Statement of Robert Willig

I. BACKGROUND AND EXPERIENCE

1. My name is Robert D. Willig. I am Professor of Economics and Public Affairs at Princeton University, a position I have held since 1978. A fuller description of my background and experience is contained in a statement I prepared dated May 4, 2005 (Willig (2005)). I understand that Willig (2005) was included in submissions made on behalf of Rio Tinto Iron Ore (RTIO) to the National Competition Council (the NCC) in relation to the application by Fortescue Metal Group Limited (FMG) under Part IIIA of the *Trade Practices Act* 1974 (TPA) for declaration of the use of the Mt Newman railway line (the FMG Mt Newman Application). A copy of Willig (2005) is annexed to this statement as Appendix A.

II. ASSIGNMENT AND PRELIMINARY DISCUSSION

2. In its *Guide,* the NCC articulated its position regarding the interpretation of when, in the language of criterion (b) of s.44G(2), it would be "uneconomical" for anyone to develop another facility to provide the service at issue.[1] The NCC's position was that criterion (b) should be a test of whether "a facility exhibits natural monopoly characteristics."[2] In this context, the NCC considered a facility to be a natural monopoly if the facility "is capable of meeting likely demand at lower cost than two or more

[1] See *Declaration of Services: A guide to Declaration under Part IIIA of the Trade Practices Act 1974 (Cth),*March 2009, and *Application by Fortescue Metals Group Limited for Declaration of Services Provided by BHP Billiton Iron Ore Pty Ltd, Issues Paper,* March 11, 2005 (March 11, 2005 Issues Paper) at ¶¶ 5.1-5.4.
[2] *Id* at ¶ 4.3.

facilities."[3] According to the NCC, judgments about the property of "uneconomical" should be based on social costs and benefits, not private profitability.[4]

3. In the *Issues Paper* released by the NCC in connection with the FMG Mt Newman Application, the NCC requested comment on whether its natural monopoly test for criterion (b) should be conducted independently of evidence that a duplicate facility had been constructed (or evidence of a credible commitment to timely construction of a duplicate facility). My conclusion was that a finding that there had been construction of duplicate facilities (or credible commitment to timely construction of duplicate facilities) by an independent firm should be permitted to influence the assessment of criterion (b) and should end the declaration inquiry.

4. Subsequently, The Pilbara Infrastructure Pty Ltd (TPI) has made applications (the TPI Hamersley Application and the TPI Robe Application) under Part IIIA of the TPA for declaration of the use of different parts of RTIO'S railway system in the Pilbara (the Hamersley Service and the Robe Service).

5. I have been asked by attorneys for RTIO to offer my opinion on the following questions:

Re: Criterion (b) - uneconomical to develop another facility

- As a matter of economic principle and good public policy, what tests should be applied in addressing criterion (b)?
- What kinds of evidence would be relevant to assessing whether criterion (b) is satisfied?

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[3] *Id* at ¶ 4.3.

[4] 'Uneconomical' "should be construed in a social cost benefit sense rather than in terms of private commercial interests." (*Id* at ¶ 4.2.)

- What role, if any, does the question of whether or not the facility displays natural monopoly characteristics have in assessing whether criterion (b) is satisfied?

- If this analysis has any role to play in the context of criterion (b), how should this analysis be applied and how does it differ from a classic natural monopoly test? Further (in amplification of your position on this question), in applying the natural monopoly test, what type of costs should be taken into account when examining the cost of sharing an existing railway facility compared with building and operating a separate facility?

Re: Criterion (f) - access would not be contrary to the public interest

- As a matter of economic principle and good policy, how do you interpret criterion (f)?

- Is it appropriate to conduct a cost/benefit analysis (from society's perspective) of mandated access in assessing whether criterion (f) is satisfied?

Attached as Appendix B is a copy of the letter of instruction from Allens Arthur Robinson (AAR) dated June 1, 2009.

6. Before I offer my opinions in response to these questions, it is worthwhile to discuss how, on the one hand, sound regulatory policy might employ declaration to achieve greater economic efficiency, and how, on the other hand, declaration might result in large and unnecessary social costs including impeded supply of the services at issue. I also discuss how the criteria for declaration may identify the conditions under which declaration is unlikely to result in greater economic efficiency.

7. Declaration of a service provides access seekers with legal rights to negotiate access to a declared service and, if necessary, provides that access terms and conditions may be arbitrated by the Australian Competition and Consumer Commission

(ACCC).[5] It is my understanding that the goal of declaration policy is to improve overall economic efficiency through enhanced competition. I also understand that declaration may or may not be seen, depending on circumstances, to improve overall economic efficiency and be of net benefit to society. Further, it is my understanding that if it becomes apparent, through analysis, that there is no net benefit to society from declaring a service, the service should not be declared.

8. In my view, appropriate policy should be highly cautious about declaration of a service. After all, regardless of economic efficiency, firms that could make gainful use of the service generally have incentives to seek access through declaration, in hopes of attaining, through the regulatory process, the right to use the service on favorable terms, and thereby avoid the expenses of investing in their own facilities or otherwise employing third-party facilities on ordinary commercial terms. However, it may be the case that access accorded involuntarily through declaration generates (1) episodic congestion; (2) conflicts over business priorities and financing that impede efficient deployment of facilities and that paralyze investment decisions; (3) misincentives that suppress efficient investment in facilities by both the access-provider and access-seekers; and (4) other undesirable effects from the perspective of social welfare. Declaration, as well as the prospect of declaration, is apt to crowd out successful private negotiations over voluntary access, since the access-seeker has natural incentives to "roll the regulatory dice" to see if a favorable deal will be mandated. As a result, social efficiency may be enhanced by eschewing the market intervention of declaration. Without the prospect of declaration, the access-seeker may build its own facilities to provide the services, the access-seeker and facilities owner may be motivated to find a voluntary and efficient access solution, or the access-seeker may not wind up employing the services at issue at all if that is the efficient outcome.

9. Notwithstanding the dangers and the need for caution, declaration could be socially advantageous under certain delineated circumstances. My understanding is

[5] National Competition Council Pilbara Infrastructure Pty Ltd Application for declaration of a service provided by the Hamersley railway line under section 44F(1) of the *Trade Practices Act 1974*, Final Recommendation, 29 August 2008, ("Hamersley Final Recommendation") at ¶ 3.7.

that the basis for the policy of declaring certain facilities or services is to introduce competition into markets that are dependent upon the service at issue. In theory, there are circumstances under which a facility owner and an access seeker could never reach agreement on terms of access even though sharing the facility is *socially* efficient. This case might arise where the benefits of sharing access accrue to third parties, i.e., parties other than the facility owner and the access seeker engaged in the negotiations of access terms. Such third parties may be customers or other firms that would benefit from greater competition between the facility owner and the access seeker.[6] Thus, by mandating access to a facility, declaration may conceivably result in greater economic efficiency.

10. The regulatory framework for the application of declaration policy should recognize that there are possible social costs as well as possible benefits from declaration. I understand that the criteria implicitly attempt to do so and set out an analytic framework that I assume attempts to accomplish efficient balancing of possible social costs and social benefits. The principal possible benefit of declaration is articulated as competition that would not exist absent declaration in markets that are dependent upon the service at

[6] Consider the following example. The facility owner makes a profit of 10 when not sharing access. This example assumes that it would not be economical for the access seeker to develop its own facility absent an access sharing arrangement. When sharing access, the facility owner and the access seeker each earn a profit of 4. Note that in this case the facility owner and the access seeker would not voluntarily reach an access sharing arrangement because any access arrangement that is acceptable to the access seeker would be unacceptable to the facility owner (i.e., the facility owner could not earn a profit of 10 under an access arrangement without forcing the access seeker to incur negative profits). However, access sharing may enhance competition in other markets that may increase the overall efficiency of sharing the facility. Consider two alternative scenarios. In the first scenario, sharing the facility enhances competition, improves allocative efficiency, and generates an additional consumer surplus of 3 (without further reducing producer profits). Note that under this scenario, sharing the facility is efficient from the total social welfare perspective because the resulting positive increment of 3 to consumer surplus outweighs the loss of total profit of 2 (4 + 4 - 10) caused by the mandated sharing of access. Now consider the different scenario where sharing the facility enhances competition and generates additional consumer surplus of just 1. In this scenario, sharing the facility is inefficient because the gain in consumer surplus (1) from enhanced competition is less than the producer loss (2) from sharing the facility.
However, the difficult analysis of whether mandated facility sharing enhances social efficiency (and thus whether declaring the facility may improve social welfare) is unnecessary when it is privately economical for the access seeker to develop its own facility. As I discuss below, if it were privately profitable for the access seeker to develop its own facility, the facility owner and the access seeker would likely voluntarily (i.e., absent any inducement from regulations) reach an access sharing arrangement if sharing the facility enhanced economic efficiency.

issue. The possible harms from declaration or its prospect are unnecessary costs and impediments to supply, suppressed investments, and misincentives that distort efficient industry outcomes. The full costs and benefits of mandating access are generally difficult to assess, and one of the challenges of declaration policy is how to balance these costs and benefits when their estimates may not be reliable. I discuss these challenges below when I address the specific questions posed to me by counsel.

11. I understand that the Australian Competition Tribunal (the Tribunal) cannot declare a service unless the service satisfies a number of criteria as set out in section 44H(4) of the TPA. My interpretation of the criteria for declaration, based on sound policy principles, is that the criteria should exclude conditions under which mandating access would likely be counterproductive for economic efficiency, and help ensure that declaration would occur only in those circumstances where mandating access is likely to result in greater economic efficiency. I analyze the criteria for declaration from this perspective.

III. RESPONSES TO QUESTIONS

Re: CRITERION (B)

Q. As a matter of economic principle and good policy, what tests should be applied in addressing criterion (b)?

12. **A.** Criterion (b) states that a service cannot be declared unless the Tribunal is satisfied that "it would be uneconomical for anyone to develop another facility to provide the service."[7] The direct consequence of criterion (b), as I understand it, is that unless it can be demonstrated with a reasonable degree of confidence that it would be uneconomical for someone to develop an alternative facility for the provision of a service, the service should not be declared.

[7] Section 44H(4) of the TPA.

13. As a matter of sound economics and regulatory policy, I interpret criterion (b) as one of the requirements to demonstrate that, absent declaration, markets will fail to resolve access issues in a way that enhances competition in the markets that are dependent upon the service at issue. Declaration of a service is a significant regulatory intrusion into the workings of a market. It brings with it the heavy hand of regulation that imposes large costs on the parties subject to the mandates involved. Declaration abrogates markets, which serve an important informational function in identifying the efficient supply and demand of key resources, and instead relies on information gathered from regulatory hearings, filings by affected parties, and judgments by officials who generally cannot be fully cognizant of all the factors affecting market conditions in the industry. Under declaration, access is coerced and therefore likely to be accompanied by recurrent conflicts of usage priorities and demands and by pricing and investment misincentives that potentially paralyze market function, all of which add up to a significant likelihood of socially costly misallocation of resources. Therefore, sound regulatory policy should avoid declaration in the absence of clear evidence that mandating access will result in greater economic efficiency and significant social benefits from enhanced competition. However, unless it is uneconomical to develop an alternative facility, new competition need not rely on mandated access. In this case declaration will not likely enhance economic efficiency, and the service should not be declared.

14. Common knowledge that it is privately economical to develop an alternative facility implies that the individual incentives of access-seeker and the owner of the existing facility alike are strong to implement voluntarily whatever solution is socially efficient. To illustrate, suppose that in the scenario with the alternative facility the profits to the original facility owner would be 6 and the profits to the owner of the alternative facility would be 4. Suppose also, as the first of several cases, that the scenario with voluntary shared use of the original facility is socially efficient and would generate a total profit to both parties of 14. This example assumes that all other aspects of competition are identical under both scenarios (i.e., consumers and other firms are indifferent between competition with an alternative facility and competition under shared

facility use). Then, given the credible threat that the access seeker would otherwise build alternative facilities and thereby earn profits of 4, the access seeker can assure himself a portion of the 14 from voluntary sharing at least as big as 4. Absent declaration, the original owner, in turn, can assure himself a portion of the 14 from voluntary sharing at least as big as the 6 he would earn in the scenario without sharing. The ensuing bargaining will split the remaining portion of the 14 (which is equal to 4 or 14 minus 4 and 6), and if the bargaining is even-handed (i.e., both parties evenly spilt the remaining portion), the resulting split of the 14 will be 6 for the access-seeker and 8 for the original owner. Here, the parties have strong individual incentives to reach a successful bargain that enables voluntary access to work. These incentives arise first from the posited fact that the voluntary shared use is efficient in that it generates more total profit (i.e., "a bigger pie" to share) than separate facilities. These incentives arise second from the posited fact that alternative facilities are privately economical, even though here they are not socially efficient compared to shared use. Because the alternative facilities are privately economical, the articulated or implicit threat that they would be built is credible and as a result the original owner has strong individual incentives to secure more profit with an efficient voluntary sharing agreement.

15. Now, in contrast, consider the case where shared use generates total profits of 8, so that it is socially inefficient compared to the scenario with the construction of the alternative facilities from which the profits would again be 4 to the owner of the alternative facilities and 6 to the original facility owner. When the access seeker, as before, threatens the original owner with the construction of the alternative facilities in an effort to secure more profit from a sharing deal than the 4 it could earn on its own, the original owner would not accept any sharing arrangement that the access seeker would be willing to accept. If the original owner were to grant a portion of more than 4 out of the total profits of 8 from shared access to the access-seeker, that would leave him with profits of less than 4 from shared access, which is less than the 6 he would earn from the scenario with both the original and the alternative facilities competing. Thus, here, there is no deal that would support voluntary sharing of the original facilities. Again, this is the efficient outcome under these facts, since in this case the total profit is larger without

voluntary access. Again, reliance on voluntary negotiations without declaration leads to the socially efficient solution, due to the fact that in these examples the alternative facilities are privately economical, whether or not they are socially efficient. Note that the key threat that the access seeker would enter without an access arrangement is credible if it is economical for the access seeker (or someone else who would enable the access-seeker's competitive use) to build a facility that would provide services equivalent to those that would have resulted from shared access. Therefore, as a matter of sound policy, the assessment of whether criterion (b) is satisfied should examine whether it is privately economical to develop a facility that is functionally equivalent to the existing facility at issue from the perspective of the access-seeker's ability to compete. In other words, the test under criterion (b) need not examine whether it is privately economical to develop an *identical* facility (to the existing facility at issue). Instead, the test should examine whether it is privately economical to develop a *functionally equivalent* facility.

16. In its final recommendations to declare the Hamersley Service and the Robe Service, the NCC argued that the term "uneconomical" should refer to whether building an alternative facility enhances social efficiency rather than the private profitability of a facility developer.[8] It is important that the assessment of the social efficiency of developing an alternative facility be interpreted with caution. It is inconsistent with economic logic and valid dictates of social efficiency just to compare the construction costs of a single facility with the construction costs of multiple facilities. Instead, if new construction were at issue, it would be apt to compare the costs of building and operating multiple facilities each to be employed by a different competitor, with the costs of building and operating a single facility that is to be shared (under the regulatory mandate of declaration) by the owner and its competitor. It is necessary to include in this comparison the practical costs engendered by the inevitability and the need to handle as well as possible the conflicts, disputes and paralyses that accompany the mandated sharing of the single set of facilities. It is necessary to include what may be

[8] Hamersley Final Recommendation ¶¶ 5.1 – 5.2; and National Competition Council Pilbara Infrastructure Pty Ltd Application for declaration of a service provided by the Robe railway line under section 44F(1) of the *Trade Practices Act 1974*, Final Recommendation, 29 August 2008 (Robe Final Recommendation) at ¶¶ 5.1 – 5.2.

highly significant social costs of the disincentives to invest where the decision-making is fraught with conflicts from coerced sharing, and where the financial returns from the possible upsides of investment are vulnerable to appropriation by the access-seeker enfranchised by declaration. The consequent shortfall in investments is apt to lead to loss of capacity that would have otherwise been created by efficient investments in the absence of declaration. By definition, these categories of possible costs are absent from the comparison scenario of multiple facilities, which in turn engender their own social costs possibly arising from duplication of fixed costs, loss of economies of scale and scope and resulting reduction in the returns from investment in possibly underutilized capacity.

17. Under the NCC's interpretation, criterion (b) would be satisfied if development of a new facility would be socially inefficient but privately profitable.[9] It is my view that this interpretation of criterion (b) is inconsistent with sound economics and regulatory policy. Given that the purpose of criterion (b) is to ensure that declaration would not occur in those cases where markets are well-positioned to resolve access issues efficiently, then the appropriate interpretation of criterion (b) is that a service should not be declared unless it is *privately* uneconomical for anyone (other than the facility owner) to develop an alternative facility.

18. Basic economic principles imply that unless it is privately uneconomical to develop an alternative facility, social efficiency can be achieved without mandating access to existing facilities. Unless it is privately uneconomical for an access seeker to develop its own facility, the access seeker can use the threat of that development as leverage in negotiating efficient access arrangements. This threat is credible unless alternative development is privately uneconomical. Rather than facing new competition from an alternative facility, the facility owner could agree to pro-competitive access terms that yield greater profits than under competition with the alternative facility. Such access terms would exist if it were more economically efficient to share access to one set of facilities than for multiple facilities to be built, maintained and utilized.

[9] March 11, 2005 Issues Paper at ¶ 5.3.

19. Under the standard economic theory of bargaining, the facility owner and the access seeker will reach an agreement that maximizes joint surplus.[10] If sharing the existing facility is more efficient than developing an alternative facility, joint profits will be greater under shared access, and the two parties would be motivated to agree to a facility sharing arrangement. Alternatively, if sharing the facility is less efficient and yields smaller joint profits than developing an alternative facility, the parties will not agree on an access arrangement, and the access seeker will develop its own facility. Thus, if it is privately economical to develop an alternative facility, properly-functioning market mechanisms will enhance competition in a way that efficiently allocates resources and access rights. This is the case even if the facility owner would otherwise have had market power in a dependent market by virtue of its control over the facility. If it is privately economical to build another facility then any such market power is likely to be countered by the competition in the dependent market created by the use of the alternative facility or arrangements for voluntary access to the existing facility.

20. Unless development of an alternative facility is privately uneconomical, declaration is unnecessary to attain the efficient outcomes likely to result from voluntary negotiations and arrangements, and declaration has the potential itself to lead to inefficient outcomes that would have been avoided without declaration. Consequently, focusing criterion (b) on the private value test makes it logically powerful, as well as more straightforward to assess. Should it be necessary for the overall analytic process to go beyond criterion (b) when it is interpreted this way, social values, social costs and concerns beyond private ones experienced by possible builders of alternative facilities can be reserved for consideration under criterion (f).

21. The NCC preferred the social value test in its Final Recommendations to declare the Hamersley and Robe Services.[11] According to the NCC, this is a test of

[10] This is a widely accepted principle in the economics literature on inter-firm agreements and on bargaining. It was first articulated in the Nobel Prize winning work of John Nash, "Two-Person Cooperative Games." *Econometrica* 21 (1953): 128-140. It was also discussed in the Nobel Prize winning work of Roland Coase, "The Problem of Social Cost." *Journal of Law and Economics.* 3 (1960): 1-44.

[11] Hamersley Final Recommendation at ¶ 5.2; and Robe Final Recommendation at ¶ 5.2

whether the facility can serve the range of foreseeable demand for the services it provides at less cost than would be incurred by two or more facilities.[12] There are a number of reasons why applying this social value test in assessing criterion (b) is inappropriate from an economic perspective. The application of the social value test estimates whether it would be socially economical (i.e., would result in greater economic efficiency) to develop an alternative facility. However, a finding that the development of an alternative facility would be socially less costly does not necessarily mean that it is privately economical.[13] Thus, even if the Tribunal were to conclude that the net social benefit of developing an alternative facility would outweigh the net social benefit of shared access, it may be the case that no firm would actually develop the new facility. In such a case, the government may subsidize the development of a socially efficient but privately uneconomical facility. However, as a practical matter, such a policy of subsidizing private development may be difficult to implement without incurring significant social costs. A policy of subsidizing development would give firms an incentive to game the system and hold up development until they receive a significant subsidy (even if it is privately economical to undertake the development). Regulatory actions necessary to determine the appropriate subsidy amount would introduce further social costs and would therefore result in additional efficiency losses.

22. The social value test is likely more complex inasmuch as it entails more elements than the private value test. As a result, it is likely a more accurate overall procedure to reserve considerations of social value for criterion (f) and focus criterion (b) on private values for which assessment may be more reliable and possibly definitive for a conclusion that declaration is inappropriate because it is unnecessary for the attainment of efficient access.

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[12] Hamersley Final Recommendation at ¶ 5.3. My understanding of the term "social" is that it refers to the costs and benefits that accrue to only Australian residents.

[13] This could be the case, for example, if the development of an alternative facility were to generate positive externalities that are not fully captured by the developer of the facility. The development of a facility might spur economic development in the facility's region. The facility developer would not likely capture the full benefits of greater economic development and might even incur losses from it because greater economic activity in the region might force the developer to pay higher wages.

23. The likely complexity of the social value test arises in part from the many possibly significant sources of social costs. The social costs of mandated access may include, among others: (1) the costs of the physical access or interface to the facility; (2) conflicts and disagreements over priorities for expansion and changes in facilities operation; (3) administration and regulatory costs of access sharing; (4) litigation, regulatory compliance, and adjudication costs associated with any conflicts that may arise from shared access; (5) reduction in investment, maintenance, and upkeep of a facility as a result of resource sharing (i.e., free-rider costs); (6) costs of diminished output capacity and diminished optimization of facility operations; (7) misallocation of resources attributable to mandated access as opposed to allocation based on market prices and supply – demand conditions; (8) loss of potential competition between facilities; (9) dynamic inefficiencies from reduced incentives to build new facilities or invest in new technologies.[14] All of these categories of costs have the potential to be significant, and many are likely to be difficult to estimate and predict.

24. In contrast, the private value test may possibly be performed in a relatively straightforward fashion, with a minimum of assumptions and predictions about future effects of regulation. In some cases, the economic viability of an alternative facility can be inferred directly from past facility development or from plans by access seekers to build their own facilities. Where there is evidence of this nature that is relevant to criterion (b) and that is likely reliable in its inferences, the entire analytic process can be shortened and enhanced in its reliability by the logically correct interpretation of criterion (b) in terms of private values.

25. As I explained above, the private value test does not assume that new facility development will occur whenever it is privately economical. Where sharing access is more efficient than new development, even if new development is privately economical, sharing access efficiently is likely to be the commercial outcome.

[14] These costs are discussed in greater detail below.

26. Thus, the private value test reliably identifies conditions under which declaration is not necessary for enhancing competition or achieving efficient allocation of resources. The social value test does not reliably identify such conditions. Therefore, the appropriate test for assessing criterion (b) is the private value test and not the social value test.

Q. What kinds of evidence would be relevant to assessing whether criterion (b) is satisfied?

27. A. Evidence that an entire alternative facility or a portion of an alternative facility has been constructed by someone other than the facility owner provides relevant information for assessing criterion (b) under the private value test. The construction of an alternative facility suggests that it may be privately profitable for an access seeker to construct its own alternative facility, or economical to utilize that built by someone other than the owner of the original facilities, thus satisfying the private value test.

28. The expectation of profitability of past facility development projects can be inferred from the basic economic principle of revealed preference: an action undertaken by a person (such as construction of a new facility) reveals to outside observers that the person expected the action to be privately profitable.[15] Whether it can be inferred from the history of facility construction that developing an alternative facility is economical depends on the degree to which past facility development is comparable to the economics of developing new facilities. For example, if a new facility is expected to have smaller development costs than did existing facilities but serve greater demand, it is reasonable to infer that the construction of a new facility would be privately profitable for the access seeker. Under the revealed preference principle, past development of a facility under less or equally favorable market conditions implies that new facility construction

[15] *Ex post*, or after the fact, the action may turn out to be unprofitable for the person. However, the fact that the action was undertaken suggests that there was an *ex ante* (before the realization of investment return) expectation of profitability even if the action ultimately was unprofitable.

under more or equally favorable market conditions would likely be expected to be privately economical.

29. The revealed preference principle also applies to credible commitments and evidenced intentions to develop new facilities. The commitments reveal to outside observers that the developer expects the construction of the new facility to be privately economical. Thus, a credible commitment to develop a new facility shows that the development of the facility is perceived to be privately economical even if the development project is yet to be completed or even commenced.

30. Although a commitment to develop a new facility provides a clear indication of the developer's assessment that the project is privately economical, the actual completion of the development would provide an even stronger signal of the assessment. Actual completion of a facility demonstrates the developer's willingness to carry out the development commitments.[16] Until the project is actually completed, the developer retains the option to halt construction. Nonetheless, specific actions taken by the developer can be clear and credible indications of the developer's assessment that the project is privately economical. Such actions include obtaining financing for development, incurring some development expenditures, incurring expenditures to obtain the necessary permits for the facility, making investments in assets that rely on the successful completion of the facility, and entering into partnerships based on the future use of the facilities to be constructed.

31. As a matter of economic analysis, the private value test under criterion (b) may also be satisfied by the construction of an alternative facility or the commitment to the construction of an alternative facility by someone other than the owner of the original facilities so long as the alternative facilities may be economically utilized by the access seeker or others playing the equivalent competitive role. In these circumstances,

[16] The completion of the project also demonstrates the developer's ability to secure financing for the construction of the facility. The willingness by capital markets (if the project was financed externally) to finance the project further validates the assessment of private profitability of constructing the facility.

competition is not dependent upon the access seeker obtaining access to the original facilities or utilizing its own alternative facilities. In these circumstances too, the access seeker may have a credible threat to employ the alternative facilities owned by another party, and thus induce negotiations to an efficient sharing arrangement with the owner of the original facility.

32. In the absence of a history of facility development or credible commitments to develop alternative facilities by persons other than the facility owner, an assessment of whether criterion (b) is satisfied may consider other evidence of whether the construction of alternative facilities would be privately economical. Such evidence would focus on anticipated expected long term economic returns from investment in the development of alternative facilities. Consideration of both the supply of and demand for the services provided by existing and new facilities would be relevant. Assessments of future demand are critical to the assessment of the profitability of new facility development. If the expected demand were sufficiently large, new facility construction would likely be privately profitable so long as there were no unique physical barriers.

33. It is important to calibrate the timing of the assessment of demand for new facility commitment and construction for criterion (b). When market demand is low and projected to be low, demand for access is likely to be correspondingly low, and voluntary forms of access may be more fluidly negotiated. When access is more costly and difficult to negotiate due to conflicts over capacity utilization, so that declaration is more of an issue, it is likely to be the case that demand is high in level and anticipation, so that forward views of new facility construction are more apt to be propitious.

Q. What role, if any, does the question of whether or not the facility displays natural monopoly characteristics have in assessing whether criterion (b) is satisfied?

34. A. Whether or not a facility displays natural monopoly characteristics is not an appropriate standard for the assessment of criterion (b). Nonetheless, information about the structure of costs, including the costs of conferring access and sharing

utilization, as well as the costs of construction, may be relevant evidence for criterion (b) and other criteria.

35. In its Final Recommendation to declare the Hamersley and Robe Services, the NCC appears to assess criterion (b) based on its version of the natural monopoly test. The NCC defines natural monopoly as a condition where "a single facility is capable of meeting likely demand at lower cost than two or more facilities."[17] Similarly, in its Final Recommendation in relation to the Mt Newman Application, the NCC finds that

> "criterion (b) is satisfied if, over the relevant range of demand, it is less costly for a single facility rather than multiple facilities to provide the service. The facility is then a natural monopoly, and the construction of two or more facilities offering the same service would be an inefficient use of society's resources."[18]

Thus, the NCC's "natural monopolist" test for satisfying criterion (b) entails an "assessment of whether a single facility can serve the range of reasonably foreseeable demand for the service to which access is sought at a lower *social* cost than two or more facilities."[19]

36. It is important to observe that the NCC uses a non-standard definition of natural monopoly in its assessment of criterion (b). A standard economic definition states that an industry is a natural monopoly when it is most efficient for a *single firm* to supply the entire market.[20] Note that under a standard definition of natural monopoly, it is efficient for a single firm, rather than a single facility, to supply a market. The distinction

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[17] Hamersley Final Recommendation at ¶ 5.3.

[18] National Competition Council Fortescue Metals Group Ltd Application for declaration of a service provided by the Mt Newman railway line under section 44F(1) of the *Trade Practices Act 1974*, Final Recommendation, 23 March 2006, ("Mt Newman Final Recommendation") at ¶ 6.12.

[19] Mt Newman Final Recommendation at ¶ 6.15. (Emphasis added.)

[20] Robert Pindyck and Daniel Rubinfeld (2001) *Microeconomics*, Fifth Edition, Prentice Hall, p. 350. See also, Ronald Braeutigam (1989) "Optimal Policies for Natural Monopolies", in *Handbook of Industrial Organization*, ed. R. Schmalensee and R. D. Willig, Elsevier-North Holland, vol. 2, p. 1295; and William Baumol, John Panzar, and Robert Willig (1982) *Contestable Markets and the Theory of Industry Structure*, Harcourt Brace Jovanovich, p. 17.

is critical. If it is most efficient for a single firm to supply a market, it does not follow that greatest efficiency is achieved by sharing a single facility by *two or more* firms.[21]

37. As I explained earlier, the social value test, and consequently the NCC's "natural monopoly" test, is not appropriate for assessment of whether criterion (b) is satisfied. The appropriate test for the assessment of criterion (b) is the private value test.

38. If an industry were truly a natural monopoly, greater efficiency would be achieved if the services in question were supplied by a single firm rather than by two or more firms, either using multiple facilities or through sharing an existing facility. It follows that if an industry is a natural monopoly, entry by a competitor, either through construction of an alternative facility or sharing an existing facility, may lead to a loss of efficiency even if the entry is privately profitable.[22] However, this is not the question that should be addressed by criterion (b). In its wording, criterion (b) focuses on whether alternative facility development is economical. Interpreting "economical" in terms of private incentives to build the facilities makes criterion (b) function well for economic efficiency as a component of the criteria for declaration. In contrast, interpreting "economical" in terms of whether or not an industry displays natural monopoly characteristics does not enable criterion (b) to conduce to economic efficiency, and therefore this test should not be construed as necessary for the assessment of criterion (b).

Q. If this analysis has any role to play in the context of criterion (b), how should this analysis be applied and how does it differ from a classic natural monopoly test? Further (or in amplification of your position on this question), in applying the natural monopoly test, what types of costs should be taken into account when

[21] In fact, a natural monopoly may entail multiple facilities operated by a single firm.
[22] This situation may occur even in industries where access to bottleneck facilities is not an issue. However, I am not aware of any evidence to suggest that excessive entry in natural monopoly industries results in significant deadweight loss for major economies. It may be for this reason that regulators in jurisdictions around the world are not typically concerned with excessive entry and instead often implement policies designed to facilitate new entry.

examining the cost of sharing an existing railway facility compared with building and operating a separate facility.

39. A. The social value test used in the Council's assessment of criterion (b) is not an appropriate standard, from the perspective of sound economics and policy, for determining whether industry conditions satisfy criterion (b). However, if the assessment of criterion (b) is required by law to be based on the social value test, this test should be carried out by determining whether the social net benefits (i.e., benefits minus costs) of mandated facility sharing exceed the social net benefits of alternative facility development. The potential benefit of mandated facility sharing (relative to new facility development) is the cost savings of not developing and operating the new facility. However, there are also significant costs of mandated facility sharing (relative to new facility development).

40. One important difficulty in assessing the social costs of mandated facility sharing is that the analysis is inherently speculative. The magnitude of the social costs of sharing mandates will depend to a large extent on factors that are essentially unknown at the time of declaration decision. For example, the magnitude of social costs imposed by facility sharing mandates depends to a large extent on the efficiency of regulatory policies governing access. By efficiency of regulatory policy I mean the extent to which regulatory policy imposes costs on society. Such costs may include the costs of regulatory compliance and information gathering, conflict and dispute resolution, hindering or delaying innovation, misallocation of resources, introducing incentives for parties to engage in opportunistic or fraudulent conduct, and otherwise inducing parties to engage in conduct that harms social welfare.[23] Regulatory policies governing access of bottleneck facilities, as practiced by various regulatory authorities around the world, have not always resulted in efficient regulation.[24] Moreover, achieving effective regulatory

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[23] I provide a more detailed discussion of the costs associated with mandated access regimes below.

[24] See, for example, Bruce Owen and Ronald Braeutigam (1978) *The Regulation Game: Strategic Use of the Administrative Process*, Ballinger Publishing; and Ioannis Kessides (2004)*Reforming*

policy is more challenging in cases that entail complex access regimes, that is, access regimes that entail extensive coordination and information exchange between access seekers and facility owners.[25] Achieving efficient regulations governing access mandates entails a difficult balancing between, on the one hand, a policy that encourages coordination and information exchange between parties necessary to achieve efficiencies, and, on the other hand, limiting coordination so as to preserve competition between the access seeker and the facility owner. The development of efficient regulatory policy may also take many years as regulators learn about the critical issues in mandating access in an industry. This is especially true for complex access arrangements. Thus, although it is difficult to make predictions about the effectiveness of future regulatory policy, in evaluating the social costs of an access mandate one must account for the possibility that the access regulatory policy will be inefficient at least in the near term, and likely encounter endemic socially costly challenges in the long run as well.

41. Similarly, the social costs of mandated facility sharing will depend on the willingness and the ability of parties to reach efficient sharing arrangements. The parties engaged in negotiations over the terms of facility sharing arrangements generally will have divergent priorities and will generally possess asymmetric information about the facility. In this case the parties may not be able to reach efficient sharing arrangements (even if facility sharing is mandated through declaration).[26] Parties engaged in negotiations over access terms may be intransigent in their demands and may be unwilling to accept compromises that improve the overall efficiency of sharing arrangements. It may be especially challenging for parties to agree on efficient access terms if access entails extensive coordination and information sharing. Some parties may

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Infrastructure: Privatization, Regulation, and Competition, World Bank and Oxford University Press, pp. 70-71.

[25] More complex access relationships are likely to engender asymmetric information between the parties where one party may possess important information about the facility or the use of the facility and where that information is not known by the other party. Under asymmetric information conditions it may be more difficult (or impossible) for parties to reach efficient access agreements. Furthermore, it may be extremely difficult and costly to implement efficient access regulatory policies when regulators must learn a large amount of information about the economics of the facility and the nature of mandated access in order to make informed decisions.

[26] See Myerson, Roger B.; Mark A. Satterthwaite (1983). "Efficient Mechanisms for Bilateral Trading". *Journal of Economic Theory* 29: 265–281.

engage in opportunistic bargaining conduct that harms the overall efficiency of a shared access arrangement.[27] Thus, an assessment of social costs of mandated access must also consider the possibility that the parties will be unable or unwilling to reach agreement on efficient sharing arrangements. Arbitration of access terms may likewise fail to achieve efficient facility sharing arrangements.

42. However, even if one assumes that access mandates will be governed by reasonably effective regulatory policies and if the parties are willing to make good faith efforts to reach efficient access agreements, there will still be significant social costs of access mandates. These costs include the following.

- *The costs of building the physical access or interface to the facility*

  This is the cost of building an interface that integrates the operations of the access seeker with that of the facility. In the case of rail access for transporting iron ore, the interface may include the rail line between the access seeker's mine and the facility owner's rail line as well as the junction between the two rail lines. This cost category also includes the costs associated with any incompatibilities between the systems operated by the facility owner and access seekers. In the case of gaining access to a railroad, an access seeker's car and locomotive fleet may have incompatible signaling technology, braking systems, wheel and rail profiles, and other operating features.[28] Thus, part of the social cost of providing access to a rail facility may include the costs of retrofitting equipment to ensure compatibility between rail systems.

[27] For example, suppose that a facility owner must modify the terms of access in order to achieve significant efficiencies. If the facility owner bears disproportionate costs associated with delaying the agreement on modified access terms, the third party user of the facility may extract most of the value of the efficiency improvements by threatening to delay agreement on new access terms.

[28] See Affidavit of Sid Hay, March 29, 2009 ("Hay Affidavit") at ¶¶ 6.180 – 6.186. I make reference to a number of affidavits filed on behalf of RTIO in this statement to provide examples of the types of social costs that may be caused by mandated access. However, inasmuch as some of the factual contentions in those affidavits are disputed by other parties, I have no expert opinions on these factual disputes.

- *Conflicts and disagreements over priorities for expansions and changes in facilities operation*

The facility owner and the user of the facility with mandated access will generally disagree on what is the appropriate price of access, and will have different priorities for expansion plans.[29] Such conflicts over the terms of access and expansion plans will need to be resolved through potentially lengthy negotiations or through involvement of regulators. Both of these outcomes may delay expansion plans or may delay efforts by the facility owner to optimize operations.[30] The need for regulators to be involved in resolving conflicts will necessarily delay efficient access arrangements and expansion plans because of the time and efforts that will be required for regulators to gather the necessary information to make decisions that are in the public interest. Such delays may induce opportunistic behavior by the access users of a facility because the delays may affect the parties asymmetrically. For example, if the facility owner stands to lose relatively more from a delay in the expansion of the existing facilities, an access user of the facility may demand significant concessions from the facility owner by threatening to seek further regulatory intervention and disrupting the facility owners' operations.

Furthermore, conflicts and disagreements over technology and operational changes at a facility may delay efficiency improvements at a facility. Such delays in technology adoption and operational changes may impose significant social costs in terms of greater operating costs, reduced output, or loss of competitive advantage.[31]

[29] See, for example, Affidavit of Warrick Reginald John Ranson, March 24, 2009 ("Ranson Affidavit") at ¶¶ 6.6, 6.12.
[30] See Ranson Affidavit at ¶¶ 6.1 - 6.52.
[31] Technological change, operational improvements, and capacity expansion appear to be important factors for efficiency of iron ore rail facilities. (Hay Affidavit at ¶¶ 5.1 – 6.186) Thus, conflicts and disagreements over technology and operational changes at iron ore rail facilities have the potential to impose significant social costs of mandated access.

- *Administration and regulatory costs of access sharing*

  Mandated sharing of facilities is going to entail some administration costs on the part of both the third party users of the facility and the facility owner. Such costs would include scheduling, coordination, and monitoring of counterparties' activities. In addition, there would be regulation costs incurred by the government or regulatory body. The appropriate regulatory body would have to employ professional staff responsible for setting and monitoring terms of access. These costs would only be incurred under a mandated facility sharing regime.

- *Litigation, regulatory compliance, and adjudication costs associated with any conflicts that may arise from shared access*

  It is likely that conflicts over the terms of access will arise among the parties in the facility sharing arrangement. Parties may disagree about the terms of access or the counterparties' compliance with those terms. Each party may be forced to incur significant costs to resolve the conflicts. Furthermore, conflict resolution may entail significant costs for courts or regulators engaged in arbitrating or adjudicating the disputes. These costs would only be present under a facility sharing arrangement.

  Some of the costs associated with the adjudication of conflicts may be indirect; such costs may include information gathering activities necessary for resolving potential disputes among the users of a facility. An example of such indirect costs includes train failure investigations under shared rail facility use arrangements.[32] Train failure investigations can be costly because such investigations may halt rail line operation for extended periods of time and thus adversely affect haulage capacity.[33] More detailed investigation of train failures may be necessary under a shared access regime because of potential claims by parties regarding improper

[32] See Hay Affidavit at ¶¶ 9.1 – 9.21.
[33] See Hay Affidavit at ¶¶ 9.5 – 9.12.

operation of equipment. More detailed and costly investigations of train failures may be avoided when the facility is not shared because there would be less need to assign culpability for the train failures.[34]

- *Reduction in investment, maintenance, and upkeep of a facility as a result of mandated facility sharing*

One consequence of mandated facility sharing is a reduction in the incentives to invest in upgrading or maintaining the facility. The basis for this effect is the economic principle sometimes referred to as the "free rider" problem. Under mandated facility sharing, the facility owner will have reduced incentives to invest in the facility (relative to no facility sharing) because the facility owner would not obtain the full benefit of the investment but would have to share the benefit of the investment with other users.[35] For example, if the owner of a rail line invested in upgrading the capacity of the line but could only use 50 percent of the additional capacity because of mandated sharing, the owner's incentives to invest in the rail line might be reduced relative to no mandated sharing, depending on the terms applied to competitors' utilization.

Similarly, users of a facility may have an incentive to engage in actions that reduce the efficiency of the facility's operation (such as operating their equipment in a way that generates excessive risks of breakdowns or performing insufficient preventive maintenance) if the costs of such actions are borne (in part or in full) by others (e.g., the facility owner or other users of the facility) and if the actions are not easily detected by the facility owner. This effect is sometimes referred to as "moral hazard" in economics literature.[36] Moral hazard in the use of a facility can result in inefficient facility operation and thus incur significant social costs.

[34] See Hay Affidavit at ¶¶ 9.17 – 9.18.
[35] This is reason why people are willing to clean their own houses but would not voluntarily clean public streets.
[36] See Bengt Holmstrom (1979) "Moral Hazard and Observability," *Bell Journal of Economics* 10(1), pp. 74-91. The "free rider" problem is closely related to moral hazard.

But these costs would be avoided if the facility were not shared because in this case the facility owner would incur the full costs of the efficiency losses and would therefore try to avoid actions that reduce the facility's overall efficiency. The costs associated with moral hazard may be reduced through increased monitoring of facility use. However, such increased monitoring costs may themselves be significant and should be considered as part of the social costs of access mandates.[37]

- *Costs of diminished output capacity and diminished optimization of facility operations*

When an existing facility has finite capacity, development of an alternative facility will expand industry capacity and create additional flexibility to respond to rising demand. Reduced capacity under facility sharing (relative to new facility development) represents a social cost of potential output reduction or diminished flexibility to respond to variability of demand conditions as well as to facility outages.[38] Mandated facility sharing may also harm efficiency by limiting the potential set of optimization strategies. For example, an iron ore firm may be able to reduce operating costs by choosing optimal freight size, frequency, and schedule.[39] However, if the iron ore firm must share its rail line with other users, the optimal freight strategies may no longer be available, and its overall freight costs may increase.[40] Furthermore, facility sharing may reduce users' flexibility in ramping up production or reprioritizing facility-based services. For example, an iron ore firm may be in a position to win a large customer order only if it could supply a set quantity of iron ore in a relatively short period. Mandated sharing of the firm's rail line may preclude it from winning the order if the firm's access to

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[37] For example, in the case of shared rail facility use, the more detailed investigations of train failures may be necessary to reduce the moral hazard costs of shared facility use. See Hay Affidavit at ¶¶ 9.17 – 9.18. Thus, the social costs of access mandates may include the costs of more detailed train failure investigations.

[38] See Affidavit of Dale Geoffrey Harris, March 24, 2009 at ¶¶ 9.24 – 9.34.

[39] See Hay Affidavit at ¶¶ 5.3 – 5.41.

[40] See Hay Affidavit at ¶¶ 5.42 – 5.55.

the line would provide it with insufficient capacity to supply the customer. This outcome may result in efficiency losses if the order is instead awarded to a higher cost supplier.

In the case of iron ore rail facilities, optimization of operations may require close coordination among the ore mining, rail, and port operation.[41] The use of rail facilities by a third party iron ore mining firm may disrupt the optimization that occurs by coordinating the mining, rail, and port operations of the vertically integrated facility owner.[42] Such disruption in optimization of operations may substantially reduce output capacity and harm efficiency. The consequent loss of efficiency should be included in the social cost of shared access mandates. Realization of efficiency benefits of optimizing operations in the entire supply chain may be a significant rationale for vertical integration by iron ore mining firms.[43] Thus, if access to a rail facility is to be shared by two or more iron ore mining firms, full efficiencies from optimization of the mining, port, and rail facilities may be achievable only if all the rail facility users also coordinate their mining and shipping activities with each other. However, such coordination may reduce or eliminate any benefits from new competition in markets that are dependent upon the use of the facility.

- *Misallocation of resources attributable to mandated access as opposed to allocation based on market prices and supply – demand conditions*

Market pricing of access to a shared facility would allocate facility resources in such a way that provides more access to users and uses with greater need and value. However, if access is based on rigid regulatory rules rather than market prices, the allocation of facility resources would generally be inefficient, and

[41] See Hay Affidavit at ¶¶ 5.3 – 5.41.
[42] See Hay Affidavit at ¶¶ 5.42 – 5.55.
[43] For a discussion of economic rationale of vertical integration see: Sanford Grossman and Oliver Hart (1986) "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy* 94(4), pp, 691-719; and Oliver Hart (1995) *Firms Contracts and Financial Structure*, Oxford University Press.

users with the greatest need may not gain more access to the shared facility. Such inefficiencies from misallocation of resources should be included in the total social cost of access mandates.

- *Loss of potential competition between facilities if an access seeker built its own facility in the absence of mandated sharing*

This may be considered a benefit of constructing an alternative facility rather than a cost of sharing a facility. However, competition between owners of separate facilities is apt to be enhanced by the fact that each experiences relatively low marginal costs of utilizing its own capacity. In contrast, what firms consider to be their marginal costs in an environment of mandated access depends on the mandated prices for access, perhaps resulting in attenuated competition.

- *Dynamic inefficiencies from reduced incentives to build new facilities or invest in new technologies*

If, under mandated facility sharing, access seekers would face lower usage costs than would the facility owner, there would concomitantly be incentives to delay development. Delaying development of a facility until a rival develops its own facility may enable the firm to use the facility as an access seeker rather than the owner. Such delays in development would lead to significant losses of efficiency.

Facility owners may also have reduced incentives to invest in expanding capacity because much of the return from the investment in new capacity may be captured by the third party users of the facilities. If the facility owner bears the full cost of the investment in new capacity but captures only partial benefits of the investment, the facility owner may forgo investment in some efficiency-enhancing projects. The facility owner and access users of a facility may be unable to agree to invest jointly in expansion of capacity because of divergent

priorities for additional capacity.[44] The parties may also not be able to reach agreement on the terms of use for the new capacity in a way that provides incentives for the facility owner to invest in efficient capacity expansion.[45] Therefore, because of an access sharing mandate, the facility owner may forgo investing in efficient capacity expansion, which would harm overall efficiency.

Likewise, an access sharing mandate may impede a facility owner's ability and incentives to invest in efficient new technologies (that may expand output capacity or reduce costs). The facility owner and third party users may not agree on technological improvements for the facility because of divergent views and priorities.[46] The facility owner may also not be able to recover its investment in a new technology because it may not be feasible to charge the access users of the facility prices that reflect the full benefit of the new technology.[47] Further, the facility owner may forgo using a new proprietary technology at a shared access facility because of concerns about expropriation of the proprietary technology by other parties. Thus, access mandates may impede efficient investment in innovation and use of technology, which would reduce efficiency and generate welfare losses.

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[44] See discussion above.

[45] It may not be possible to write an enforceable and complete contract between the facility owner and users of a facility that would provide incentives for the facility owner to invest in an efficient capacity expansion (i.e., a capacity expansion that will generate a net social benefit). This issue is referred to in economics literature as the "incomplete contracts" problem. (See Oliver Hart and John Moore (1999) "Foundations of Incomplete Contracts," Review of Economic Studies 66(1) pp. 115-138.) Because the parties are not able to write a "complete" contract, an investment in an efficient capacity expansion may never be undertaken. (See Oliver Hart (1995) *Firms Contracts and Financial Structure*, Oxford University Press.)

[46] See Hay Affidavit at ¶¶ 6.172 – 6.175.

[47] The facility owner may not be able to charge users prices to reflect the full value of the technology because of inability to write complete contracts for the technology's terms of use prior to the investment in the new technology. See discussion above.

CRITERION (F)

Q. As a matter of economic principle and good public policy, how do you interpret criterion (f)?

43. A. Criterion (f) states that "The Council cannot recommend that a service be declared unless it is satisfied … that access (or increased access) to the service would not be contrary to the public interest."[48] I understand that criterion (f) seeks to identify whether mandating access to a facility would not result in greater economic efficiency. If criterion (f) is not satisfied, that is, if declaration of a facility would not enhance economic efficiency (or alternatively not be in the public interest), then as a matter of sound economics and public policy, the facility should not be declared.

44. My interpretation of criterion (f) is that declaration cannot be granted without a showing that mandated access to the facility in question will not result in reduced economic efficiency or reduced social welfare. Thus, a showing that mandated access would reduce economic efficiency, under criterion (f), would prevent declaration. As a matter of sound economics and public policy, a service should not be declared if criterion (f) is not satisfied. That is, if mandating access will result in reduced economic efficiency, the facility should not be declared. To assess whether criterion (f) is satisfied, the analysis should estimate the net social benefit of mandating access relative to outcomes in the absence of mandated access. These could include voluntary access arrangements, construction of alternative facilities, and possibly a rearrangement of output levels among the firms.

45. As a matter of economic logic, if criterion (b) is not satisfied, criterion (f) becomes irrelevant because under criterion (b) the service should not be declared regardless of whether criterion (f) is satisfied. Thus, the assessment of criterion (f) should *assume* that criterion (b) is satisfied and that alternative facility development will not occur in the absence of declaration. This is appropriate since voluntary negotiations

[48] Section 44G(2) of the TPA.

without declaration can be expected to reach the efficient outcome with respect to access where it is the case that alternative facilities would be privately economical.

Q. Is it appropriate to conduct a cost/benefit analysis (from society's perspective) of mandated access in assessing whether criterion (f) is satisfied?

46. A. It is appropriate to conduct an analysis of net social benefits of mandated access in the assessment of whether industry conditions satisfy criterion (f). Although there are benefits of facility-sharing that potentially accrue to the public (both consumers and investors), there are also significant costs. The principal possible source of benefits from mandating access is that such access may lead to a significant increase in competition in markets that are dependent upon the service at issue. There may be benefits to society, not just to particular interests, resulting from such an increase in competition. At the same time, as we have seen above, there may be substantial costs to society engendered by mandated facility-sharing. These costs may counteract, eliminate or outweigh the social benefits. Thus it is necessary, as per criterion (f), to analyze both the character and extent of the benefits and costs resulting from declaration in order to reach an informed judgment of the net impact of mandated access on economic efficiency and social welfare.

47. It is important in assessing the benefits of any increased competition enabled by declaration to focus on benefits to society and distinguish them from any benefits that may accrue to particular individuals or groups without net increases in total benefits to all participants in society. Greater competition arising from firms sharing access to the facility in question may generate benefits by reducing any seller market (monopoly) power and reducing any buyer market (monopsony) power. It should be noted that any *social* benefit from a reduction in monopoly or monopsony must be from greater allocative efficiency rather than from greater surplus earned by the buyers or sellers (either direct or indirect) in the markets that are dependent upon the service at issue. Unless there is improvement in allocative efficiency from greater competition, any

increase in surplus earned by the buyers or sellers in the markets that are dependent upon the service at issue will be at the expense of the surplus earned by the providers of the services and thus would not affect social efficiency. This is a particularly strong possibility in the context of mandated access, where the access-seeker may be able to displace the activities of the facilities owner by dint of the regulatory mandate, so that the commercial gain of the access-seeker may be offset or more by the lost commercial opportunities of the facilities owner. In such a case, the gain to the access-seeker may be the cause of a loss in economic efficiency and a diminution of social welfare if the social costs of supply by the access-seeker exceed the social costs of the displaced supply of the facilities owner.

48. It might be argued that the access seeker will face a price for its access that incorporates the costs that the access causes.[49] Then, the argument goes, if those costs outweigh the benefits of access, the access seeker will be unwilling to pay the price. Thus, it might be argued, demand's reaction to pricing will protect against access with greater costs than benefits, so that there is no need for the sort of analysis seemingly called for by criterion (f).

49. This argument would be appealing and rather logical when applied to mutually voluntary transactions and access arrangements without externalities, but it has no validity that overcomes the need to consider criterion (f) when applied in the context of declaration. Here, it cannot be logically presumed that prices for access would fully reflect the costs that mandated access imposes on the facilities owner and on the market more generally. As described above, these costs may include many such important elements as congestion, disruption, opportunity, conflict, and investment paralysis costs that are difficult to measure, ever-changing and challenging for regulators to assess – particularly on a timely basis. As such, there may be circumstances and areas of application where prices set by regulatory processes for mandated access cannot be reliably expected to reflect the social costs of that access. Under such circumstances and in such areas of application, therefore, demand's reaction to the price of access cannot be

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[49] E.g., Hamersley Final Recommendation at ¶ 9.163.

relied upon to stop mandated access from generating significant costs to society that are well in excess of any benefits. Thus, part of the assessment of criterion (f) may be the consideration of whether regulated prices for access can be expected in the applicable circumstances fully and reliably to reflect the social costs of access. This would require the expectation that regulators would be credibly apprised of the needed information in the relevant time frame, and that regulators would make use of that information to adjust access prices even at times to levels that might suppress access demand. Otherwise, regulated prices cannot be counted on to assure that declaration would be in the public interest, and instead, full analysis like that required by criterion (f) is essential to protect the public interest.

50. A key element of the consideration of criterion (f) is to assess the potential impacts of mandated access on competition. Because total social costs of mandated facility-sharing are likely to be considerable, criterion (f) would likely be satisfied only if there are likely to be significant social benefits from increased competition.

51. The social benefits from increased competition are neither measured nor indicated by increased number of suppliers or market participants. Rather, the potential social benefits of increased competition should be assessed based on criteria that directly affect social welfare. Such criteria may include growth of output, reduction in cost of output, enhancement of output quality, and increases in variety of output. In general, there may well be enough suppliers to a market for that market to perform in a fully or nearly fully competitive fashion, and an influx of additional market participants may add little or nothing to the social benefits provided by the market, unless the new suppliers bring enhanced productivity or better product quality. In a market where transactions and supply relationships are mutually voluntary, additional market participants are apt to bring with them enhanced competitiveness, productivity or product quality because otherwise they would be unable to break into the market as an active participant. However, in a market with mandated access, the addition of new active suppliers may reflect nothing more than favorable treatment by regulation, with no reason to associate

such new supply with enhanced competitiveness or efficiency, and with the possibility that the new suppliers' arrangements may actively impede efficiency and productivity.

52. The social benefits from increased competition can generally be indicated and measured by increases in output, where it is understood that such increases often are caused or supported by decreases in costs and prices, and increases in product quality. Increases in the number of active market participants without concomitant increases in the market output means that the new participants' output displaces output of the incumbents, and if that displacement occurs through mandated access, there is no assurance that social efficiency is not hurt as a result.

53. Increases in inputs utilized in a market are ambiguous as indicators of possible social benefits from increased competition. Such increases may reflect increases in the productivity of the inputs, so that production costs are diminished, and outputs are likely to rise as a matter of economic logic as well. On the other hand, increases in inputs may reflect diminution in their productivity, so that more utilization is necessary to sustain production. This may be a concomitant of mandated facility sharing, where the inputs are no longer selected entirely on the basis of their efficiency, and the less productive inputs with favorable regulatory treatment may displace more productive inputs. Thus, here too, the impacts on output are the reliable indicators of the social benefits or harms from the arrangements that may seem superficially to constitute increases in competition, but which may not be beneficial in fact.

54. In many market settings, price decreases are taken to be signs of increased competitiveness of the market. This inference is ordinarily based on the economic logic that the exercise of monopoly power elevates price, as it suppresses output, and that increases in competition have obverse effects. Such conventional logic can break down in a market setting with mandated access at regulated prices. If those prices are too low, then access-seekers with no genuine cost advantage in productivity or social efficiency could nevertheless undercut competitive market prices due to the regulatory advantage. An observer might mistake the resulting downward pressure on output price as the result of enhanced competition, when it is instead the result of regulatory advantage that does

not benefit social efficiency and that instead transfers value from the investments of the facilities owner to the mandated facilities' users.

55. Finally, another key reliable indicator of increased competitiveness of a market is the dynamism of innovation and capacity enhancing investment, along with increased utilization of more productive inputs. Such dynamic progress in a market results from incentives and opportunities to invest in new capacity, or in new methods of production, or in new sources of inputs with superior properties or lower costs. Over time, such pro-competitive dynamism shows up as increasing and improving outputs, and perhaps as lowering prices as well, controlling for other exogenous impacts on the market.

IV. DECLARATION TO THE TRIBUNAL

56. Set out in Appendix C to this statement is a copy of the "Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia" as provided to me by AAR. I have read these guidelines and prepared this statement to comply with these guidelines.

57. I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance that I regard as relevant have, to my knowledge, been withheld from the Tribunal.

30 June 2009

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Robert D. Willig