



Draft project plan

Pricing process improvements

Date: 31 August 2006

1 Document information

1.1 Approvals

David Parker
Minister of Energy
Project Owner

Signature

Date

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Chair
Electricity Commission
Project Sponsor

Signature

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Date

1.2 Version control panel

Date	Version	Author	Comments and/or description of changes
27/07/06	1.0	KS	First draft
01/08/06	1.1	KS	Amended draft following comments from TS & LC
10/08/06	1.2	DG & KS	Draft for WMAG meeting
24/08/06	2.1	KS	Draft for Board
25/8/06	2.2	TS	Suggested changes
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3 Introduction

3.1 Purpose

The purpose of this project is to address participant and Commission concerns about the certainty, accuracy and level of wholesale electricity prices.

3.2 Background

The Electricity Governance Rules 2003 (Rules) contain a detailed process for establishing prices in the wholesale electricity market (spot market). This process allows for situations where incorrect metering information has been provided and/or incorrect SCADA information has been provided and/or there is an infeasibility in the pricing model. All three of these situations give rise to what is called a 'provisional price situation', where the publication of final prices is delayed while the initial problem is resolved.

Although the Rules allow for some situations where problems occur in the pricing process, participants have raised a number of concerns regarding the pricing process since the Rules came into force in March 2004. Specific events over the past 2 ½ years have raised particular concerns among participants, with many of the concerns being shared by the Commission.

Specific events that have raised concerns include the following:

1. An undesirable trading situation (UTS) claim by TrustPower regarding prices in trading period 36 on 24 April 2004 in the Bay of Plenty after a high spring washer occurred as a result of errors in the pricing process. This led to the establishment of the Constraints Issues Group (CIG) and gave rise to the high spring washer pricing task. The objective of the high spring washer pricing task was to develop a process to provide improved certainty that high spring washer prices are based on robust input data.
2. A UTS claim by Norske Skog Tasman relating to events on 29 June 2004 regarding removing reserves from the dispatch objective. This led to the system operator proposing a rule change, which is known as the reserve pricing and dispatch task (also referred to as "RAFs to zero"). This rule change sought to provide certainty for participants and the system operator on how interruptible reserve (IR) should be dispatched and priced both when there is a shortfall of IR and energy offers, and immediately following a contingent event.
3. A subsequent rule breach was alleged leading to debate over whether the inputs into final prices that are based on the 'initial conditions' at the start of each trading period also need to be based on an actual dispatch schedule (a schedule from which dispatch instructions were issued).
4. A UTS claim by Genesis Power regarding prices in trading period 35 on 28 April 2006 as a result of incorrect constraints being modelled in SPD. The system operator self-reported a breach of the Rules following this event. The key issues in this claim are around whether inputs into the pricing process should be corrected in final prices, whether the Commission should be able to change prices after prices go final and whether the provisional pricing period should be extended to allow inputs to be corrected in advance of prices going final.
5. Final prices for trading periods 35 and 36 on 19 June 2006 were delayed as a result of model infeasibilities occurring in provisional prices. Although the infeasibilities were resolved, the final prices

produced by the pricing manager were high (approximately \$9000/MWh around the country in trading period 36). This has raised a variety of concerns, including whether publication of final prices should be delayed, the appropriateness of high prices, the possible introduction of price caps, the possible introduction of mechanism for removing infeasibilities from all prices (including forecast, dispatch and 5-minute prices) and providing better forecasts of final prices.

Another issue resulting from these events is the process for identifying and resolving UTS claims is somewhat unclear, as is the relationship with the UTS provisions in the Electricity Governance Regulations 2003 (Regulations) and the Rules.

In addition to the concerns raised following these events, some participants have made comments that the pricing process as outlined in the Rules is difficult to follow and is unclear. Some participants have therefore suggested that the Rules are redrafted so that they are more easy to understand.

Although the issues raised as a result of the events mentioned above are being considered in various forums, the most recent event on 19 June 2006 raised the profile of the pricing process. Consequently, the Commission Board has requested that the Senior Adviser initiate a project to review the pricing process and the UTS regulations. This project includes deciding on the best methodology for the inputs into final prices (ie initial conditions, dispatch schedule or something else) and a developing a methodology for giving a better indication of the likely final prices when infeasibilities occur in the forecast, dispatch or 5 minute prices.

This scope sets out the parameters for the review.

4 Key stakeholders

Key stakeholders for this project are:

- the Minister of Energy;
- the Electricity Commission;
- participants, including generators, retailers, major users (wholesale market purchasers), consumers (retail market purchasers), service providers (including the system operator, pricing manager and clearing manager) and ancillary service agents; and
- the Ministry for Economic Development.

5 Project objectives

The project objectives are to:

- clarify the inputs into final prices;
- clarify obligations for providing inputs into the pricing process;
- develop a process whereby input errors into the pricing process can be corrected, keeping in mind the trade-offs between certainty and accuracy of wholesale electricity (spot market) prices;

- develop a methodology for providing better forecasts of final prices, both in advance of, and during, a trading period;
- document the process for resolving infeasibilities;
- make the pricing rules more understandable; and
- review the UTS provisions in the Regulations and improve consistency with the pricing process, system security and the rule breach process.

6 Planning drivers

The key planning drivers for this project are mostly historical, as outlined in section 3.2 above. However, without intervention, such events will likely happen again, and it is therefore important that the project is progressed as quickly as possible. Also of relevance to the project plan are:

- the System Operator's Market Systems Project (MSP) – the current timeline schedules implementation of the new base system in mid-2007 with additional new functionality scheduled for the end of the third quarter of 2007. Material changes to core software and/or business processes will be difficult for the System Operator to accommodate until after this time; and
- the Commission's Market Design work – the Commission is considering developments to the Market Design which may impact on the sequencing of this project.

7 Project scope

The project will address the following issues:

Process improvements:

- Produce educational material to improve general understanding of the pricing process;
- Redraft the pricing rules so that they are more easy to understand;
- Review the inputs into the pricing process. One view is that the inputs into the final pricing process should reflect the initial conditions of the relevant trading period. Another view is that the inputs should be based on a dispatchable solution;
- Develop a methodology to either eliminate infeasible prices or to provide an estimate of the likely final prices when infeasibilities occur in forecast, dispatch and 5-minute prices;
- Review the use of forecast/dispatch/provisional/final prices and identifying possible amendments to the Rules to improve the pricing process;
- Consider the appropriate balance between price certainty and price accuracy and, in particular, whether publication of final prices should be delayed in some circumstances;
- Explore how the inputs into final prices could more closely reflect the 'real world', given the limitations and practicalities of modelling;

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- Determine whether 5-minute pricing (either ex-ante or ex-post) should be used; and
- Review the effectiveness of indicative five minute prices.

Market design related improvements

- Consider whether it would be appropriate to use price caps and, if so, what the appropriate level of such price caps would be;
- Review the mechanism by which reserve and energy prices are co-optimised; and
- Consider publishing sensitivities of forecast prices (ie a deviation schedule).

Documenting infeasibilities in prices

- Document the process for resolving infeasibilities (either in the Rules or as a procedures document) both when they appear in provisional prices and when a high spring washer occurs.

UTS provisions

- Clarify what constitutes a UTS (as they are all slightly different) and particularly how regulations 55.1 and 55.2 relate to each other;
- Review linkages between the UTS provisions in the Regulations and the Rules, and in particular that regulation 56.1(a) allows the Board to direct that any trades be closed out or settled at a specified price, while rule 3.27 of section V of part G states that the Board may not order the republication of any final price or final reserve price notwithstanding the fact that a UTS may exist or an error in the process or the information provided may be subsequently discovered;
- Review the practicality of the remedies the Commission can use to address a UTS;
- Establish criteria on which the Commission can base a decision to delay publication of final prices; and
- Set out a process for the Commission to follow after a decision to delay publication of final prices.

The project will exclude the following issues:

- Market design innovations such as zonal pricing, capacity market, day-ahead market and net pooling arrangements;
- Retail pricing and hedging arrangements;
- Loss and constraint rental allocation including financial transmission rights (FTRs); and
- Transmission pricing.

8 Project approach

The project will be project managed by the Senior Adviser Wholesale, who will seek advice as necessary from Commission staff (including the General Counsel, Senior Adviser System Operations and Common Quality, Senior Adviser Reserve Generation and Market Governance) and the Wholesale Market Advisory Group (WMAG). The issues outlined in section 7 above will be addressed in the following order, so that higher priority issues will be resolved first:

1. Process improvements;
2. Market design related improvements;
3. Documenting infeasibilities in prices; and
4. UTS provisions.

A timeline for each of these will be developed so that milestones and deliverables can be established. Due to linkages between the categories, some development work will overlap.

9 Deliverables and milestones

The key deliverables and milestones are summarised in the following table:

Deliverables and milestones	Start date	Completion date
<i>Planning phase</i>	July 2006	
Develop draft scope		10 August 2006
WMAG provides advice on scope		17 August 2006
Development of project plan		31 August 2006
Board approves scope and project plan		12/13 September 2006
<i>Development phase</i>	September 2006	
Process improvements consultation paper published		Late 2006
Market design consultation paper published		Early 2007
Documenting infeasibilities consultation paper published		Mid 2007
UTS consultation paper published		Late 2007
<i>Implementation phase</i>	Early 2007	
Process improvements rule changes recommended to Minister		Mid 2007
Market design rule changes recommended to Minister		Mid to late 2007

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Deliverables and milestones	Start date	Completion date
Documenting infeasibilities rule changes recommended to Minister		Late 2007
UTS regulation and rule changes recommended to Minister		Early 2008

10 Linkages and dependencies

The table below describes the links and dependencies with operations or projects.

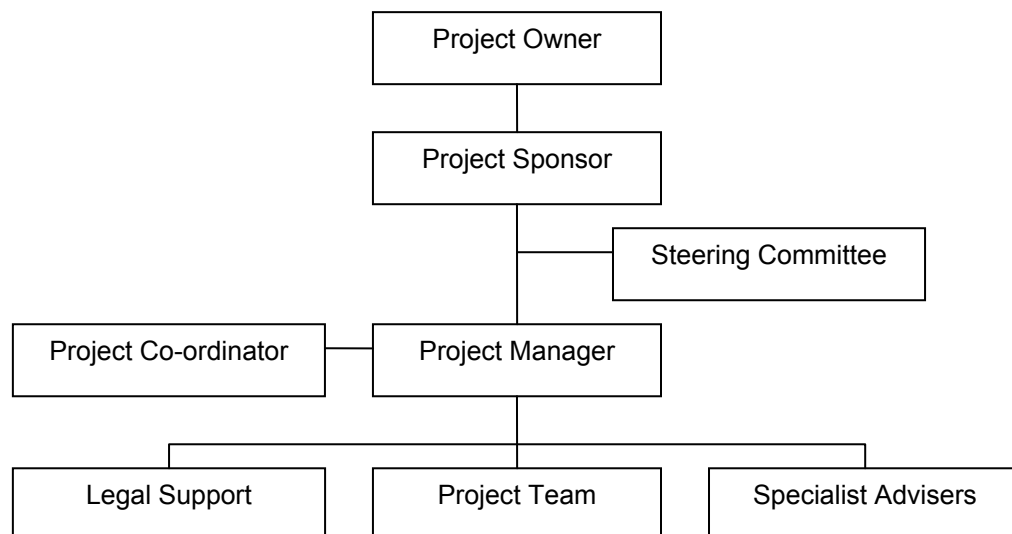
Operation or project	Description	Linkage	Key milestones
High spring washer pricing (HSWP)	Review of how the pricing process deals with high spring washer events. This project started in mid 2004, but technically falls with the scope of the pricing process improvements project.	Some of the issues raised during consultation on the HSWP proposal will be addressed under this project.	Final recommendation to Board targeted for 3/4 October 2006.
Demand-side bidding and forecasting (DSBF)	Review of how demand-side load is considered in the forecasting process, and particularly whether changes should be made to the bidding process.	A major objective of DSBF is to improve the accuracy of forecast prices. Sensitivity of price to shifts in demand may also be made available	Consultation paper to be published early 2007.
RAFs to zero (variable reserves)	Review of how reserve is priced and dispatched when there is insufficient energy and reserve available to meet the dispatch objective.	Dispatching variable reserves (rather than fully suspending the reserves market) allows prices to be established during period when there are insufficient offers	To be implemented early 2008.
Energy and transmission hedge development	Development of a strategy to improve the hedge market.	An improved energy and transmission hedge market would improve the ability for participants to manage spot price related risks	Initiatives proposed by the HMDSG are currently out for consultation. Submissions due on 25 October 2006.
19 June 2006 events	Final prices for trading periods 35 and 36 on 19 June 2006 were delayed as a result of model infeasibilities occurring in provisional prices. Although the infeasibilities were resolved, the final prices produced by the pricing manager were high.	The events of 19 June 2006 are intended to be used as a test case for this project and, as such, an input into the PPI project will be a more detailed analysis of the pricing outcomes for 19 June.	On 18 August 2006, the Commission published a discussion paper about the events of 19 June 2006.

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Operation or project	Description	Linkage	Key milestones
Genesis UTS	A UTS claim by Genesis Power regarding prices in trading period 35 on 28 April 2006 as a result of incorrect constraints being modelled in SPD.	This UTS claim may be used as a test case for this project.	
MSP project	The System Operator's replacement of the market system dispatch and pricing model.	May affect the timing for implementing the outcomes of this project.	New system planned to be operating by late 2007.
System security	System security is catered for in the Rules via the System Operator's PPO obligations (Part C).	Pricing process changes may impact behaviour of market participants and affect the system operator's ability to meet the PPO.	
Rule breach process	The process that is followed when a participant may have failed to meet their obligations under the Electricity Governance Regulations and Rules.	Changes to the pricing process may require amendments to the rule breach process.	
Other linkages to the market design work	The Commission is considering how it will progress the recommendations from the Market Design Report.	Many of the suggested market design initiatives (such as day-ahead market, capacity market, net pool, ex-ante pricing) have significant pricing outcomes.	

11 Roles and responsibilities

The following high-level diagram illustrates how the project will be governed and managed.



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The following table provides a brief overview of the various roles. Roles may change from time to time during the project as the needs change or as more information comes to light.

Role	Who	Responsibilities
Project Owner	Minister of Energy	Has ultimate authority for the project.
Project Sponsor	Roy Hemmingway	Chairs the Steering Committee. Reviews project progress with the Project Manager
Steering Committee	Electricity Commission Board	Provides the overall direction of the project and addresses issues that span organisational boundaries. Reviews the project plan. Identifies and advises the Project Manager of issues that may impact the successful completion of the project. Evaluates any changes to the project scope.
Project Manager	Tim Street	Responsible to the Steering Committee for the day-to-day management of the project. Develops the project plan. Responsible for delivering the project outputs. Has day-to-day control of the project. Ensures all project components are executed effectively to achieve project goals. Allocates and co-ordinates tasks and responsibilities. Reviews plans and progress to identify, as early as possible, issues that might impact the project goals. Implements action to resolve issues and manage risks. Monitors the project and reports progress. Ensures adequate resources are applied. Ensures project is co-ordinated with other related projects, teams and stakeholders. Manage project costs within budget and/or make representation for additional funds.
Project Co-ordinator	[Joe/Karen] M-co	Assists the Project Manager in undertaking the responsibilities outlined above, particularly in the day-to-day management of the project. Works with the Project Team to produce project deliverables
Project Team	[SO rep] [PM rep] [EMS/GO rep]	Works with the Project Co-ordinator to produce project deliverables.
Specialist Advisors	Peter Wakefield Darryl Renner Gari Bickers WMAG	Provide advice to the Project Manager as required.

Role	Who	Responsibilities
Legal Support	David Pay [External legal advisor]	Provides legal advice to the Project Manager as required.

12 Communication plan

The communication plan outlines how consultation will be undertaken and how decision makers will be kept informed of progress.

The table below provides the framework for the communication plan:

Audience	Communication activities	Person responsible
Minister of Energy	Ministerial paper and gazette notice with recommended rule and regulation changes (provided to the Minister via MED).	Project Manager
Ministry of Economic Development (MED)	Ministerial paper and gazette notice with recommended rule and regulation changes – provided to MED for review prior to recommendations being provided to the Board	Project Manager
Electricity Commission Board	Board papers seeking approval to publish consultation papers. Board papers seeking agreement on recommended rule and regulation changes.	Project Manager
Project Team	Regular meetings to be held on an as needed basis.	Project Co-ordinator
Industry	Consultation papers seeking feedback on proposed rule and regulation changes. Industry briefings to be held if required, for example: <ul style="list-style-type: none"> early in the development phase to provide information on the objectives and scope of the project; following publication of consultation papers to assist industry understanding of proposals; following receipt of submissions to facilitate cross submissions; or following publication a draft decision to seek industry feedback. 	Project Manager

13 Resources

This section sets out the resourcing for the project. The budget is \$171,250 to be spread over two financial years.

13.1 People

The following table summarises the people resources for the project:

Role	Source	Time required	Dates required	Total cost
Tim Street Project Manager	Employee Senior Adviser Wholesale	15 hours per month	July 2006 – March 2008	
[Karen/Joe] Project Co-ordinator	Provided under M-co's MSA agreement	35 - 40 hours per month	July 2006 – March 2008	
[SO rep], [PM rep] and [EMS/GO rep] Project Team		10 – 15 hours per month	September 2006 – October 2007	
Peter Wakefield Specialist Advisor	Employee Senior Investigator	2 hours per month	July 2006 – March 2008	
Darryl Renner Specialist Advisor	Employee Senior Adviser System Operations and Common Quality	2 hours per month	July 2006 – March 2008	
Gari Bickers Specialist Advisor	Employee Senior Adviser Reserve Energy	2 hours per month	July 2006 – March 2008	
WMAG Specialist Advisor	Advisory Group	2 hours per month	August 2006 – October 2007	
David Pay Legal Support	Employee General Counsel	5 – 10 hours per month	September 2006 – November 2007	
[External legal adviser]		5 hours per month	September 2006 – November 2007	

13.2 Facilities and equipment

This section includes specific requirements for facilities and equipment and how these requirements will be met.

- Project Team meetings will either be held at the Electricity Commission or at M-co.

14 Risk assessment

The following table sets out the identified high-level risks to the success of this project. The key audience for this analysis is the Project Manager who is responsible for the management and mitigation of risk associated with this project.

Risk #	Description of causes	Description of impact	Level of impact	Likelihood of occurrence	Mitigation strategy
1.	Market development renders parts of project redundant.	Would change the scope of the project.	Medium	Low	Monitor progress of market development initiatives and ensure consistency of approach.
2.	Delays to the System Operator's MSP project.	May delay implementation of recommendations.	High	Medium	Monitor progress of MSP project and provide early indication to System Operator of potential changes to the system.
3.	Project scope not well received.	Lack of industry support for the project.	High	Low	Hold industry briefings to discuss scope and objectives of project.
4.	Consultation papers not well received .	May be difficult to reconcile submitters' views with that of the Project Team.	High	Medium	Hold industry briefings to facilitate understanding of proposal.

15 Appendices

The following items are included as appendices:

- Appendix A - Gantt chart.