 or 5 years). Operators that do not pay the right-of-access fee at the beginning of the period are excluded from the use of the network over that period (or charged a much higher usage rate). If only one operator pays this fee, then this is similar to a franchise arrangement (discussed in section 8.3.7), although the infrastructure owner is still responsible for line maintenance. If multiple operators choose to pay the right-of-access fee, then the rail owner would be expected to ensure that the aggregate fee does not over-recover costs. The value of access would likely differ across access seekers because they would have different existing infrastructure and customer networks.

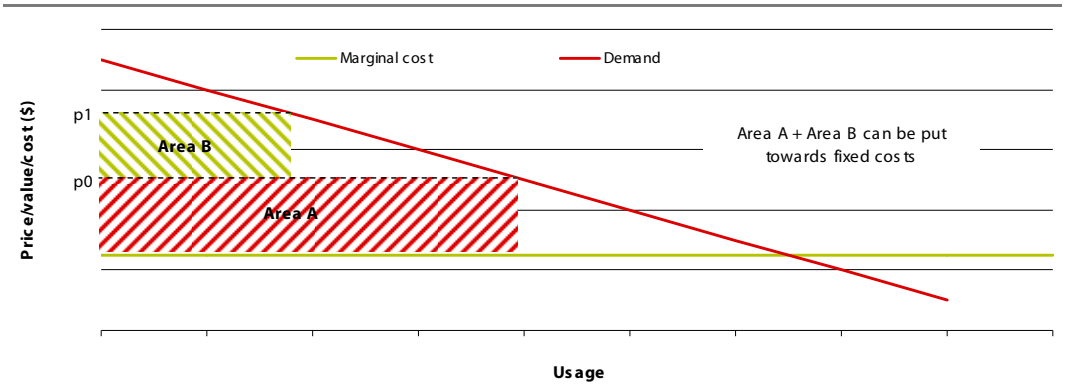
This option is similar to the sort of anchoring type of arrangements used in many industries, such as commercial property. Under these arrangements an anchor tenant is contracted at a discounted rate and additional future tenants are charged more.

8.3.4 Price discrimination

Price discrimination or differentiated pricing allows the rail infrastructure owner to set different prices for different access seekers with some limitations. The NSW Rail Access Undertaking allows for this kind of pricing, as it provides for prices to be negotiated between the infrastructure owner and the access seeker, with the only limitations being that the price is between the ceiling and floor price. Other access arrangements, such as the ARTC Interstate Access Arrangement, place greater limits on differentiation between access seekers.[13]

This option allows the infrastructure owner to increase its share of the commercial value accruing from the operation of the rail line, hence increase the extent to which it recovers the costs of the line. For example, in Figure 8.3, a price of p_0 is charged to all users. This generates revenues above marginal costs of Area A, which is put towards fixed costs. However, under price discrimination, a price of p_1 might be charged to customers with higher commercial value (eg, in peak season), and a price of p_0 might be charged to lower value customers. In this case, additional revenue of Area B is collected, which can also be put towards fixed costs.

Figure 8.3 Pricing discrimination



Source: IPART.

Under perfect price discrimination, the entire area under the demand curve would be captured by the infrastructure owner. However, in practice, it would be very difficult for an infrastructure owner to differentiate prices to this extent.

One downside of using a price discrimination approach is that it could lead to free riding by access seekers claiming to have a lower commercial value for use of the lines than they actually have. Thus it could lead to lower cost recovery. The current approach of negotiating access prices has led to a similar result.

13 Section 4.3 of the ARTC Interstate Access Undertaking prohibits the ARTC from differentiating on the basis of the identity of the access seeker or from differentiating where the characteristics of the services are alike and the applicants are operating in the same end market.

Another downside is that in the case of the grain lines, the access seekers' value is likely to depend largely on their customers' (the grain producers') value. The rail infrastructure owner is likely to have limited information about this value, which will make it difficult for it to differentiate prices successfully.

8.3.5 Peak load pricing

One type of price discrimination is peak-load pricing. Under this option, the access price may change because of:

- The time of the year — seasonal pricing might better differentiate demand for the rail network as during peak times road freight capacity may be limited.
- Demand for rail freight services (such as from bumper harvests) — when there is a bumper harvest road freight capacity is stretched, trucking companies increase their freight rates and demand for rail increases. The same could be done on the grain lines, by placing surcharge on rail use during such times, when it is not likely to have as large an effect on demand.

In the road freight industry, prices changing frequently to reflect demand for and supply of road freight, backhauling opportunities and costs. If rail access prices varied in a similar way then this would increase the cost recovery of the rail network, particularly through taking advantage of increased demand for rail when harvests are large. However, as in the case of price discrimination, the rail infrastructure owner may not have access to sufficient information to apply this approach successfully.

8.3.6 Capital contributions

Upgrades to the rail network may have commercial benefits in excess of costs, which may be distributed to particular access seekers. Requiring train operators to make (negotiated) capital contributions to the costs of upgrades provide a way for the infrastructure owner to obtain a signal of their commercial value.

Capital contributions have the same advantages and suffer from the same disadvantages as price discrimination. Where there are multiple access seekers, negotiations on capital contributions would be subject to the free rider problem. The infrastructure owner would have limited information as to the commercial benefit to be obtained from upgrades to the network, and to who these would accrue. In addition, it would be difficult to exclude future access seekers who did not contribute to the capital, although it would be possible to differentiate pricing for those who did not provide capital contributions.

8.3.7 Franchising

While not strictly a pricing structure option, franchising is an extension of the anchor tenant idea discussed in relation to 2-part pricing in section 8.3.3. Franchising involves an arrangement for exclusive control over a rail line by a particular train operator for a particular time period. The franchisee is responsible for keeping the line in a condition set out in its contractual obligations, and in return is able to set its own charges and allow or disallow access from other operators. A franchise could be combined with a pre-specified government contribution related to any benefits of keeping a rail line open that would not be captured by the franchisee.

This model has a number of advantages. First, negotiations for a franchise provide a strong commercial signal as to the value of keeping lines open — lines for which no one is willing to 'bid' may have insufficient commercial benefits to make them viable. Second, franchisees have much better information with which to price discriminate on access prices than the infrastructure owner. This means that they might bid more under a franchise arrangement than they would pay through any non-discriminatory access price.

The main downside of franchises is the difficulty in ensuring that lines are left in a similar or improved standard at the end of the franchise arrangement as at the beginning. However, this concern can be overcome with a diligent franchise contract which states the track condition level that is to be met at the end of the contract term.

A franchising arrangement may also provide a signal as to the value of upgrades of the network. Upgrades could be undertaken so long as the franchisee was willing to contribute the value within the franchise period that would accrue from the upgrade.

A franchise arrangement could result from a negotiation between the government and potential interested businesses or an auction process with a reserve set at the level necessary for maintaining the line to be economically efficient. The reserve would be set at the minimum level necessary to recover revenues sought from access seekers, similar to the current floor test.

Another downside is that a franchise arrangement could potentially lead to monopoly power for the franchisee. This is not likely to be a problem for the grain line network as the rail infrastructure owner does not currently have sufficient monopoly power to over-recover costs. However, if the competition provided by road was not considered sufficient on a particular line, some controls could put be in place to address this concern.

8.3.8 How practical are the pricing options?

Some of the pricing options considered above are unlikely to be practical for the grain line network under the current pricing principles in the NSW Rail Access Undertaking. For example, long-term contracting and franchising are not consistent with the principles in the undertaking, as these options require exclusions on access. Implementing either of these options would require changes to the current undertaking. In addition, many forms of price discrimination could be difficult and administratively costly for the rail infrastructure owner to implement.

Peak-load pricing, which is one form of price discrimination, or line surcharges (which already apply to the Camurra-Weemelah line), appear to have some advantages over the current approach. To implement peak-load pricing when demand is high – that is, in a bumper harvest – it would be necessary to clearly define when such pricing would apply, and determine the appropriate level of an applicable surcharge. One key issue includes whether such a surcharge would be applied across all of NSW at the same time, or whether they would only apply in areas where harvests were good. Rather than determining these features alone, a joint industry-rail owner governance arrangement might be better able to develop efficient pricing structures.

IPART seeks comments on the following

14 What pricing arrangements would achieve an economically efficient outcome for the grain line network while still encouraging rail use? Are there any transitional isssues associated with these options?

8.4 Do the current governance arrangements support an efficient pricing outcome?

The NSW Grain Freight Review recommended that industry and government collaboration should be encouraged to ensure a whole of supply chain approach is taken for the grain industry.[14] It also recommended greater coordination and planning to more effectively manage bumper harvests and peak-surge periods. These recommendations could also be relevant to the implementation of appropriate pricing of the grain line network.

8.4.1 How can government work with industry to achieve a better outcome?

Pricing should be interrelated with decisions about the standard of the network and its lines, efficiency of the network and co-investment by train operators. For this reason, establishing governance arrangements that support these decisions could be an alternative way of moving towards more efficient pricing arrangements.

14 Australian Government, *New South Wales Grain Freight Review*, September 2009, p 6.

Coordinated arrangements have been used in the Hunter Valley Coal Network with success (see Box 8.1). They have also been used overseas, typically when those seeking access are large enough that they would be able to represent their own interests against a monopoly infrastructure provider.[15] These arrangements complement independent regulation rather than substituting for it. For example, for the Hunter Valley Coal Network, IPART decides on the appropriate rate of return because this is unlikely to get agreement by industry, access seekers and the rail owner.

Box 8.1 The Hunter Valley Coal Network

For the Hunter Valley Coal Network, decisions on capacity augmentation are made jointly between the rail owner (ARTC), rail operators, mines and ports. Projects are approved by the coal mining industry prior to being undertaken and developed in conjunction with the industry. Project costs are then included into access prices through capital costs entering the capital base for which ARTC earns a return and receives depreciation. This model has worked well in the Hunter Valley to ensure that rail investment decisions align with the needs of customers and are fully funded by users.

For the grain line networks, the need for coordinated decision making differs from that for the Hunter Valley Coal Network. In particular, capacity constraints are not a feature of the grain line network, nor is there a need for investment to alleviate capacity constraints. However, there are areas where coordinated decision making would be useful, particularly in pricing. These include:

- changes to the below-rail network that could improve the efficiency of above-rail operations, such as
  - upgrading to deliver higher service standards
  - ability to load on line rather than on sidings
- changes that could reduce the costs of the below rail network
- decisions about when and how to undertake maintenance
- decisions on line closures
- pricing arrangements to meet cost recovery targets over medium term, including application of surcharges.

In particular, rail operators may be able to price-discriminate more effectively than the rail infrastructure owner. This is because they are often integrated logistics companies that better understand the alternatives available to their customers. A joint industry-rail owner governance arrangement may be able to take advantage of this information.

[15] For example, a number of UK airports go through a process of 'constructive engagement' with airlines regarding decisions about capacity augmentation and capacity utilisation.

Informally, there is already some degree of industry involvement in decision making. Potentially, formal arrangements could provide a better governance structure for pricing structures to be efficient and for prices to inform decisions about line upgrades, maintenance and closure. These could fit within a framework where lines would remain open only if certain cost recovery targets were met over a number of years. In addition to providing pricing structures and decision making more aligned to industry needs, this arrangement may also provide industry with greater certainty about the processes that would govern future access prices.

There are potential disadvantages of joint industry-rail owner decision making. Of primary concern is that arrangements would be used to favour incumbent industry players at the expense of potential entrants.

IPART seeks comments on the following

15 Is there benefit in establishing a grain industry planning and co-ordination group that has representatives from all parts of the grain industry including grain growers, grain handers rail operators and network owners to assist in decision making about infrastruture planning, pricing arrangements and willingness to pay?

8.4.2 Is there a need for a national approach to grain transportation?

One of the issues raised during the NSW Grain Freight Review was the interdependence between the states, particularly amongst the eastern states of NSW, Queensland and Victoria. Market developments have meant that state boundaries are increasingly irrelevant and road transport competes with grain across state boundaries without the same impediments as rail. This suggests that there may need to be more interstate coordination of the grain supply chain, greater jurisdictional cooperation and future planning for the supply chain, which covers the eastern states as a combined market.

IPART seeks comments on the following

16 Could the grain industry benefit from greater interstate coordination and planning of the eastern states grain supply chain?

9 Considering the implications of proposed access prices

The low cost recovery for the grain line network suggests that price increases are necessary to put the network in a more sustainable position, with less reliance on government funding. However, before deciding on such price increases, it is important to consider how they may affect usage of the network. That is, we need to consider access seekers and their customers, the grain producers, are willing and able to pay the higher charges, to ensure they do not lead to lower usage, and thus lower cost recovery on the grain lines and higher costs on the road network.

The sections below discuss a range of issues related to assessing willingness and ability to pay and whether a longer-term implementation plan may be required to minimise the impact to stakeholders and maximise use of the network.

9.1 How should we assess willingness and ability to pay?

'Ability to pay' measures whether a business (or household) would be able to accommodate higher prices within its existing budget. If a business was unable to pay, this means that it would be unable to make a profit at the higher price and would cease operating in that business. This could apply to rail operators, grain producers or other organisations within the grain supply chain.

'Willingness to pay' measures how much businesses (or households) would pay for the same service given the other options available to them. Willingness to pay will be less than ability to pay, as businesses will often change their behaviour rather than pay as much as they are able.[16] Willingness to pay is a better measure of how changes in access prices will change usage of the grain line network

[16] It is possible that ability to pay is less than willingness to pay. For example, if a household would be willing to pay half of their future earnings for treatment of a medical condition but was unable to do so because imperfect capital markets prevented them from borrowing against their future earnings then ability to pay would be less than willingness to pay.

A range of indicators can be examined to provide insight into willingness to pay for higher access charges. These include:

- **The relative size of the access charges compared to users' total costs.** Grain producers' choices about what to grow, where to sell, and how to transport grain will reflect the total costs of alternative options. If access charges are a small component of total costs, then the impact of changes in these prices on the choice of transport mode will tend to be smaller.
- **Who bears the costs of higher access charges**. If these costs are borne by grain producers then changes in access prices will have minimal impact on the choice of transport mode. However, if the costs are borne by rail operators then they could lead to changes in decisions about whether to provide services.
- **The pattern of usage of road and rail freight for different sub-markets.** The current competitive advantage of rail will be reflected in higher than average usage shares for rail in particular sub-markets.
- **Past and future changes in the efficiency and costs of road and rail freight.** Efficiency gains in rail or increases in costs for road will make rail more competitive, and increase the willingness of the industry to pay higher access charges.
- **How usage has responded to historical changes in access prices.**
- **Whether demand is more responsive at some times or for some routes than for others and hence the variation in willingness to pay.** This would reflect how the competitive constraint provided by road freight differs through time and across routes.

We expect to consider these indicators in more depth as part of the review. Some preliminary considerations are set out below.

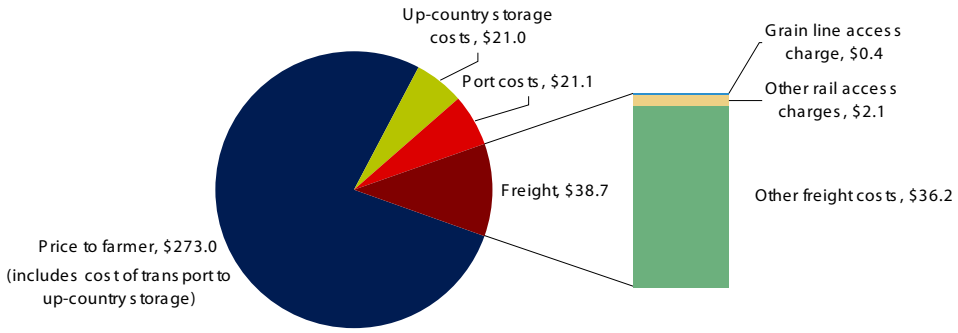
9.1.1 What is the relative size of access charges?

Currently, rail access charges for the grain line network make up a very small component of freight charges and an even smaller component of the price of grain. Figure 9.1 provides an indicative breakdown of costs along the supply chain for grain moved by rail from a farm to a storage facility and then to a port.[17] It indicates that for a typical tonne of grain, rail freight costs from the storage facility to the port would amount to around $40. Of this, rail access charges for the grain line network comprise only about 40 cents or 1%. Additional rail access charges for other parts of the NSW network would add around another $2.10 per tonne, which is still a very small component of freight costs. These additional charges depend on the distances travelled and the tonnes carried by the train relative to its own weight.

[17] There are many other supply chains, including transport from on-farm storage to domestic or export customers by road.

Rail freight costs of around $40 per tonne are around the same level as the sum of storage costs (around $20 per tonne) and port costs (around $20 per tonne). The grain producer receives a price of around $300 per tonne, although this varies considerably from year to year.

Figure 9.1 Indicative costs along the grain supply chain for grain transported from a farm, to a storage facility and then a port ($ per tonne)



Sources: GrainCorp — 2010/11 Export Freight Rates, accessed from http://www.graincorp.com.au/Documents/Export%20Freight%20Rates.pdf, 8 April 2011; average distance from port taken from Grain Trade Australia location differentials, accessed from http://www.graintrade.org.au/sites/default/files/file/Location%20Differentials/GTA_2010_2011_LDs_NSW_final_81010.pdf, 8 April 2011; storage costs and port costs from the Australian Wheat Board's estimated solo returns, http://www.awb.com.au/growers/awbgrainprices/esr/, accessed 8 April 2011; CRIA; ABARE 2010, *Australian grains: financial performance of grains producing farms 2007/08 to 2009/10*, May, p 10.

While these figures are representative, GrainCorp's indicative rates indicate that freight costs from storage facilities to port vary from $23 per tonne to $58 per tonne.[18] Storage costs also vary, depending on how long grain is stored.

This preliminary analysis on the relative size of access charges suggests that grain producers are likely to be willing to accommodate moderate increases in these charges, because the additional cost to them would be insignificant relative to volatility in grain prices. For example, in 2008/09, average grain prices received by producers fell by $76 per tonne, which is more than the total freight cost per tonne.[19]

18 GrainCorp, 2010/11 Export Freight Rates, http://www.graincorp.com.au/Documents/Export%20Freight%20Rates.pdf, 8 April 2011.

19 ABARE, *Australian grains: financial performance of grains producing farms 2007/08 to 2009/10*, May 2010, p 10.

9.1.2 Who bears the cost of higher access charges?

The willingness of the industry to pay higher charges will depend on who is likely to bear the burden of higher charges. The export price of grain is set by world prices and is not likely to be influenced by NSW grain exports. This means that increases in access prices will be borne by the NSW supply chain.

Within the NSW supply chain, increases in access prices are most likely to be borne by rail operators or by grain producers.

- rail operators will be forced to bear the costs of higher access prices if competition from road means that they are unable to charge their customers more without significant reductions in use
- grain producers will bear the costs of higher access prices if there is insufficient competition from road at the current prices charged for road and rail freight.

Costs may not be able to be borne by rail operators, unless they are currently making above the return that they require to operator trains. Historical difficulties in finding operators willing to run trains on the grain line network suggests that there is also limited scope for operators to adjust.

9.1.3 What is the current pattern of usage of rail and road?

As discussed in Chapter 7, we are seeking information on the share of the grain freight task currently completed by rail. This share will provide a guide as to the competitiveness of rail operations under current pricing arrangements. For journeys where most grain is transported by rail, rail is currently likely to have a cost advantage over road.

9.1.4 What are the differences in above road and above rail costs?

Road and rail freight rates provide a measure of the willingness to pay higher rail access charges. The NSW Grain Freight review suggested that road freight costs are between 8 and 10 cents per net tonne kilometre while rail freight costs are between 3 and 6 cents per net tonne kilometre.[20] Because access prices are only a small component of these costs, it may be possible to increase access prices substantially from their current levels before road and rail freight costs are similar.

However, these cost estimates may not reflect all the factors that influence road and rail freight costs, including double-handling costs from moving grain from farm to storage that could be avoided through road freight; differences in source and destination locations and journey length; and variability of fuel costs. When these factors are taken into account, competition from road appears to provide an important constraint on the willingness to pay higher access charges on many routes.

20 Australian Government, *New South Wales Grain Freight Review,* September 2009, p 4.

The costs and efficiency of road and rail freight are constantly changing, mainly for reasons that are not related to changes in access prices. Both road and rail freight have achieved substantial improvements in productivity over past decades. These have slowed more recently with rail costs for container freight being fairly stable since 2000/01 and road freight rates increasing since 2003/04.[21]

There are many potential changes that could impact on willingness to pay higher rail access charges in the future, including:

- higher road charges for the use of local roads by heavy vehicles
- increases in fuel costs
- more stringent environmental and safety standards for heavy vehicles
- improvements in rail efficiency from investment in new wagons for example.

Willingness to pay could fall if:

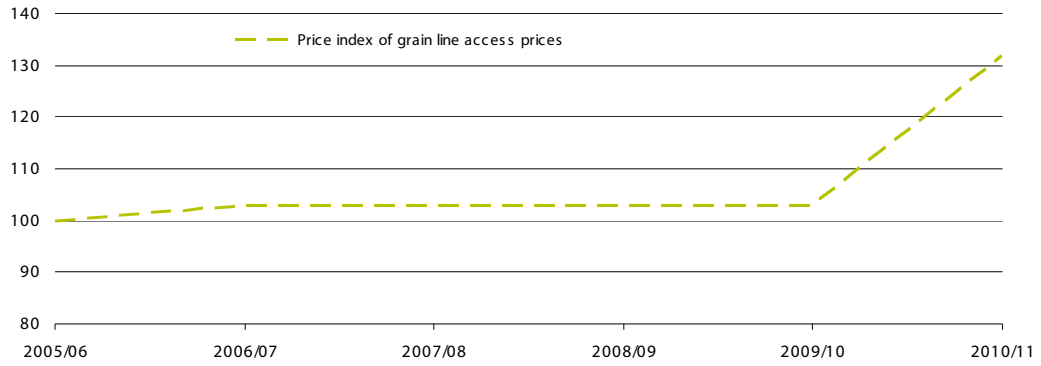
- accessibility of local roads improves for more efficient heavy vehicle types
- higher mass vehicles are developed.

9.1.5 What has been the historical response to changes in rail access prices?

There are several examples of significant changes in access prices in NSW and outside NSW that provide information about willingness to pay higher access charges. In 2010/11 CRIA reviewed access prices across the CRN and introduced a common rate for grain and general freight services. As a result access prices for grain services on the CRN increased on average by 14%. However, for the grain line network alone we estimate that the price increase was more substantial with prices increasing by about 30%. Prices were almost constant from 2005/06 to 2009/10.

21 Bureau of Infrastructure, Transport and Regional Economics, *Freight rates in Australia: 1964-65 to 2007-08,* Information sheet 28.

Figure 9.2 Index of grain line access prices



Source: GrainCorp — 2010/11 Export Freight Rates, accessed from http://www.graincorp.com.au/Documents/Export%20Freight%20Rates.pdf, 8 April 2011; distances from ports taken from Grain Trade Australia location differentials, accessed from http://www.graintrade.org.au/sites/default/files/file/Location%20Differentials/GTA_2010_2011_LDs_NSW_final_81010.pdf, 8 April 2011.

In 2009, an additional $1 per (net) tonne levy was applied to grain transported on the Weemelah line in order to keep this line open.[22] Our preliminary analysis shows this was equivalent to a 200% increase in access prices for this part of the network. This significant increase did not result in major changes in rail usage, so appears to have been acceptable to the grain producers and logistics operators who use that line.

9.1.6 Are there variations in willingness to pay?

It is likely that willingness to pay will differ markedly from location to location, depending on the size of the crop and depending on the destination of grain.

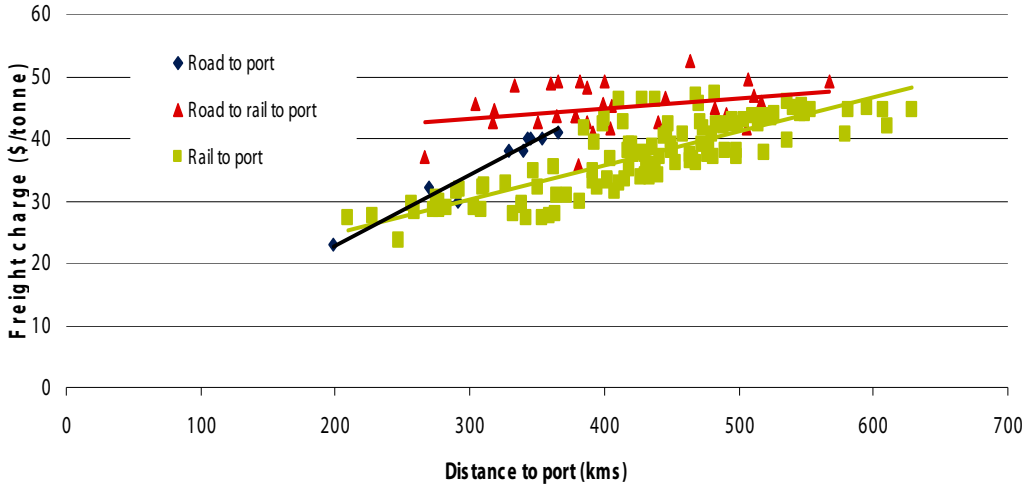
GrainCorp's indicative export freight rates for 2010/11 suggest that, for transport from storage facilities to ports, those transporting grain for export over longer distances are likely to be more willing to accommodate higher rail access prices than those transporting over shorter distances (Figure 9.3).[23] Road freight rates (the blue line on the figure) rise steeply as the distance from port increases. In comparison, rail freight rates (the green line) and road plus rail rates[24] (the red line) rise much more slowly. This suggests that rail is more competitive for transport of grain for longer distance journeys at current prices.

22 See http://www.graincorp.com.au/ir/media/2009%20Media%20Release/Weemelah%20Line%20Re-opening.pdf, accessed 11 April 2011.

23 The GrainCorp export freight rates are based on transporting grain from storage facilities — grain could also be transported directly from on-farm storages to customers using road.

24 The indicative freight rates for road plus rail are from locations that are not on a rail line. These rates assume the grain will be transported by road to the nearest rail line, then by rail to the port, presumably because this makes more economic sense.

Figure 9.3 GrainCorp indicative export freight rates



Source: GrainCorp — 2010/11 Export Freight Rates, accessed from http://www.graincorp.com.au/Documents/Export%20Freight%20Rates.pdf, 8 April 2011; distances from ports taken from Grain Trade Australia location differentials, accessed from http://www.graintrade.org.au/sites/default/files/file/Location%20Differentials/GTA_2010_2011_LDs_NSW_final_81010.pdf, 8 April 2011.

In addition to transporting grain longer distances, such as to port, rail is likely to be less price sensitive in a year with a good grain harvest. When harvests are good a greater share of the harvest is exported, road freight rates tend to rise with demand and rail is better able to cope with the larger quantities being transported.

9.1.7 How do we improve information about willingness to pay?

There are 2 other issues that are relevant for arguments about willingness to pay. The first is the timeframe over which willingness to pay is being considered and the second is how to obtain good information about willingness to pay to inform price changes.

In the short term, there may be a significant willingness to pay higher access prices, because of investments made to take advantage of rail access, such as storage facilities and trains. In the short-term, businesses may be willing to bear the costs of higher access charges rather than write down the value of their investments.

However, in the longer term, decisions on new investments near the rail network would reflect both the higher access price and the risk of future price changes leading to much larger longer term changes in demand. Offsetting this somewhat is that investments that rely on the rail network would be have greater certainty that rail lines would remain open were levels of cost recovery higher.

The second issue is the ability of the rail operator (or IPART) to accurately discern differences in willingness to pay. Ability to set a higher price will have been partially incorporated into rail freight prices charged by rail operators, given short-term constraints on competition in rail services. This suggests a joint industry-rail owner model might have advantages in eliciting accurate information on willingness to pay. These governance arrangements were discussed in Chapter 8.

IPART seeks comments on the following

17 How should willingness to pay be taken into consideration in setting access prices? Should the grain line cost recovery levels increase during good harvests? Should different prices be charged for different lines or access seekers?

Appendices

A Terms of Reference

NSW GOVERNMENT **Premier of New South Wales**

14 DEC 2010

Mr Rod Sims
Chairman
Independent Pricing and Regulatory Tribunal
PO Box Q290
QVB POST OFFICE NSW 1230

Dear Mr Sims

I am writing to request that the Independent Pricing and Regulatory Tribunal (IPART) undertake a review into rail access pricing on the Country Regional Network.

Please find enclosed a reference under Section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992* for IPART to conduct the review. I note that the provision of a final report to Transport NSW is required within 12-14 months of receipt of the reference.

If your officers wish to discuss this matter, they should contact Mr Tim Hurst, Executive Director, Infrastructure, Environment and Economic Development Policy, Department of Premier and Cabinet on (02) 9228 5493.

Yours sincerely

Kristina Keneally MP
Premier

NSW Country Regional Network Access Pricing Review

Terms of Reference

I, Kristina Keneally, pursuant to Section 9 of the *Independent Pricing and Regulatory Tribunal Act 1992*, request that the Independent Pricing and Regulatory Tribunal (IPART) investigate and advise on future access pricing for the sustainability of the NSW Country Regional Network (CRN).

In conducting this review, IPART should investigate and advise on appropriate pricing arrangements for the NSW grain line network as it is defined in the Australian Government's report on the *New South Wales Grain Freight Review* (2009).

In providing recommendations IPART should have regard to the:

- efficient costs of providing grain freight services over the next five years;
- ability and willingness of industry to pay;
- principles and approach underpinning the determination of access charges in other states;
- effect of any pricing recommendations on the whole supply chain for grain, including the road network and any potential flow-on effects to local government;
- policy developments relating to national road-pricing reforms, including the implementation of COAG Road Reform Plan;
- advantages and disadvantages of any alteration to access charges being phased in over a five-year period;
- effect of any pricing recommendations on the level of Government funding provided for Community Service Obligations (CSOs); and
- potential implementation strategies for any changes to pricing measures recommended by the Tribunal.

In preparing its advice, IPART should take into account previous and current work programs in NSW and other jurisdictions including, but not limited to the:

- Grain Infrastructure Advisory Committee *Report on Rail/Road Options for Grain Logistics* (2004) and Australian Government *New South Wales Grain Freight Review* (2009);
- Productivity Commission *Inquiry into Road and Rail Freight Infrastructure Pricing* (2007);
- establishment of the proposed Grain Industry Coordination Forum; and
- COAG Road Reform Plan to promote more efficient, productive and sustainable provision and use of freight infrastructure.

In undertaking this review, IPART should consult with stakeholders and accept public submissions within the timetable for the investigation and report.

IPART is to provide a draft report to the Minister for Transport within eight months of commencement and a final report within 12-14 months.

Background

In November 2008, the Australian Government initiated the NSW Grain Freight Review, to assess the efficiency of grain supply chains in NSW and recommendations to improve the systems to be sustainable in light of future industry changes. On 4 September 2009, the Australian Government released its report on the review of NSW grain freight transport network. Among other recommendations, it suggested that once stabilisation works on the relevant grain branch lines were complete, access charges on the network be reviewed to determine an appropriate level of user contribution to ongoing maintenance.

It further suggested that in considering future access charges, the access provider should also take account of:

- The principles and approach underpinning the determination of access charges in other states;
- Progress with parallel road pricing reforms so that future increases in branch line network access charges do not have the unintended consequence of shifting grain freight to road; and
- The ability of industry to pay.

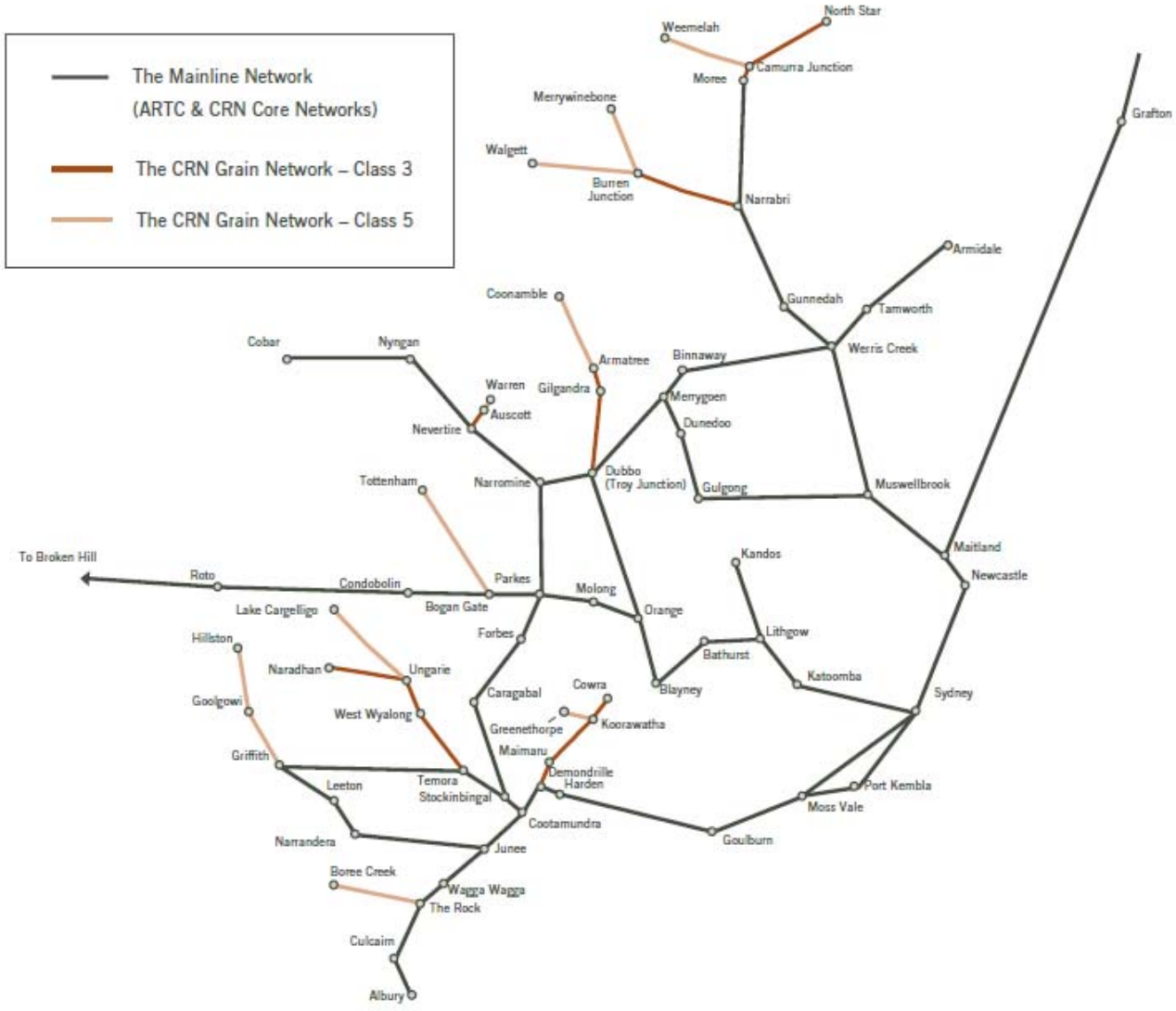
Any increase in charges should be phased in over a five-year period.

In May 2010, the NSW Government released its preliminary response to the NSW Grain Freight Review. It agreed that a review of access pricing for the country rail network would be considered within the context of the NSW Freight Strategy.

The Hon Kristina Keneally MP
Premier

Dated at Sydney.....14 DEC 2010.....2010

B Map of NSW Country Regional Network



Source: Australian Government, NSW Grain Freight Review, 2009, p 35.

C Interstate grain rail networks

C.1 Western Australia

C.1.1 Grain industry

Over the last 5 years, grain production in Western Australia has averaged around 11.7m tonnes per annum.[25] The Western Australian grain crop is Australia's largest, accounting for 31% of Australia's total grain crop, with 90% of WA's production destined for export.[26] The Western Australian grain region is divided into 4 distinct zones: Kwinana, Albany, Geraldton and Esperance, each served by their own rail network.

The rail network in WA transports around 60% of the grain freight task by volume and 80% by net-tonne-kilometres, but its share is falling, as road transport is used increasingly in some areas.

C.1.2 Grain Rail Network

CBH Group is the sole storage and handling company operating in WA. Grain is transported primarily by rail from receival sites to ports. The majority of the grain rail network (2,136 km) is operated by WestNet Rail (WNR) under long term lease from the WA Government through the Public Transport Authority (PTA).[27]

C.1.3 Rail access regime

Access to the network is provided under an access regime certified under Part IIIA of the *Competition and Consumer Act 2010* and administered by the WA Economic Regulation Authority (ERA). The network is categorised into 3 tiers, reflecting the level of importance and viability of each line section to the overall network and grain supply chain.

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25 ABARE, *Australian Crop Report*, No 157, 15 February 2011, p 17.

26 ABARE, *Australian Crop Report*, 17 June 2010, p 1.

27 The network has a variety of track ratings with a mix of 16 and 19 tonne axle loading in the grain region, to 20.5 tonne axle loading in the South West region (all narrow gauges) and a mix of 23 and 24 tonne axle loading on the standard gauge network.

The central feature of the regime is that it is a 'negotiate and arbitrate' model where the rail track owner and the access seeker negotiate the terms and conditions (including price) of the access arrangement on a commercial basis between upper (ceiling) and lower (floor) price determined by ERA. Access seekers are not compelled to negotiate with rail track owners under the *Rail (Access) Code 2000* but can negotiate on a commercial basis outside the Code.[28]

Access charges for grain are determined by commercial negotiation outside the Code and are therefore not subject to regime's floor and ceiling prices. The commercially negotiated charges received by WestNet equate to 25% of the price allowable under the revenue ceiling calculated under the regime.[29]

C.1.4 Recent grain network review

In 2008, the grain network was reviewed by the Grain Infrastructure Group (GIG).[30] The review concluded that there was increased diversion of export freight onto road and with the deregulation of grain handling and marketing the entire grain rail network would become unviable. The review found that to avoid closure of the branch lines, $400m was required to be invested in the rail supply chain over 5 years. If this investment was not made, the federal, state and local governments would need to increase road infrastructure expenditure significantly.

In 2009, another review of the grain network was undertaken by the Freight and Logistics Council of WA. The key finding of the review was that there was a strong economic rationale and wide grower support for maintaining a strong rail network. The study recommended funding for upgrading the Tier 1 and Tier 2 lines. In 2010 and 2011, the state and federal governments announced funding of $350m for the rail network.

28 Economic Regulation Authority (ERA) submission on the Road and Rail Freight Infrastructure Pricing Discussion Draft by the Productivity Commission, 2008, p 2.

29 WestNet Rail submission to the National Competition Council, 13 September 2010.

30 GIG was established in 2006 to provide a strategic vision for the infrastructure needs of the grain industry. GIG was made up of the WA State Government, CBH, WestNet and Australian RailGroup(ARG) and AWB Limited.

C.2 South Australia

C.2.1 Grain industry

South Australia is the third largest grain producing state in Australia, averaging 5mt over the 5 years to 2009/10[31] and accounting for 19% of Australia's wheat exports. The major grain production areas in SA include the Northern Area, the Eyre Peninsula, the Murray Mallee and the South East. Grain production in SA is concentrated in a smaller area than in NSW and Victoria and the supply chain is more fragmented with 7 grain export terminals.[32]

Two companies operate grain storage and handling facilities in South Australia. The dominant player is ABB, which handles approximately 95% of the State's wheat receivals. The other is AWB GrainFlow, which handles approximately 5% and owns 4 receival sites.[33]

There are 7 grain export terminals, owned and operated by ABB. These terminals are located in Port Adelaide, Port Lincoln, Port Giles, Port Pirie, Ardrossan, Thevenard and Wallaroo. The state's largest export terminals at Port Lincoln and Adelaide are serviced by rail; hence, 70% of export grain is delivered by rail. Road is still important, however, as the other 5 export terminals are largely serviced by roads.

C.2.2 Grain rail network

Genesee and Wyoming Australia Pty Ltd (GWA), a wholly owned subsidiary of the American regional freight company Genesee and Wyoming Inc (GWI), owns and operates SA's intrastate rail network. Grain is the principal traffic on this network. The intra-state lines are vertically integrated.

C.2.3 Rail access regime

The *Railways (Operations and Access) Act 1997* (the ROA Act) establishes the South Australian Rail Access Regime (the access regime). The access regime is to ensure other operators could offer rail services to customers and compete with the owner/operator by obtaining access to the rail network on commercial terms consistent with National Competition Principles and with Part IIIA of the *Competition and Consumer Act 2010*.[34] The access regime provides a negotiate/arbitrate model and empowers the Essential Services Commission of South Australia (ESCOSA) to

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31 Supra fn 1.

32 Allen Consulting, *Competition in the export grain supply chain*, March 2008, p 65.

33 ibid, pp 65 and 68.

34 Essential Services Commission of South Australia, South Australia Access Regime: Information Kit Review, Final Decision, March 2010, p 4. The Access regime has not been submitted to the NCC for certification as an effective State-based access regime under the CCA (2010). Until certification is achieved access to services provided by intrastate railways may be subject to declaration under Part IIIA of the CCA (2010).

monitor and oversee access matters, establish pricing principles and information requirements, and refer access disputes to arbitration. Access prices are set between a floor and a ceiling price. The ROA Act (s 32) requires that the infrastructure owner to negotiate access price with a third party.

C.3 Victoria

C.3.1 Grain industry

Victorian grain production averaged 4.2 million tonnes per annum over the last 5 years. The State is the country's fourth largest grain producing state, accounting for 13% of the country's total grain production and 11% of exported wheat.[35] The major grain production areas in Victoria are the Wimmera and the Mallee in the northwest of the state.[36]

Four companies operate the grain storage and handling in Victoria: GrainCorp, AWB GrainFlow, ABA and ABB. Grain is transported primarily by rail from receival sites to ports for export. Of the export task, the volume transported by rail for export has declined from more than 85% to less than 40% in the recent years due to the deterioration of the rail infrastructure. Rail's share of domestic grain transportation is around 10% to 15%, compared to historical average of 25% to 35%.[37]

C.3.2 Grain rail network

Grain is transported over the freight network (1,558 km), which is part of the regional intra-state network of 3,442 km operated by V/Line.[38] In May 2007, the Victorian Government bought back the regional intra-state rail network lease from Pacific National, together with the below-rail track management business operations. V/Line became the network operator under the 'Regional Infrastructure Lease'.

35 Supra fn 1, p 17.

36 In addition, approximately 0.5 Mtpa of grain has flowed into Victoria from southern NSW because the Victorian rail network extends into southern NSW.

37 Essential Services Commission, *Review of the Victorian Rail Access Regime: Final Report, Volume III: Supporting Material*, February 2010, p 23.

38 The regional intra-state network consists of 3,442 km of railway tracks, including 1,483 km of track used by passenger services and freight trains (the 'passenger network'), and 1,558 km of track currently used by freight trains only (the 'freight network').

C.3.3 Rail access regime

An open access regime exists on freight rail lines in Victoria. The access regime which came into effect on 1 July 2001 was amended in June 2007 and was further amended in June 2010 to improve its effectiveness in increasing the amount of freight transported by rail. Grain access fees were reduced to be more consistent with access fees charged for other types of freight and ensure that rail freight retained its competitiveness for grain transport.[39]

In 2010/11, the access price charged by V/Line was $3.99/1000GTK and this will be indexed by CPI for 2011/12.[40]

C.3.4 Recent grain network review

In 2008, the Victorian Government undertook a review of the viability of the intra-state freight system, taking into account: the declining rail volumes; reducing crop volumes due to extend severe drought; system inefficiencies; and low service levels all of which were leading to a major shift towards road haulage.[41]

The review recommended that the regional rail freight network be maintained at a 'fit-for-purpose' level and at a reasonable cost.[42] Following the review, the Government adopted 2 streams of funding for rail freight including a rebate to grain bulk handlers and regional intermodal terminal operators and specific funding for upgrading and rehabilitating the regional freight-only rail network.[43] In October 2008, the Victorian Government announced a $38.7m package for upgrading the major grain carrying rail lines.[44]

39 http://www.transport.vic.gov.au
40 V/Line Rail Access Agreement, p 48.
41 Victorian Rail Freight Network Review, *Switchpoint: the template for rail freight to revive and thrive*, 2008, p 4.
42 ibid, p 5.
43 Essential Services Commission, *Review of the Victorian Rail Access Regime: Final Report, Volume III: Supporting Material*, February 2010, p 34.
44 Victorian Government press release, 20 October 2008.

C.4 Queensland

C.4.1 Grain industry

Queensland is the smallest grain producer of the 5 mainland states, contributing 9% of Australia's total wheat production over the last 5 years.[45] Sorghum and wheat are the dominant grain varieties grown in Queensland, accounting for 39% and 56% of total grain production in 2009/10.[46] The major grain production areas in Queensland are the Darling Downs and Central Queensland.[47]

GrainCorp and AWB GrainFlow own and operate the storage and handling infrastructure in Queensland. GrainCorp handles 79% of the State's wheat receivals and AWB GrainFlow 21% of receivals. In Queensland, 100% of export grain is delivered by rail and grain for domestic milling is delivered by road. Given that the volume of grain associated with export is 3 times larger than that for milling, a significant tonnage of grain is transported by rail.[48]

C.4.2 Grain rail network

QR Network is responsible for providing, maintaining and managing access to its rail network and associated rail infrastructure. The total rail network is 2,300 kilometres.

C.4.3 Rail access regime

Access to rail network is managed under a detailed process approved by the Queensland Competition Authority (QCA). Under the QR Network Access Undertaking, QR Network sets access charges by reference to the upper and lower limits for access charges.

45 Supra fn 1, p 17.
46 ABARE, *Australian Commodity Statistics*, 2010, pp 49 and 215.
47 Queensland DPI website.
48 Allen Consulting Group, *Competition in the export grain supply chain* (Report to AWB Limited), March 2008, p 12.

C.5 Interstate network

Grain is also transported on the ARTC's interstate rail network.[49] The ARTC is obliged by the Access Undertaking – Interstate Rail Network 2008 to provide access to businesses seeking to run trains on its interstate rail network. Access prices are regulated by a set of pricing principles specified in the Access Undertaking including a floor and ceiling test.

The interstate rail network covers the main line standard gauge track linking Kalgoorlie in Western Australia, Adelaide, Wolseley and Crystal Brook in South Australia, Melbourne and Wodonga in Victoria and Broken Hill, Cootamundra, Albury, Macarthur, Moss Vale, Unanderra, Newcastle (to the Queensland border) and Parkes in New South Wales (NSW).

A substantial proportion of grain traffic operates on an ad hoc basis in NSW and South Australian/Victorian section of the network.

The ARTC reported that grain volumes for 2009/10 increased by 5.4% over the previous year. Volumes had been considerably stronger in SA and Victoria due to favourable conditions, whilst NSW was affected by lower harvest across southern and central NSW on account of below average rainfall and higher temperatures/frosts.[50]

The ARTC publishes access prices to its interstate rail network including prices for 'standard freight' that applies to transportation of grain.[51] The applicable access prices for standard freight are as follows:

[49] ACCC, *Australian Rail Track Corporation Access Undertaking, Interstate Rail Network, Final Decision*, June 2008, p 8. The interstate rail network covers the main line standard gauge track linking Kalgoorlie in Western Australia, Adelaide, Wolseley and Crystal Brook in South Australia, Melbourne and Wodonga in Victoria and Broken Hill, Cootamundra, Albury, Macarthur, Moss Vale, Unanderra, Newcastle (to the Queensland border) and Parkes in New South Wales (NSW).

[50] ARTC Annual Report 2009-10, pp 4 and 18.

[51] `http://www.artc.com.au/library/Pricing%20Schedule%20Effective%2001072010.pdf

Table C.1 ARTC access prices effective from 1 July 2010 (standard freight)

	Flagfall price per train km ($)	Variable price per '000GTK ($)
Parkes Jct - Broken Hill	0.511	3.627
Broken Hill – Crystal Brook	0.511	3.627
Adelaide - Parkeston	2.558	2.781
Port Augusta - Whyalla	1.747	4.691
Adelaide – Pelican Pt	2.143	4.096
Adelaide - Melbourne	1.836	3.112
Acacia Ridge - Islington	0.831	3.242
Tottenham - Albury	0.628	2.549
Albury - Macarthur	0.628	2.549
Cootamundra – Parkes Jct	0.427	3.570
Moss Vale - Unanderra	0.525	4.099
Maitland – Muswellbrook	0.439	3.454
Muswellbrook - Merrygoen	0.428	3.047
Muswellbrook – Werris Creek	0.439	3.454
Parkes – Werris Creek	0.084	2.270

Note: Standard freight applies to non-schedule services including Grains, Minerals with max train speed 80kph/max axle loading up to 23T/length to corridor standard max.

Source: ARTC Pricing Schedule, applicable rates – effective from 1 July 2010.

D Glossary

Term	Definition
ABA	Australian Bulk Alliance - grain handling company.
ABARE	Australian Bureau of Agricultural and Resource Economics
Above rail	Refers to train operations and rolling stock that travel on the track.
ABS	Australian Bureau of Statistics
Access Seeker	A rail operator or prospective rail operator who has the capacity to provide rail services of the type for which access to the network is sought.
Anchor tenant	The main tenant. It is often essential to have a lease commitment from an anchor tenant before investment can be financed.
ARTC	Australian Rail Track Corporation - Commonwealth-owned company under the Corporations Act that is responsible for the management of over 10,000 route kilometres of standard gauge interstate track in South Australia, Victoria, Western Australia, Queensland and New South Wales, including the Hunter Valley coal rail network and CRN in New South Wales.
ARTC Interstate Access Arrangement	Voluntary undertaking submitted by ARTC under Part IIIA of the *Trade Practices Act 1974 to provide a framework to manage negotiations with applicants for access to the ARTC-leased network for the purpose of operating services.*
AWB	AWB Limited - grain handling company.
Backhauling	Where goods are collected from a despatch point directly following a delivery
B-double	A prime-mover towing 2 semi-trailers
B-triple	A prime-mover towing 3 semi-trailers
Below rail	Refers to the rail infrastructure, signals and operations that are required for a train to operate on the track.
Branch line network	See also grain network. The 1,200+km network of restricted lines that make up the transportation system for grain (and some other freight) from outer north, west and south-west NSW to main line silos.
Ceiling test	Revenues from access seekers on a line or section of lines recover the full economic costs of that line or sector.
CityRail	CityRail is the government-owned passenger rail service provider covering suburban Sydney and extending to the Hunter, Central Coast, Blue Mountains, Southern Highlands and South Coast regions
Class 3 track	Light gauge track that is limited by low axle loads (19 tonnes maximum) and speeds (up to 70 km/hr). Predominantly for grain and other freight.
Class 5 track	See also restricted lines. Light gauge track that is limited by low axle loads (19 tonnes maximum) and speeds (up to 40 km/hr). Predominantly grain-only lines.
Class 48 locomotive	A diesel electric locomotive introduced to the NSW Government Railways from 1959. Most have now been scrapped, stored or purchased by heritage groups, but some remain in operation for the purpose of grain haulage on the branch lines.

Class 81 locomotive	A class of main line diesel locomotive introduced in NSW between 1982 and 1984. They are used anywhere on the rail network – from freight and coal to passenger services.
CRIA	Country Rail Infrastructure Authority - the NSW Government agency which owns the non-metropolitan rail networks in New South Wales
CRN	Country Regional Network - covers 2,735 route kilometres of operational passenger and freight rail lines and 3,170 route kilometres of non-operational lines
CRRP	COAG Road Reform Plan - three-phase plan to consider alternative models of heavy vehicle road pricing and funding. Was developed in response to the COAG National Reform Agenda's competition reforms and specifically in response to the findings and recommendations of the Productivity Commission Inquiry on Road and Rail Freight Infrastructure Pricing (2006).
CSO	Community Service Obligation
Direct costs	Defined in the NSW Rail Access Undertaking as the efficient, forward-looking costs, which vary with the usage of a single operator within a 12-month period, plus a levellised charge for variable Major Periodic Maintenance costs, but excluding depreciation.
DITRLG	Department of Infrastructure, Transport, Regional Development and Local Government
Economic efficiency	An outcome is economically efficient if resources could not be reallocated to provide greater welfare elsewhere.
Fixed costs	Costs that are not dependent on the level of use of the network.
Floor test	Revenues from access seekers on a line or section of lines at least recover the full incremental costs of that line or sector.
Free ride	Consuming a resource without paying for it or paying less than the full costs of its production.
Full Economic Costs	Defined in the NSW Rail Access Undertaking as sector specific costs, including a permitted rate of return and depreciation and an allocation of non-sector specific costs such as train control and overheads, including a rate of return and depreciation on non-sector specific assets. All included items are to be assessed on a standalone basis.
Full Incremental Costs	Defined in the NSW Rail Access Undertaking as all costs that could be avoided if a sector was removed from the system.
GHG	Greenhouse Gas Emissions
GIAC	Grain Industry Advisory Committee
GIG	Grain Infrastructure Group
Grain Consolidation Facility	Grain storage and receival facilities located on main rail lines which are used to transfer grain from trains operating on the grain line network to main line trains for transporting to port.
Grain network	See also branch line network. The 1,200+km network of restricted lines that make up the transportation system for grain (and some other freight) from outer north, west and south-west NSW to main line silos.
GrainCorp	Grain handling company contracted by the NSW Government under the Grain Haulage Agreement to provide grain rail haulage services on the branch line network to reach the nearest available hub for the deposit of grain (en route to port).
Hunter Valley Coal Network	Section of rail track in the Hunter Valley that runs from Werris Creek and Merrygoen to Port Waratah and Kooragang.
IA	Infrastructure Australia

Monopoly pricing	Price that may be charged by the sole owner of a service or producer of a good, which is significantly higher than the cost of producing the good or service.
MPM	Major Periodic Maintenance – track upgrades, including, but not limited to, formation reconditioning, sleeper and rail renewal, junction renewals and refurbishments, high performance track reconstruction and maintenance resurfacing.
Natural monopoly	An industry characterised by large infrastructure requirements that are uneconomic to duplicate.
NSW Rail Access Undertaking	Governs the provision of third party access to the rail network in NSW, which is not covered by a separate access arrangement.
NTC	National Transport Commission
ODRC	Optimised depreciated replacement cost
PAYGO	Pay As You Go - system of recovering heavy vehicle charges nationally
Price discrimination	When identical goods or services are transacted at different prices from the same provider.
Productivity Commission	The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians.
Profiling	Restoring the profile and removing irregularities from worn rail track to extend its life and to improve the ride of trains.
RailCorp	Rail Corporation New South Wales - NSW Government agency responsible for maintaining the metropolitan rail network and providing access to freight operators in the metropolitan area.
Restricted lines	See also Class 5 lines. Light gauge track that is limited by low axle loads (19 tonnes maximum) and speeds (up to 40 km/hr). Predominantly grain-only lines.
Routine maintenance	Means inspections and unplanned minor maintenance carried out annually or more frequent cycles including track inspections, patrolling, replacing broken track components, corridor maintenance, fence maintenance and signal testing.
RTA	NSW Roads and Traffic Authority
Stabilise	Restore the track to its nominated condition of use.
Super Site	Grain storage and handling facility located near a main rail line to allow transfer of grain from trucks to rail for transportation to port.
Tamping	Packing the track ballast to make the line more durable.
Undertaking	See NSW Rail Access Undertaking
Variable costs	Costs that are volume-related - that is, costs that change with direct usage of the network.