

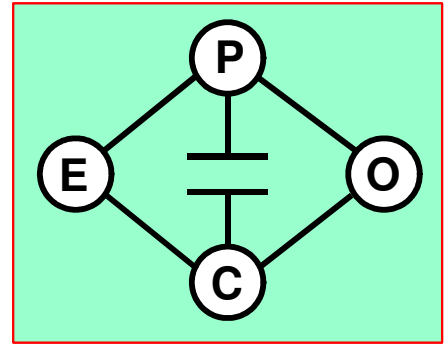
**Submission on**

**Centralized Data Set**

**by**

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## **Executive Summary**

1. The Electricity Commission has a definite role in ensuring the free flow of information in the New Zealand electricity sector.
2. With more information available the electricity market is likely to be more efficient.
3. Publication channels should endeavour to be as democratic as possible and leave open the opportunities for competition in the service sector.

## Introduction

The Electricity Commission is seeking submissions from the electricity industry on its proposals to create and maintain a Centralized Data Set for the use of market participants, planners, and consultants. As modellers we support the provision of such a set of data for several reasons:

1. The availability of data will encourage market participants and consultants to create many competing models, possibly under different assumptions. This will raise the bar for model performance.
2. Models based on a common data set will be easily comparable allowing contestability of advice, as well as a focus on modelling assumptions (rather than data inputs) as a basis for disagreement.
3. The free availability of offers, loads and network configurations will provide some transparency in historical market participant behaviour. This will help allay any suspicions amongst participants of any excessive exercise of market power.
4. Modelling the past behaviour of the electricity market accurately is a necessary prerequisite to forecasting its future behaviour under varying scenarios. Such forecasts will be necessary in evaluating the costs and benefits of grid and generation investments.

## Answers to specific questions

1. Is there a role for the Electricity Commission in seeking to create and maintain a Centralized Data Set?

Yes.

2. Does the proposed CDS meet the needs of investors?

The data provided are necessary for investors to build models of the wholesale electricity market, but they will not be sufficient. Extra data will be needed to fully model and understand the operation of the wholesale electricity market.

3. Are there additional data sets that are not included and should they be published?

We congratulate the Commission and their consultants for compiling such a comprehensive list of data to be included in the CDS. Some of these data (e.g. those pertaining to specific dynamic characteristics of the AC network) will be used by only a few modelling experts. Nevertheless it is important that they are available so that these people can have free and ready access. There are several sets of data that are not provided in the proposed data set. These are:

### Information on grid security constraints

The Grid Operator adds group security constraints on the power flows to the SPD model to ensure an n-1 security standard. If these are not already included in the TPIX information, then they will be required to understand the benefits of changing transmission constraints. A historical record of these constraints will allow public

scrutiny of their application, as well as encouraging innovative alternative security methodologies.

### **Information on voltage support constraints**

The Grid Operator may add constraints on the power flows to the SPD model to ensure voltage support. See the remarks on security constraints.

### **Generator/retailer ownership details**

The consultant's report has issued a list of generator data to be made public. Though this is available in company annual reports it would be worth including a list of all generating stations and their owners in the CDS. Similarly, a list of all retail companies, their owners and their load profiles should be available.

### **Historical contract positions and retail loads of participants**

One significant piece of information relevant to the operation of electricity markets is the hedge contract and retail load positions of the participants. Investments in plant and transmission capacity will be driven primarily by future contract prices, so understanding these and their relationship to the wholesale spot price is an important ingredient in making good investment decisions.

For example, it is often claimed that contract prices should equal expected spot prices, otherwise arbitrageurs would pocket the difference, so modelling using spot prices or their time average will give appropriate results. On the other hand, some authors have observed that contracts often trade for a premium over the average spot price, and have attempted to explain this using risk aversion, or asymmetry arguments. It is important to model and understand this relationship to enable the consequences of investment decisions to be modelled correctly.

A second more delicate argument for the publication of contract positions is that it allows a greater scrutiny of market participants' behaviour. It is well known that heavily contracted generators with market power have a decreased incentive to exercise this. Diagnosing the undue exercise of market power from a generator's historical offers is therefore very difficult in the absence of knowledge of their contract positions, as unexplained changes in offer behaviour can be interpreted as alterations in contract position. If these positions (and the retail bases of vertically integrated generators) were in the public domain then the offer strategies followed by generators would become more transparent.

Full disclosure of contract positions is likely to be precluded by commercial sensitivities, since some of the contracts involved could still be current at the time of publication. This problem could

probably be overcome by publishing only aggregate net positions at particular times and places. For example, the CDS might reveal that during trading period TT on a date DD, market participant PP held contracts for differences equivalent in aggregate to a net long position of XX megawatts at grid exit point GG – but not the individual sizes, counterparties, or expiry dates of those contracts.

4. Should any data sets not be published?

No

5. Is the time frame of releasing data appropriate?

Yes

6. What formats would be most useful for release of the data?

We are concerned about the proposals to release much of the information in DigSilent format. This will require that modellers who wish to use these data must use software to convert files of this format to a familiar one (e.g. csv files). It is not acceptable to require modellers to purchase a DigSilent licence to obtain access to these data. This is likely to restrict access to only a few parties.

7. Are the publication channels of FTP and DVD appropriate?

Yes. The Matlab and FORTRAN browsing engines proposed by the Commission are useful tools to include with the data set. Stochastic Optimization Limited has a java engine for browsing historical offers that have been archived since January 2001. Details can be found on

<http://www.sol.co.nz/software/bidquery/index.html>

and downloads at

<http://www.sol.co.nz/downloads/bidquery.jar>