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30 March 2011

Mr Lyndon Rowe  
Chairman  
Economic Regulation Authority  
Level 6, 197 St Georges Terrace  
Perth WA 6000

Dear Lyndon

**SUBMISSION ON DRAFT DETERMINATION OF NFIT PRE-APPROVAL FOR THE CONNECTION OF COLLGAR WINDFARM**

This submission is in response to the Authority's *Draft Determination on the New Facilities Investment Test Application for the Connection of Collgar Windfarm*.

The purpose of this submission is two-fold:

1. It provides additional information to the Authority in relation to the issues raised in the draft determination; and
2. It revises the amount which Western Power submits satisfies the *new facilities investment test* to \$12.2M.

The submission comprises this covering letter and the attached detailed submission document. Electronic versions are also enclosed, for publication by the Authority. A related spreadsheet is also provided for the Authority's use in its assessment (but is not for publication).

I look forward to receiving the Authority's final determination on this submission.

Yours sincerely,



**SALLY MCMAHON**  
**A/GENERAL MANAGER REGULATION & SUSTAINABILITY**



# Submission to the Economic Regulation Authority

## Response to the Draft Determination on the New Facilities Investment Test Application for the Connection of Collgar Windfarm

**DATE:**

*28 March 2011*

**DOCUMENT PREPARED BY:**

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## 1 Purpose

1. The purpose of this submission is to provide additional information to the Authority that addresses the issues raised in the Authority's *Draft Determination on the New Facilities Investment Test Application for the Connection of Collgar Windfarm*. This response:
  - Explains the decision to revise the A2 cost estimate and provide information about the level of accuracy of the revised estimate;
  - Provides two additional system study reports;
  - Quantifies the risk component of cost in the NFIT application and excludes it;
  - Modifies the incremental revenue parameters and reapplies the Incremental Revenue Test; and
  - Provides further explanation of the advised classification of the PLC Communications Works as connection assets.
2. On the basis of the additional information provided in this submission, Western Power has also revised the amount for which pre-approval is being sought under the New Facilities Investment Test (NFIT) to \$12.2M.

## 2 Background

3. The Authority published the *Draft Determination on the New Facilities Investment Test Application for the Connection of Collgar Windfarm* (the Draft Determination). Submissions were invited on the draft determination with a closing date of 30 March, 2011.<sup>1</sup>

## 3 Key Points from the Draft Determination

4. The draft determination was to not approve Western Power's NFIT application.
5. In its Efficiency Test evaluation the Authority determined that:
  - the proposed works represent an efficient choice of project;
  - the design of the project appears reasonable and the use of assets rated at 330 kV is appropriate; however
  - there is a lack of supporting information for approximately one third of the estimated cost;
  - system studies have not been finalised; and
  - a large risk allowance was included in the submission.
6. In its Incremental Revenue Test evaluation the Authority determined that:
  - the discount rate is incorrect;
  - the Goods and Service Tax was included in the tariff calculation by error; and

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<sup>1</sup> See the Consultation Notice issued by the Authority, 1 March 2011  
[<http://www.erawa.com.au/cproot/9386/2/20110301%20D59141%20Consultation%20-%20NFIT%20for%20Transmission%20Works%20to%20Connect%20Collgar%20Windfarm%20-%20DD.pdf>]

- it is reasonable to calculate incremental revenue over a period longer than 15 years.

## 4 Western Power's response

### 4.1 Additional information supporting the revised cost estimate

7. Western Power prepared an A2 Estimate on 9 December 2008. This was the result of the estimating process as described in Western Power's Cost Estimation Manual.<sup>2</sup> As with any cost estimate, it is based on a range of assumptions which are reflected in the scope of work documents.
8. Subsequent to the preparation of the A2 cost estimate, the scope of works was revised requiring a change to forecast cost. This required that the A2 cost estimation process be repeated.<sup>3</sup>
9. The Western Power Board was notified on 30 October 2009 of both the increased scope of works and revised cost estimate.
10. The only material difference between the A2 cost estimating process and the revised estimating process was that a final revised A2 estimate report reflecting the updated scope of work was not produced. However, given that the revised estimate followed the A2 estimating process, the accuracy of the revised estimate is the same as the original A2 estimate.
11. For information, the following table summarises the movements in cost between the two estimates.

| Delta cost summary                        | Difference (\$) | Contribution to Difference (%) | Impact on cost estimate (%) |
|---|-----------------|--------------------------------|-----------------------------|
| Change due to increased labour hours      | 1,160,546       | 23                             | 9                           |
| Change in materials cost                  | 2,135,782       | 43                             | 16                          |
| Change in miscellaneous expenses          | 36,745          | 1                              | 0                           |
| Change in overhead recovery charge        | 1,001,970*      | 20                             | 8                           |
| Change due to increased unit labour rates | 689,532         | 14                             | 5                           |
| Difference in base cost total             | 5,024,574       | 100                            | 38                          |
| Risk component                            | 2,182,579       |                                |                             |
| Difference as reported                    | 7,207,153       |                                |                             |

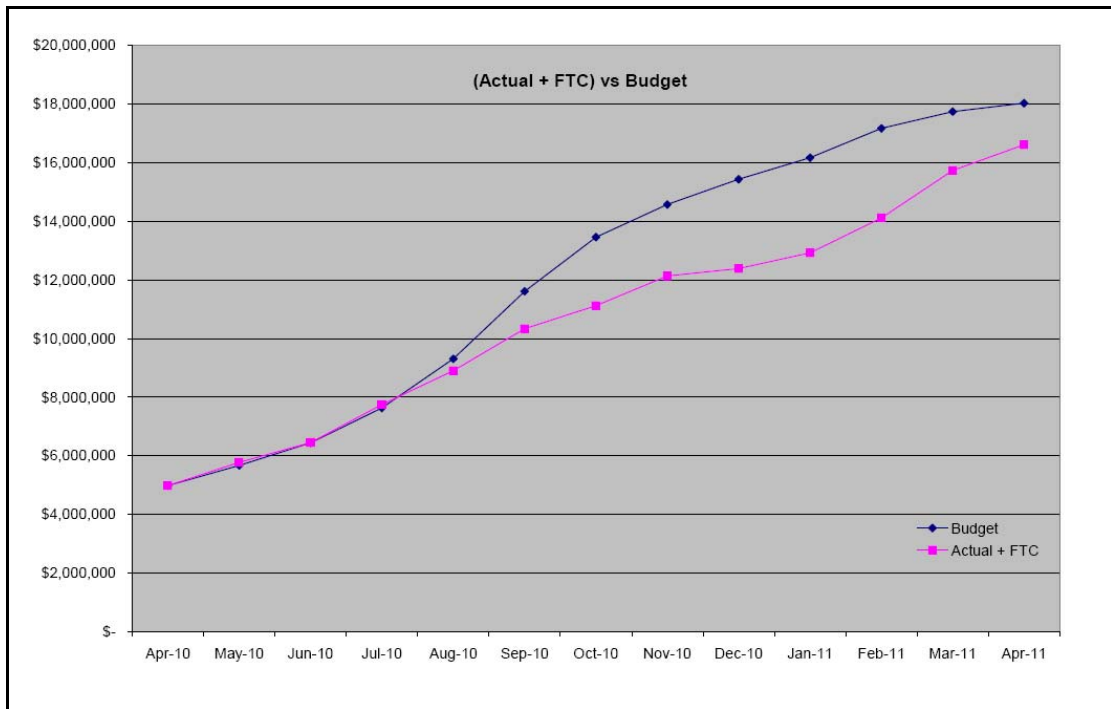
\* See paragraph 13 below

12. The expansion in the scope of works resulted in an increase of \$3.3M (change in materials cost and increased labour hours). This reflects:
  - change from a three-switch to four-switch mesh substation configuration (requested by the customer);
  - change in substation location; and
  - change in steel and concrete works to reflect installation of 330 kV plant rather than the original plan to install 220kV plant (noting that rates for 132kV structures and foundations were inadvertently used in the original estimate).

<sup>2</sup> See DM# 4515944

<sup>3</sup> The output from Success (Western Power's cost estimating software) for both the original A2 estimate and the revised estimate can be found at DM# 5469436 and DM# 6359662, respectively. This demonstrates that the A2 cost estimating process was followed for both the original and the revised estimate.

13. The increase in the overhead recovery charge is a result of two effects, namely, a redetermination of the business overhead recovery rate (from 13% to 15%), and the increase in labour and materials costs (change in scope) to which the overhead recovery rates are applied. (Further details are shown in the worksheet provided separately to the Authority as supporting information.)
14. The change in unit labour rates coincides with the 2009 Certified Agreement (CA) of 7.5% over the full year.<sup>4</sup>
15. For information, the following chart presents a comparison between the revised cost estimate and the actual costs to date. Approximately 79 per cent of the total budget has been spent. The latest forecast shows that the final cost is likely to be at or slightly below the revised cost estimate.



Source: Monthly Project Progress Report, February 2011 [Collgar Terminal Yard], DM# 7224504v10

Notes: "FTC" means "forecast to completion"

Risk and the cost of the earthworks undertaken by Collgar Windfarm Pty Ltd are excluded in the above costs

Practical completion is currently scheduled for mid April 2011

## 4.2 Further information on system studies

16. All of the necessary system studies were completed. One report was provided to the Authority in response to a specific question. The other two are now provided to the Authority for information:

- **Reactive reserve study** – copy previously provided with Western Power's letter dated 20 January 2011 at Attachment 2, document reference DM# 6361350

<sup>4</sup> The 2009 CA reflected a combination of a cost of living increase and changes that can be generically ascribed to productivity improvements. See the Proposed Certified Agreement 2009 – Key Facts, <http://busbar.westernpower.com.au/careerLife/EmploymentRecruitment/ca/Fact%20Sheet.pdf>

- **Steady state system study** – copy attached to this submission, document reference DM# 4745888
- **Dynamic system study** – copy attached to this submission, document reference DM# 6134480.

All of the study report recommendations have been or will have been implemented by the time the wind farm is commissioned.

These reports should demonstrate that there will be no adverse effects on existing customers.

### **4.3 Response to the commentary on the risk allowance**

17. Western Power notes the Authority's advice that cost exclusive of the risk component should be included in the NFIT application.
18. Western Power submits that it would only seek to add the efficient actual capital expenditure associated with the shared assets to the capital base irrespective of any under-spend. Consequently, there is no risk of adding capital expenditure *that is not actually incurred* as the result of efficient delivery of the network augmentation.
19. Western Power also asserts that it is considered appropriate to include risk allowances in assessment of the most efficient project option.

### **4.4 Addressing issues relevant to the Incremental Revenue Test**

*Explanation for the choice of financial parameters*

20. The Draft Determination (paragraph 43) refers to the use of the incorrect discount rate. The discount rate used in Western Power's contributions model, which applies the Incremental Revenue Test, corresponds to the first access arrangement (AA1) period. This was the approved rate prevailing at the time:
  - the contributions model was submitted for approval internally and was approved – August 2009; and
  - of execution of the Interconnection Works Contract (IWC) and the Electricity Transfer Access Contract (ETAC) – 8 December 2009.
21. The IWC, among other things, sets out the contribution required for the works<sup>5</sup>. The ETAC, among other things, sets out the amount of security required to cover the amount of incremental revenue that has been used to offset the value of shared works<sup>6</sup>. The contributions model is used to determine the contribution required under the IWC and the security required for incremental revenue amount covering shared works under the ETAC. Therefore, in order to execute these contracts, it is necessary to have finalised the contributions model using the approved rates at the time of contract execution (which correspond to the AA1 period).
22. The parameters corresponding to the second access arrangement period that are relevant to the Incremental Revenue Test were not approved until 19 January 2010.
23. Other parameters used were:

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<sup>5</sup> A copy of the IWC is recorded under DM# 6704534.

<sup>6</sup> A copy of the ETAC is recorded under DM# 6704562.

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- the operating and maintenance charge of 2.46 per cent, which also corresponds to the AA1 period. The AA2 parameter is 2.1 per cent;
  - the tariffs drawn from the 2009/10 Price List, which was published 18 May 2009. The 2010/11 Price List was published on 14 May 2010 (after the final edit date of the contributions model); and
  - the revised cost estimate, which was produced on 21 August 2009.
24. Based on the evidence presented in paragraphs 20 to 23 above, it is apparent that the parameters used in the contributions model that applies the Incremental Revenue Test were appropriate at the time the ETAC was signed.
25. Western Power submits that it is reasonable to use the access arrangement parameters prevailing at the time that the ETAC is signed. It is recognised by both Western Power and its major customers that these parameters are subject to change across access arrangement periods. Once the project is finalised however, costs and contribution payments for the portion that does not meet NFIT are adjusted to reflect actual costs. In the interests of avoiding confusion, it was decided that the NFIT pre-approval submission should be based on the parameters prevailing at that time.

*Revised NFIT submission*

26. Construction is at an advanced stage for Collgar Terminal and associated works with practical completion currently scheduled for mid April 2011. Consequently the uncertainty in relation to project cost has reduced and, in this case, Western Power is now able to revise the amount it is required to meet the NFIT by removing the risk component.
27. Removing the risk component from the original NFIT submission project cost estimate results in a total capital cost of \$19,670,532.
28. With respect to tariffs, given that there is no published price for the Collgar connection Western Power calculated a price based on the average of the use of system (UOS) price between West Kalgoorlie GTs and Muja Power Station. According to the latest published price list, the Muja PWS price is 2.983 cents per kW per day and West Kalgoorlie GTs is 2.603 cents per day. Converting the average to dollars per kW per annum, the calculated tariff is \$10.19 per kW per year. Collgar's DSOC of 250 MW results in estimated annual revenue of \$2,548,613. Compared to the original calculation, the new tariff results in increased revenue of \$568,031 per annum.
29. Applying the operating and maintenance charge of 2.1 per cent to the estimate of the shared works results in an annual operating and maintenance charge of \$256,828. This reduces the incremental revenue to \$2,291,785 per annum.
30. The table below presents a summary of the changes as a result of updating: the discount rate; operating and maintenance charge; and the tariffs. The capital cost is retained as originally submitted less the risk component. The change column shows the difference between the revised incremental revenue calculations and those of the original NFIT submission.



|   | Revised (\$M) | Change (\$M) |
|---|---------------|--------------|
| Annual incremental revenue                        | 2.5           | 0.6          |
| Less operating and maintenance charge             | 0.3           | -0.1         |
| Net incremental revenue                           | 2.3           | 0.7          |
| (Risk-free) cost of shared works                  | 12.2          | 0.0          |
| Present value of net incremental revenue          | 18.5          | 4.3          |
| Net present value (incremental revenue less cost) | 6.5*          | 6.2          |

\* NPV calculation for the updated incremental revenue estimate is based on: a discount rate of 7.98% (pre-tax real); an assumed energisation date of 30 June 2011; and tariff income received at the end of each subsequent financial year for 15 years.

31. With respect to the period in which incremental revenue is calculated, Western Power submits that a period of nine years is sufficient to offset the \$12.2M risk-free component of the shared works cost. A calculation period longer than 15 years would result in an increase in estimated incremental revenue, but is in excess of the amount required under the Incremental Revenue Test as applied to the Collgar Windfarm project.

32. On the basis of the evidence presented in paragraphs 26-31, Western Power submits that the \$12.2M cost of the shared works (excluding risk) satisfies the Incremental Revenue Test.

*Reallocation of communications assets from connection assets to shared assets*

33. Western Power notes that the Authority advised in paragraph 35 of the Draft Determination that the costs relating to the communication component of the augmentation works should be classified as a shared asset.

34. The communications works for Collgar involves cut-in of the existing PLC (Powerline Carrier) systems between Merredin Terminal (MRT) and Yilgarn (YLN) substations. This is as a result of the 220 kV transmission line cut-in to establish Collgar Terminal (CGT). These works provide new services to exclusively support CGT and the associated wind farm, as follows:

- Line protection signalling for MRT-CGT and CGT-YLN.
- SCADA for monitoring/control of the CGT switchyard.
- Telephone (PAX) services for CGT and the wind farm control room.
- Runback commands (MRT to CGT) for transmission line overload runback scheme for the Collgar Wind Farm.

*(Note for information the Access Code definition for connection assets is: for a connection point, means all of the network assets that are used only in order to provide covered services at the connection point).*

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35. The existing Western Power communications (SCADA and telephones) that currently service Yilgarn and Kalgoorlie will not be altered as part of CGT, although they require connection through CGT once it is established.
36. Western Power advises that no benefit will be realised by existing customers as a result of the PLC Communication Works. Hence, Western Power submits that the PLC Communication Works should remain classified as connection assets.
37. However, in the event that the Authority determines that the PLC Communication Works should be reclassified as shared assets, Western Power:
- Advises that the risk-free component of the communications cost is estimated at \$994,990. This increases the forecast cost of the shared works to \$13.2M.
  - Advises that the forecast incremental revenue is sufficient to fully offset the increased cost of the shared works.
  - Requests that the reclassification be explained so that the reasoning can be reflected in future submissions on customer connection works.

## 5 Conclusion

38. Western Power submits that:
- The revised cost estimate which formed the basis of Western Power's original NFIT submission has been prepared to the same standard as the initial A2 cost estimate. In particular, the revised estimate was developed in accordance with the standards required by Western Power's Board and was an integral component of the advice given to Western Power's Board when it was notified of the change in the scope of works.
  - The change in cost is justified by:
    - the change in the scope of works;
    - change in parameters related to the overhead recovery charge and labour cost that occurred between the date of the original A2 estimate (9 December 2008) and the date of the revised estimate (21 August 2009).
  - All of these changes reflect the minimum efficient cost. Therefore, Western Power submits that the revised cost estimate of \$19.6M (excluding risk) satisfies the Efficiency Test.
  - With respect to system studies, all of the necessary analysis has been carried out. These reports demonstrate that there will be no adverse effects on existing customers associated with connecting Collgar Windfarm to the South West Interconnected System.
  - The inclusion of the risk component in the cost estimate was intended to provide the Authority with all of the information relevant to determining the amount that satisfies the NFIT. At the time of the original NFIT submission, it was not known whether any of the identified risks would be realised. Notwithstanding this point, the risk component has been removed from this revised NFIT application.
  - The PLC Communications Works should remain classified as a connection asset. However, reallocation of the PLC Communication Works to shared assets increases the risk-free forecast cost of the shared works from \$12.2M to \$13.2M.

- The re-evaluation of the Incremental Revenue Test using updated parameters shows that there is sufficient forecast revenue to fully offset the cost of the shared works within a 15 year period. Extension of the period over which incremental revenue is calculated does not change the determination under the Incremental Revenue Test.
- On the basis of the additional evidence provided in this submission, Western Power submits that the revised forecast cost of the shared works which satisfies the NFIT is \$12.2M (if the PLC Communication Works remain classified as connection assets).

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## Appendix 1 – System Studies relevant to the connection of Collgar Windfarm

Steady state system simulation study report [DM# 4745888]

Dynamic system simulation study report [DM# 6134480]

[Note: the appendix contains information that is commercial-in-confidence and has been withheld from the published version]