

## APPENDIX C - OUTPUT DATA FROM THE MARKET CLEARING ENGINE

### C.1 INTRODUCTION

C.1.1 The *market clearing engine* shall produce, at minimum, the outputs described in sections C.2 to C.4 of this Appendix.

### C.2 REGISTERED FACILITY AND INTERTIE SPECIFIC QUANTITIES

C.2.1 The *market clearing engine* shall produce, using the mathematical model in Appendix 6D, end-of-*dispatch period* target values for the following *physical services* for each *registered facility* that has associated with it a valid *offer* to provide or a valid *bid* to withdraw that *physical service*:

C.2.1.1 the amount of *energy* scheduled to be injected onto or withdrawn through the *transmission system*, expressed in MW;

C.2.1.2 the amount of *reserve*, for each *reserve class*, scheduled to be provided, expressed in MW; and

C.2.1.3 the amount of *regulation* scheduled to be provided, expressed in MW.

C.2.2 The *market clearing engine* shall produce, using the mathematical model in Appendix 6D, end-of-*dispatch period* target values for the *energy* to be injected onto, or withdrawn from, the *transmission system* in each *dispatch period* on each *intertie*, expressed in MW.

### C.3 PRICES

C.3.1 The *market clearing engine* shall produce, using the mathematical model in Appendix 6D, the following prices for each *dispatch period*:

C.3.1.1 the *market energy price* or *MEP* for each *market network node*, expressed in \$/MWh;

C.3.1.2 the *uniform Singapore energy price* or *USEP*, expressed in \$/MWh;

C.3.1.3 the price of *reserve* for each *reserve class*, expressed in \$/MWh;

- C.3.1.4 the *market reserve price* or *MRP* for each *reserve provider group*, expressed in \$/MWh;
- C.3.1.5 *market regulation price* or *MFP*, expressed in \$/MWh; and
- C.3.1.6 the *load curtailment price* or *LCP*, expressed in \$/MWh.

#### **C.4 ADDITIONAL DATA**

- C.4.1 The *market clearing engine* shall, at a minimum, produce the following information for each *dispatch period*:
  - C.4.1.1 the total *load* scheduled to be supplied at each *dispatch network node* and in aggregate, expressed in MW;
  - C.4.1.2 the aggregate of the total generation scheduled at each *generation registered facility* and total *import* scheduled for each *import registered facility*, expressed in MW;
  - C.4.1.2A the total *energy* scheduled to be withdrawn for each *restricted energy bid* associated with an *LRF with REB*, expressed in MW;
  - C.4.1.2B the *load curtailment* in respect of each *LRF with REB*, expressed in MW;
  - C.4.1.2C the total *load curtailment* in respect of all *LRFs with REB*, expressed in MW;
  - C.4.1.2D the total transmission losses in the system, expressed in MW;
  - C.4.1.3 the extent of any shortfall in *energy*, by *dispatch network node* and in aggregate, expressed in MW;
  - C.4.1.4 the extent of any surplus in *energy*, by *dispatch network node* and in aggregate, expressed in MW;
  - C.4.1.4A the total *reserve* requirement by *reserve class*, expressed in MW;
  - C.4.1.5 total *reserve* scheduled to supply each *reserve class*, from each *reserve provider group* and in aggregate, expressed in MW;
  - C.4.1.6 the extent of any shortfall in *reserve*, by *reserve class*, expressed in MW;
  - C.4.1.6A the total *regulation* requirement, expressed in MW;
  - C.4.1.7 total *regulation* scheduled, expressed in MW;

- C.4.1.8 the extent of any shortfall in *regulation*, expressed in MW;
- C.4.1.9 predicted power flows and *energy losses on dispatch network lines*, expressed in MW;
- C.4.1.10 a list of *security constraints* and *generation fixing constraints* applied;
- C.4.1.11 details of the extent of any constraint violations;
- C.4.1.12 the value, in dollars, of the objective function specified in Appendix 6D; and
- C.4.1.13 estimated hourly *energy uplift rebate*, determined in accordance with section D.25.1.13 of Appendix 6D, expressed in \$/MWh.