

# Energy Trading Policy for Generators

TPP 99-6

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## PREFACE

The *Energy Trading Policy for Generators* is one of a suite of Treasury policy documents aimed at introducing a best practice financial and risk management and accountability framework for NSW owned electricity agencies involved in the generation of electricity.

The purpose of this policy is to establish a high-level policy framework for energy trading to be adopted by NSW electricity generators to manage the inherent price and volume risks associated with their trading activities.

**John Pierce**  
Secretary  
NSW Treasury  
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General inquiries concerning this document should be initially directed to:  
Ziggi Lejins (Tel: 9228 5685, or E-mail: lejinsz@treasury.nsw.gov.au) of NSW Treasury.  
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## 1. INTRODUCTION

The purpose of this policy is to ensure each electricity agency has a comprehensive energy trading policy framework to manage the inherent price and volume risks associated with its energy trading operations.

### 1.1 Objectives

The objective of this policy is to establish a high level policy framework for energy trading to be adopted by NSW electricity agencies so associated risks are appropriately managed, and reported on a consistent basis.

A key reporting objective of agencies should be to provide the Shareholding Minister with a clear understanding of the nature and scope of their energy trading activities, including targeted results and related risk exposure. This should be documented in the Statement of Corporate Intent or Statement of Financial Performance (SCI/SFP) and monitored and reported on a regular basis.

The focus of this policy is on outcomes. It is not appropriate for Treasury as adviser to the Shareholding Minister to prescribe the specific details of an agency's policies or to set operating strategies.

### 1.2 Principles

The policies of electricity agencies should embrace the following principles:

- Boards should set clear risk management objectives;
- All pricing margins must be set on a business case basis so as to achieve appropriate return;
- The energy trading process is to follow appropriate internal controls covering segregation of duties between trading, settling, accounting and performance measurement;
- A contract benchmark should be established which reflect a target contract profile;
- Where possible, all trades are to be marked-to-market on a daily basis; and
- Adoption of scenario analysis and stress testing as quasi capital at risk measures, until a more accurate capital at risk or value at risk measure is possible.

## 2. ENERGY TRADING FRAMEWORK

The Board of each agency will be responsible for approving:

- Contract and bidding strategies which achieve an appropriate return;
- Appropriate performance measures; and
- Procedures and policies which meet generally accepted market standards and best practices for trading in the electricity market.

The energy trading policy or policies of generators should:

- Be documented and approved by the Board;
- Be reviewed at least annually;
- Require clear lines of delegated authority encompassing the full risk management process;
- Ensure that the key information and processing systems are audited to support the requirements of the policy;
- Document the formal approval process for new products and trading activities; and
- Require that operational compliance of the policy be audited on a regular basis.

## 3. OPERATIONAL RISK

There should be a clear and total segregation between the trading, monitoring and settlement functions of energy trading. Where physical or organisational separation is not possible, the generator's policy should require the establishment of procedures to manage any potential conflicts.

The policy should specify the markets the generator is permitted to trade in and all other markets should be explicitly prohibited.

Energy trading is only to be carried out by qualified personnel. Specific Board or Chief Executive delegations of authority are to be implemented which give delegated authority to specific individuals for trading, transaction confirmation, authorisation and authority to sign legal agreements.

The agency's policy should require the maintenance of a list of approved personnel who may enter transactions and a list of approved counterparty personnel.

Each approved person should have a specific delegated limit regarding the tenor for each type of contract or instrument that may be traded.

Each approved person should have a specific delegated limit regarding the value for each type of contract or instrument that may be traded.

The policy should clearly state the process required for the management of policy breaches.

No new product is to be introduced unless the agency has a complete understanding of the risks associated with the product and procedures are in place to record, settle and account for the transaction. The Board should approve a process for the introduction of new products.

#### 4. MARKET RISK

Agencies should establish a policy framework for contracting and bidding which recognises:

- The trade-off between short-term cashflow at risk and long-term business market value at risk; and
- The relationship between spot market and contract outcomes.

An integral component of this framework should be a contract benchmark which represents an agency's target contract profile. The benchmark contract position will be a function of a number of factors, including:

- The risk of generating insufficient revenue to meet cash costs and not earning an appropriate return;
- The risk of having to make cash payments under contracts when the agency is not generating revenue due to plant failure or its failure to be dispatched; and

The risk in the medium to longer term of adverse pool and contract market outcomes through a high levels of contracting, and bidding such contract volume into the pool at short run marginal cost.

Controlled deviations from the fully hedged benchmark should be permitted within a range about the target benchmark.

A measurement methodology should be developed and used for setting and reporting deviations from the benchmark.

For electricity futures trading, limits should be established which restrict the volume under these contracts to a Board approved percentage of the forecast load over an appropriate duration.

#### 5. CREDIT RISK

The credit risk policy should address both settlement and replacement risk and should be based on a recognised ratings system or an objective internal credit assessment process.

For each level of credit rating there should be a limit on the total value of contracts that may be transacted with a counterparty possessing the given rating level. Complementing this should be limits on maximum maturity of contracts undertaken with these counterparties.

In addition to the individual limits, each ratings group should have an aggregate limit on the value of contracts transacted.

The credit policy should recognise the value of credit enhancement instruments such as bank guarantees and should allow for internal credit assessments to be made where it is deemed appropriate or necessary.

In determining the value of contract exposure both current market replacement value and potential movement in market values should be recognised.

The credit requirements of the Treasury Management Policy (TPP 97-1), which relates to dealing in financial instruments, must be considered.

Transactions executed for the sole purpose of earning a premium in exchange for exposing the generator to a credit risk (i.e. credit intermediation) are prohibited.

## **6. LEGAL RISK**

With the exception of properly documented Power Purchase Agreements and similar types of contracts, International Swaps and Derivative Association (ISDA) documentation should be mandatory for all transactions and master agreements should be signed with all counterparties.

Any variations to standard ISDA documentation, including the adoption of new products, should be explicitly approved by appropriate personnel.

Internal and external parties (ie, employees or agents of counterparties) authorised to confirm ISDA transactions should be specifically identified.

## **7. PERMITTED INSTRUMENTS**

The policy should specify the instruments the organisation is permitted to trade in and all other instruments should be explicitly prohibited.

A generator is only permitted to sell an option when it has the capacity to physically hedge its exposure.

Generators are required to demonstrate to their Boards prior to trading in options that:

- Appropriate recording and valuation systems are in place;
- Option risks can be incorporated within the energy trading portfolio; and
- Energy dealers have specific product knowledge.

## **8. PRICING**

Pricing margins are to provide an adequate return on capital employed.

Pricing margins are to be reported to the Board on a regular basis.

## 9. REPORTING

The policy should specify the agency's energy trading reporting framework and the reports required by senior management and the Board. The reports should as a minimum:

- Identify the actual portfolio position and the sensitivity of the portfolio to external factors;
- Identify the level of risk utilised in trading operations and associated return; and
- Report on any breaches of the energy trading policy.

The policy should also specify the information required by the shareholder to be disclosed in the SCI/SFP and reported as part of the quarterly reporting regime. Each agency should disclose the following information in the SCI/SFP and/or the accompanying Business Plan:

- An exposure report in chart form showing the wholesale commitments, contract profile benchmark and forecast production as at 1st July for the duration of all wholesale commitments;
- Details of the agency's forward price curve;
- A valuation of the contract portfolio and the value sensitivity of the portfolio to both a \$1/MWh and a \$10/MWh parallel increase and decrease in the forward price curve as at 1st July; and
- The maximum value exposure to a \$1/MWh parallel shift in the forward price curve the agency's Board has approved.

The following information should be reported in an agency's quarterly report:

- An exposure report in chart form showing the agency's current wholesale commitments, contract profile benchmark and forecast production retail at the end of the quarter for the duration of all wholesale commitments;
- Details of the agency's current forward price curve;
- A valuation of the contract portfolio and the value sensitivity of the portfolio to both a \$1/MWh and a \$10/MWh parallel increase and decrease in the forward price curve as at the end of the quarter; and
- A high level summary of any energy trading policy breaches which occurred in the previous quarter.

## 10. CONTACT PERSON

For further information contact:

Mr Ziggi Lejins

Director Energy Ownership Branch

NSW Treasury

Tel: 9228 5685

## Appendix

### PORTFOLIO VALUATION AND SENSITIVITY ANALYSIS

The portfolios of agencies contain a number of contract types. These include Swaps, Type 1 Vesting contracts, Type 2 Vesting contracts, Futures, Caps, Floors and Collars.

The value of an agency's portfolio is equal to the sum of the values of all contracts from each contract type.

Individual Swap, Type 1 Vesting contracts and Futures should be valued using a mark-to-market methodology.

For each contract this consists of determining the difference between the forward price and the contract price in each half-hour and discounting it using an appropriate discount factor. The value of a contract is equal to the sum of these present value components. Algebraically this can be expressed as:

$$\text{Value} = S (\text{Forward Price} - \text{Contract Price}) * \text{Volume} / \text{Discount Factor}$$

The forward price for each half-hour should correspond to the price in an agency's forward price curve. Agencies which have obligations in other regions in the NEM, should use the forward price curve appropriate to that region to value these contracts.

The discount factor should be based on a zero coupon forward curve which is compounded to the relevant time to maturity (i.e. represents the time value of money).

Options, including embedded options should be valued using standard option valuation techniques.

To determine the sensitivity of the portfolio to a movement in forward spot prices, the respective forward price curves should be changed by the sensitivity amount and the value of the portfolio recalculated. The difference between this value and the value calculated using the agency's forward price curve represents the value sensitivity to a uniform change in the forward price of electricity. This sensitivity analysis should be undertaken for a uniform \$1/MWh increase and decrease and a \$10/MWh increase and decrease in the forward price curve.

For reporting purposes it is proposed that agencies disclose the value and sensitivity of their portfolio in the following form.

	<b>Portfolio Valuation</b>	<b>1/MWh Sensitivity</b>	<b>-\$1/MWh Sensitivity</b>	<b>\$10/MWh Sensitivity</b>	<b>-\$10/MWh Sensitivity</b>
Bilateral Contracts					
Vesting Contracts					
<b>Total Value</b>					