Issues Paper on the New Facilities Investment Test for a 66/11 kV Medical Centre Zone Substation Expansion and Voltage Conversion of the Distribution Network

Submitted by Western Power

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Economic Regulation Authority
WESTERN AUSTRALIA

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INTRODUCTION

1. On 7 August 2008, Western Power submitted to the Economic Regulation Authority ("**Authority**") an application under section 6.71 of the *Electricity Networks Access Code 2004* ("**Access Code**"). The application is for the Authority to determine that forecast new facilities investment proposed by Western Power, for a 66/11 kV substation and associated distribution works at Sir Charles Gairdner Hospital ("**proposed substation**"), meets the new facilities investment test.[1]

2. Western Power's pre-approval application has been published on the Authority's web site (www.era.wa.gov.au) together with this issues paper.

3. The proposed substation was the subject of an application made to the Authority in March 2008 for the Authority to waive requirements for the regulatory test under Chapter 9 of the Access Code.[2] The Authority waived the requirement for the regulatory test on the basis that it was satisfied that there are no viable alternative options to the proposed substation and that the nature of the funding of the proposed substation will not cause a net cost to those who generate, transport and consume electricity in the covered network and any interconnected system.[3]

4. The new facilities investment test is a further test under the Access Code that is separate from the regulatory test and requires a separate determination by the Authority.

5. In making a determination on the pre-approval application, the Authority is required to consult with the public in accordance with the requirements of Appendix 7 of the Access Code. The Authority has prepared this issues paper to assist interested parties in understanding the new facilities investment test and Western Power's pre-approval application.

6. The remainder of this issues paper addresses the following matters:

    - a description and explanation of the new facilities investment test under the Access Code;
    - a description of the proposed substation; and
    - an overview of Western Power's assessment of the investment in the proposed substation against the requirements of the new facilities investment test.

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[1] Western Power, 5 August 2008, Submission to the Economic Regulation Authority Pre-Approval of New Facilities Investment 66/11 kV Medical Centre Zone Substation expansion and voltage conversion of distribution network (hereafter cited as the "pre-approval application").

[2] Western Power, 24 March 2008, Submission to the Economic Regulation Authority Request for Waiver of Regulatory Test 66/11 kV Medical Centre Zone Substation expansion and voltage conversion of distribution network (hereafter cited as the "request for waiver").

[3] Economic Regulation Authority, 15 April 2008, Determination on an Application from Western Power to Waive the Regulatory Test for a 66/11 kV Medical Centre Zone Substation Expansion and Voltage Conversion of the Distribution Network.

THE NEW FACILITIES INVESTMENT TEST

Purpose

7. New facilities investment is defined in section 1.3 of the Access Code as:

> the capital costs incurred in developing, constructing and acquiring the new facility, where "new facility" means any capital asset developed, constructed or acquired to enable the service provider to provide covered services, including assets required for the purpose of facilitating competition in retail markets for electricity.

8. The new facilities investment test is a determination of whether, or to what extent, the new facilities investment associated with a new network asset, or set of assets, can be added to the capital base of the covered network and recovered through regulated network tariffs applied to users of the network. Only that amount of new facilities investment that meets the new facilities investment test can be added to the capital base of the network and recovered through regulated network tariffs.

9. If all or part of new facilities investment associated with a new network asset does not meet the new facilities investment test, the amount that does not meet the test would need to be financed by some means other than recovery through regulated network tariffs. This typically occurs through the charging of capital contributions and, accordingly, the new facilities investment test is important in the determination of amounts of capital contributions.

Difference from the Regulatory Test

10. The new facilities investment test is one of two tests under the Access Code that service providers may need to apply to capital investment. The other test is the regulatory test set out in Chapter 9 of the Access Code. The purpose of the regulatory test is to identify the optimal solution to a constraint in electricity supply (either as a network solution or other solution), whereas the purpose of the new facilities investment test is to determine the extent to which investment in a network solution may be financed through network tariffs applying to all network users, or must be financed by some other means (such as capital contributions from specific network users).

11. Under the regulatory test, a service provider is required to demonstrate that a major augmentation of a covered network meets the regulatory test before the service provider can commit to the augmentation. In general terms, the purpose of the regulatory test is to determine whether a proposed augmentation to an electricity transmission and/or distribution network is the best way of overcoming constraints in the wider electricity system, taking into account alternative means of overcoming the constraints, such as, alternative network investments, investment in generation, or management of electricity demand.

12. The regulatory test is used to identify the best network, generation or demand-management option, which is the option that would maximise the net economic benefits to those who generate, transport and consume electricity. The regulatory test is used only to determine whether a proposed investment in the network is the best option for overcoming constraints in the electricity system. The test is not concerned with demonstrating the efficiency of forecast costs for the proposed network investment, nor with the extent to which the network investment will be

financed by increasing the general level of network tariffs. Both of these matters are addressed by the new facilities investment test.

13. The new facilities investment test is separate from the regulatory test and is applied to determine the extent to which the cost of an augmentation of the network (i.e. the amount of new facilities investment) can be financed by adding all, or part of the new facilities investment, to the capital base of the covered network and recovering the investment through regulated tariffs. Under the new facilities investment test, the extent to which the cost of an augmentation can be financed through the capital base is determined by tests of the prudence and efficiency of investment, the nature of the benefits of the augmentation, and the distribution of these benefits across users generally.

14. A determination by the Authority that an augmentation of a covered network meets the regulatory test does not mean that the new facilities investment associated with the augmentation meets the new facilities investment test, and vice versa.

Requirements of the Access Code

15. Section 6.52 of the Access Code sets out the new facilities investment test, as follows.

> 6.52 New facilities investment may be added to the capital base if:
>
> (a) the new facilities investment does not exceed the amount that would be invested by a service provider efficiently minimising costs, having regard, without limitation, to:
>
> (i) whether the new facility exhibits economies of scale or scope and the increments in which capacity can be added; and
>
> (ii) whether the lowest sustainable cost of providing the covered services forecast to be sold over a reasonable period may require the installation of a new facility with capacity sufficient to meet the forecast sales;
>
> and
>
> (b) one or more of the following conditions is satisfied:
>
> (i) either:
>
> A. the anticipated incremental revenue for the new facility is expected to at least recover the new facilities investment; or
>
> B. if a modified test has been approved under section 6.53 and the new facilities investment is below the test application threshold - the modified test is satisfied;
>
> or
>
> (ii) the new facility provides a net benefit in the covered network over a reasonable period of time that justifies the approval of higher reference tariffs; or
>
> (iii) the new facility is necessary to maintain the safety or reliability of the covered network or its ability to provide contracted covered services.

16. New facilities investment may be assessed against the requirements of the new facilities investment test either as part of an access arrangement review process or outside an access arrangement review process.

17. During an access arrangement review process, the Authority undertakes an assessment of whether an actual amount of new facilities investment satisfies the new facilities investment test (under section 6.52 of the Access Code). In addition, a forecast of new facilities investment may be taken into account when determining reference tariffs for the access arrangement period (under section 6.51 of the Access Code). In this instance, the Authority makes and publishes a determination, in respect of the new facilities investment, in accordance with the access arrangement review process that is set out in Chapter 4 of the Access Code.

18. Outside an access arrangement review process, under section 6.71 of the Access Code, a service provider may at any time apply to the Authority for it to determine whether actual (or forecast) new facilities investment made (or proposed) by the service provider meets (or will meet) the new facilities investment test. In this instance, the Authority must make and publish its determination within a reasonable time. While the Access Code does not specify what a reasonable time period is, the Authority must before making its determination consult with the public in accordance with Appendix 7 of the Access Code and is hence confined to the time limits specified in Appendix 7.

19. Where the Authority makes a determination outside an access arrangement review process, the determination binds the Authority in allowing the addition of the actual new facilities investment to the capital base at the time that the Authority approves proposed revisions to the access arrangement for the covered network. In the case of forecast new facilities investment, the determination only binds the Authority if the new facilities investment has proceeded as proposed. The Authority considers this to include the new facilities investment proceeding as planned and the cost not exceeding the forecast. Should the cost exceed the forecast, then a further application would be necessary for this amount under the new facilities investment test provisions of the Access Code.

20. Western Power's pre-approval application is made under section 6.71 of the Access Code (i.e. outside the access arrangement review process).

The Structure of the New Facilities Investment Test

21. The new facilities investment test has several elements. These elements and the general structure of the test are discussed in detail at Appendix A of this issues paper.

THE PROPOSED NEW FACILITY

Proposed Substation

22. Western Power's proposed new facility is a 66/11 kV zone substation and associated distribution works, including line and cable work to establish incoming supply to the substation and voltage conversion of the distribution network from

6.6 kV to 11 kV.[4] Further details of the proposed substation are provided in the pre-approval application.

Reasons for the Proposed Substation

23. Western Power indicates that the main drivers for the proposed substation are:

- a shortfall in capacity to meet forecast load growth at Sir Charles Gairdner Hospital as it undergoes major expansion;
- a shortfall in capacity at the University Substation to meet the forecast load growth at the University of Western Australia; and
- a need to upgrade the distribution system in surrounding areas from 6.6 kV to 11 kV to meet the increase in general consumer demand.[5]

24. Western Power also indicates that the substation would need to be upgraded by 2020 even without load growth at the hospital.

Forecast Cost

25. Western Power indicates a forecast capital cost of the proposed substation of \$28.4 million.[6] This cost includes \$25.8 million for the new substation and cable works (transmission works), and \$2.6 million for the distribution voltage conversion (distribution works).

WESTERN POWER'S ASSESSMENT UNDER THE NEW FACILITIES INVESTMENT TEST

Western Power's Submission

26. In applying the new facilities investment test to the proposed sub-station, Western Power has given separate consideration to two limbs of the new facilities investment test:

- the efficiency test under section 6.52(a) of the Access Code; and
- the incremental revenue test and safety and reliability test under section 6.52(b) of the Access Code.

Efficiency Test

27. The efficiency test refers to the test under section 6.52(a) of the Access Code of whether the "new facilities investment does not exceed the amount that would be invested by a service provider efficiently minimising costs".

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4 Pre-approval application, pp. 3, 4.

5 Pre-approval application, p. 3.

6 Pre-approval application, p. 4.

28. Western Power submits that the forecast new facilities investment for the proposed substation meets the efficiency test of section 6.52(a) of the Access Code for reasons that:

- after considering seven alternative options the proposed substation was identified to be the only feasible solution to provide the required capacity to support both load growth due to the hospital expansion and for surrounding areas; and
- the proposed substation was determined by the Authority to meet the requirements to have the application of the regulatory test waived.

29. Western Power submits in its pre-approval application that “if the regulatory test has been satisfied or waived, then the best option has already been determined, having regard to all reasonable options. If an option is the only feasible option, then that option should also be considered to meet the requirements of [section] 6.52(a) of the [Access Code]”.[7]

30. On this basis Western Power has not considered it necessary as part of its pre-approval application, or previous regulatory test waiver submission to consider in further detail, or provide information to establish whether the forecast cost of the proposed substation represents an efficient cost for the works necessary for the substation.

Submissions are invited from interested parties on whether Western Power has adequately established whether the forecast of new facilities investment, for the proposed substation, does not exceed the amount that would be invested by a service provider efficiently minimising costs.

Incremental Revenue Test and Safety and Reliability Test

31. The incremental revenue test refers to the test under section 6.52(b)(i)A of the Access Code of whether the “anticipated incremental revenue for the new facility is expected to at least recover the new facilities investment”.

32. The safety and reliability test is the test under section 6.52(b)(iii) of the Access Code of whether “the new facility is necessary to maintain the safety or reliability of the covered network or its ability to provide contracted covered services”.

33. In assessing the proposed substation against the requirements of the tests under section 6.52(b) of the Code, Western Power has separately considered the transmission works (substation and line work, with a forecast cost of $25.8 million) and distribution works (voltage conversion, with a forecast cost of $2.6 million).

34. In relation to the transmission works, Western Power submits that the upgrade of the existing substation is required by 2020 for it to meet general load growth for customers in surrounding areas. An upgrade in the future, in response to this load growth, would meet the safety and reliability test, as the upgrade would be

[7] Pre-approval application, p. 5.

necessary to maintain the safety and reliability of supply for customers in the vicinity of the substation. Sir Charles Gairdner Hospital, however, requires the upgrade by 2010 to accommodate its expansion works. Western Power submits that it is only the capital cost for the proposed transmission works less a portion allocated to the hospital for bringing forward the works that meets the safety and reliability limb of the new facilities investment test.[8]

35. The value of the transmission works is $25.8 million. Western Power submits that, of this, $13.55 million meets the safety and reliability test under section 6.52(b)(iii) of the Access Code, which is approximately equal to the total value of $25.8 million discounted to reflect construction in 2010 rather than 2020.

36. Western Power further submits that an amount of $2.55 million will be recovered from Sir Charles Garner Hospital as tariff revenue over a 15 year period, and Western Power contends that this amount satisfies the incremental revenue test under section 6.52(b)(i) of the Access Code.

37. In total for the transmission works, Western Power therefore indicates that $16.1 million satisfies the new facilities investment test.

38. In relation to distribution works, Western Power submits that the $2.6 million of works “provides improved reliability and the ability to provide covered services to customers in areas supported by the Medical Centre substation, Nedlands substation and University of Western Australia substation”.[9] Western Power further submits that the existing 6.6 kV network cannot support expected load growth over the next decade for these areas, and that work has commenced to upgrade the Nedlands substation to 11 kV. By upgrading the distribution network to 11 kV, on which the Medical Centre will be connected, load can be transferred between all three substations to support load growth and maintain safety and reliability of supply for customers in these areas.

39. Western Power accordingly submits that the entire amount of proposed investment in the distribution works component of the proposed substation meets the safety and reliability test of section 6.52(b)(iii) of the Access Code.

40. In total, of the total forecast cost for the proposed substation of $28.4 million, Western Power submits that $18.7 meets the new facilities investment test. Western Power has indicated that it proposes to recover the remainder of the forecast cost ($9.7 million) from Sir Charles Gairdner Hospital as a capital contribution.

[8] Pre-approval application, pp. 5, 6.

[9] Pre-approval application, p. 6.

Submissions are invited from interested parties on Western Power's assessment of the forecast cost of the proposed substation under the incremental revenue test and safety and reliability test.

APPENDIX A

The Structure of the New Facilities Investment Test

41. The new facilities investment test has several elements. These elements and the general structure of the test are set out in Figure 1 and described below.

42. The first step in applying the new facilities investment test is defining the "new facility" to which the test is being applied. The Access Code contemplates the test being applied to new facilities investment associated with a discrete new facility. However, for many types of new facility there may be a need to aggregate investment projects and associated new facilities investment for the purpose of applying the new facilities investment test.

43. The second step in applying the new facilities investment test is the determination of the amount of new facilities investment (relating to the particular new facility or aggregate of facilities). This amount is shown as "Value A" in Figure 1.

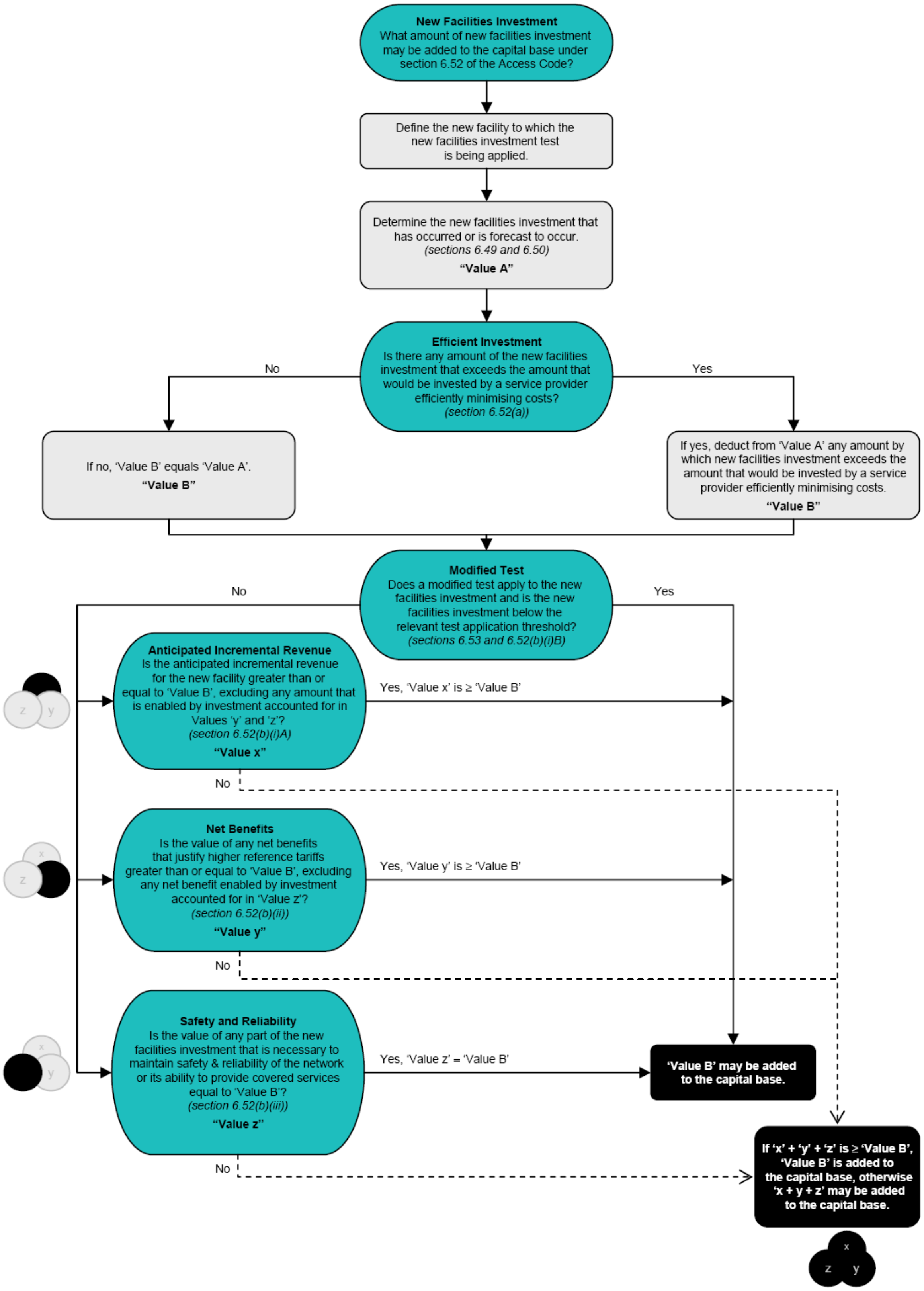
44. Section 6.52(a) of the Access Code requires that any new facilities investment, that is to be added to the capital base, does not exceed the amount that would be invested by a service provider efficiently minimising costs. The third step in the new facilities investment test is therefore, to determine whether the amount of new facilities investment for a facility meets the requirement of section 6.52(a).

45. In order to assess the new facilities investment amount ("Value A") against the efficiency test (i.e. section 6.52(a)), a determination needs to be made of the amount that would be invested by a service provider efficiently minimising costs (efficient investment). Such a determination would need to take into consideration the definitions and guidance provided within the Access Code (for example, the meaning of "efficiently minimising costs"). Once a determination is made of the amount that would be invested by a service provider efficiently minimising costs, the amount of the new facilities investment that exceeds the amount of efficient investment is deducted from "Value A". It is this residual amount that is henceforth considered under the new facilities investment test ("Value B" in Figure 1).

46. If, on the other hand, the investment amount ("Value A") is less than or equal to the amount invested by an efficient service provider, then this amount is the amount that is henceforth considered under the new facilities investment test (i.e. "Value A" becomes "Value B" in Figure 1).

47. Section 6.52(b) of the Access Code sets out three further conditions, one or more of which must be satisfied, in addition to meeting the requirement of section 6.52(a), for the new facilities investment to be added to the capital base.

Figure 1: The structure of the new facilities investment test



48. The first condition (section 6.52(b)(i)) comprises two sub-conditions:

- the anticipated incremental revenue for the new facility is expected to at least recover the new facilities investment (section 6.52(b)(i)A); or
- a modified test applies to the new facilities investment and the amount of the new facilities investment is below the value of the test application threshold (section 6.52(b)(i)B).

49. The modified test referred to in section 6.52(b)(i)B refers to one or more modified tests that may be set out in an access arrangement under section 6.53 of the Access Code and provides a mechanism whereby new facilities investment may pass the new facilities investment test, without assessment against the other conditions of section 6.52(b). Any modified test must have an associated "test application threshold", which will be the maximum value of new facilities investment that may be considered under the modified test.

50. The terms of section 6.52(b)(i) indicate that only one of the two sub-conditions is applied to the consideration of new facilities investment. That is, if a modified test applies to the new facilities investment under section 6.53 and the relevant amount of new facilities investment (either the total amount or the amount passing the test of section 6.52(a)) is below the relevant test application threshold, then the amount of the new facilities investment that satisfies the condition of section 6.52(b)(i) is the relevant amount of new facilities investment.

51. In practical effect, this means that if a modified test applies and the relevant amount of new facilities investment is below the test application threshold, then the relevant amount of new facilities investment satisfies the conditions of 6.52(b) of the Access Code and none of the other conditions of section 6.52(b) need to be considered. As such, a logical construction of the tests in section 6.52(b) is that the first consideration under 6.52(b) is whether the new facilities investment satisfies a modified test, and it is only if a modified test is not satisfied that consideration is given to the other conditions of 6.52(b).

52. If no modified test applies or the amount of new facilities investment is greater than the test application threshold, then consideration is given to the other conditions of section 6.52(b).

53. The first of these other conditions is that the value of anticipated incremental revenue for the new facility is expected to at least recover the cost of the new facilities investment. The value of incremental revenue expected to be generated as a result of the new facility is shown as "Value x" in Figure 1.

54. The second condition of section 6.52(b) is that the new facility provides a net benefit in the covered network over a reasonable period of time that justifies the approval of higher reference tariffs (section 6.52(b)(ii)). The "net benefits" referred to in this section do not necessarily include benefits of all types, but rather a subset of benefits that are considered to justify the approval of higher reference tariffs. The amount of new facilities investment that meets this condition is indicated as "Value y" in Figure 1.

55. The third condition of section 6.52(b) is that the new facility is necessary to maintain the safety or reliability of the covered network, or its ability to provide contracted covered services (section 6.52(b)(iii)). The consideration of this condition would, in the first instance, require an assessment of the purpose of the new facility. If the sole purpose of the new facility is one or other of the purposes within the scope of

section 6.52(b)(iii), then the entire amount of the relevant new facilities investment ("Value B" in Figure 1) would meet the new facilities investment test.

56. It is also possible that a new facility may serve multiple purposes and only part of the purpose is one or other of those within the scope of section 6.52(b)(iii). In this case, it may be necessary to ascribe a value to an amount of new facilities investment that would be required to meet the relevant purposes under section 6.52(b)(iii). The amount of new facilities investment attributed to one or other of the purposes of section 6.52(b)(iii) by either of these two approaches is indicated as "Value z" in Figure 1.

57. A situation relevant to describing the assessment of new facilities investment against the conditions of section 6.52(b) of the Access Code is that where the total relevant amount of new facilities investment ("Value B" in Figure 1) does not fully satisfy any one of the conditions, but may fully or partly satisfy two or more of the conditions. A practical construction of section 6.52(b) in this situation is that the assessment against the conditions of section 6.52(b) is an 'aggregation' process but, so as to avoid double counting, excluding the extent to which the values of "x", "y" and "z" overlap. That is, independent assessments can be made of the amounts of new facilities investment that meet the individual conditions of sections 6.52(b)(i)A, 6.52(b)(ii) and 6.52(b)(iii) of the Access Code, and these amounts can be aggregated, excluding any overlaps, to determine the total amount of new facilities investment that satisfies the conditions of section 6.52(b). For example, this is indicated in Figure 1 as the sum total of the relevant parts of values "x", "y" and "z", where:

- "value z" is an amount that satisfies section 6.52(b)(iii);
- "value y" is an amount that satisfies section 6.52(b)(ii), but excludes any net benefit enabled by investment accounted for in "value z"; and
- "value x" is an amount that satisfies section 6.52(b)(i)A, but excludes any incremental revenue that is enabled by investment accounted for in values "y" and "z".

58. Furthermore, there is no need to assess new facilities investment against the conditions of section 6.52(b) in any particular order, except to first consider whether a modified test is satisfied (as addressed above). The order in which the conditions are addressed could be determined with a view to the primary purpose of the new facility. For example, if the primary purpose of a new facility was to maintain reliability of the network, then consideration could first be given to whether the condition of section 6.52(b)(iii) is satisfied, and consideration given to the other conditions only if the total relevant amount of new facilities investment does not satisfy section 6.52(b)(iii).

Elements of the New Facilities Investment Test

59. For convenience, the components (or elements) of the new facilities investment test are referred to below as the "efficiency test", "incremental revenue test", "net benefits test" and "safety and reliability test". For the new facilities investment test to be satisfied, the new facilities investment must satisfy the efficiency test and one or more of the other tests.

The efficiency test

60. The efficiency test refers to the test under section 6.52(a) of the Access Code of whether the "new facilities investment does not exceed the amount that would be invested by a service provider efficiently minimising costs".

61. A demonstration of the efficiency of new facilities investment could include:

- demonstration of the optimal design and construction of the new facility, taking into account forecast demand for covered services, and economies of scale and scope;
- demonstration of consistency of unit rates of construction with historical unit rates for the covered network and unit rates of similar works in other networks, taking into account trends in productivity improvements and underlying costs; and
- demonstration that the procedures of construction planning, contracting and cost control are consistent with best practice in minimising costs.

The incremental revenue test

62. The incremental revenue test refers to the test under section 6.52(b)(i)A of the Access Code of whether the "anticipated incremental revenue for the new facility is expected to at least recover the new facilities investment".

63. "Anticipated incremental revenue" is defined in the Access Code as:

> "anticipated incremental revenue" for a new facility means:
>
> (a) the present value (calculated at the rate of return over a reasonable period) of the increased income from charges (excluding any capital contributions) reasonably anticipated to arise from the increased sale of covered services on the network to one or more users (where "increased sale of covered services" means sale of covered services which would not have occurred had the new facility not been commissioned),
>
> minus
>
> (b) the present value (calculated at the rate of return over the same period) of the best reasonable forecast of the increase in non-capital costs directly attributable to the increased sale of the covered services (being the covered services referred to in the expression "increased sale of covered services" in paragraph (a) of this definition),
>
> where the "rate of return" is a rate of return determined by the Authority in accordance with the Code objective and in a manner consistent with Chapter 6, which may (but does not have to) be the rate of return most recently approved by the Authority for use in the price control for the covered network under Chapter 6.

64. The incremental revenue test has application to new facilities investment that is undertaken to extend the network or to expand the capacity of a network in order to provide a service to one or more new users.

65. The incremental revenue test may be applied by:

- discounted cash-flow analysis, with the necessary condition for roll-in of new facilities investment into the capital base being that the present value of revenues from current tariffs, that would be paid from time to time by the users of the new facility (with roll-in of the new facilities investment), is equal to or greater than the present value of new facilities investment and additional non-capital costs of the new facility; or

- a discounted weighted average tariff (**DWAT**) analysis, with the necessary condition for roll-in of new facilities investment being that the roll-in of the new facilities investment results in a reduction in the DWAT for the covered network.

66. For either of these forms of analysis, the incremental revenue test should be applied such that:

- the analysis should be undertaken over a period of no longer than the expected economic life of the principal assets of the new facility; and
- the discount rate applied in the analysis may be the rate of return applied in the determination of reference tariffs in either the current access arrangement or proposed revisions to the access arrangement, or may be a rate of return otherwise determined by the Authority to be in accordance with the Code objective and in a manner consistent with Chapter 6 of the Access Code.

The net benefits test

67. The net benefits test is the test under section 6.52(b)(ii) of the Access Code of whether "the new facility provides a net benefit in the covered network over a reasonable period of time that justifies the approval of higher reference tariffs".

68. "Net benefits" is defined in the Access Code as:

> "net benefit" means a net benefit (measured in present value terms to the extent that it is possible to do so) to those who generate, transport and consume electricity in (as the case may be):
>
> (a) the covered network; or
>
> (b) the covered network and any interconnected system.

69. The net benefits test applies to new facilities investment that gives rise to some benefits to all, or a large proportion of, network users, other than through providing economies of scale in the network and reductions in tariffs to existing network users. These latter benefits would be captured under the incremental revenue test of section 6.52(b)(i)A of the Access Code and, as such, would not sensibly also be considered under section 6.52(b)(ii).

70. Application of the net benefits test should take into account the following principles.

- Benefits considered under the net benefits test should be limited to benefits to those parties who produce, transport and consume electricity in the capacities of these parties as producers, transporters or consumers of electricity.
- Benefits considered under the net benefits test should not include any benefits to users that fall within the scope of consideration under the incremental revenue test.
- Benefits considered under the net benefits test should generally accrue to the same parties that would bear the costs of the higher reference tariffs.

- Benefits considered under the net benefits test should not include benefits that are simply transfer payments between producers of electricity, the network owner, network users and/or consumers of electricity; that is, where the benefit to one party is offset by a corresponding and associated cost to another party.
- Any claimed benefit must be explicitly identified with clear demonstration of how the new facility will provide the claimed benefit.
- There should be persuasive evidence that the particular investment would provide the claimed benefit.
- Where reasonably practical, benefits should be quantified using engineering and economic models.

71. For the net benefits test to be satisfied, the present value of the benefits should exceed the present value of the sum of the new facilities investment associated with the new facility, and of the best reasonable forecast of the change in non-capital costs directly attributable to the new facility.

The safety and reliability test

72. The safety and reliability test is the test under section 6.52(b)(iii) of the Access Code of whether "the new facility is necessary to maintain the safety or reliability of the covered network, or its ability to provide contracted covered services".

73. The safety and reliability test would have application to new facilities investment that is undertaken to maintain the network to a particular level of service capability, or to meet particular requirements for safety in operation or reliability of services. The test relates to the purpose of the new facility and the necessity of the new facility to achieve the purpose. There is no suggestion under section 6.52(b)(iii) of an assessment of the benefits and costs of the new facility.

74. The Access Code does not provide any guidance on the meaning of safety or reliability of the covered network. The scope of new facilities that may be considered under the safety and reliability test is therefore a matter of interpretation and could potentially include, for example:

- investment required to meet best-practice standards or statutory requirements for safety in the operation of the network; or
- investment required to achieve or maintain reliability of services or capacity of the network sufficient to meet contractual obligations to users or mandatory requirements.