

Transpower NZ Ltd System Operator Industry Seminar 13/15 September 2006

Pricing of the 17:30 Trading Period 19th June 2006

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Description of Schedules

System Operator Industry Seminar

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13/15 September 2006

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Schedules Produced

Six schedules produced by the Scheduling, Pricing & Dispatch (SPD) software

1. Pre-Dispatch Schedule (PDS)
2. Security Dispatch Schedule (SDS)
3. Schedule of Dispatch Prices and Quantities (SDPQ)
4. Dispatch Schedule (a.k.a. Real Time Dispatch RTD)
5. Real Time Pricing (RTP)
6. Provision/Final Pricing (FP)



Pre-Dispatch Schedule (PDS)

PDS: is the 'ideal' supply and demand schedule

- demand bids supplied by purchasers; the price they will pay for demand
- generation and reserve offers: the prices at which suppliers are willing to provide generation and/or reserve



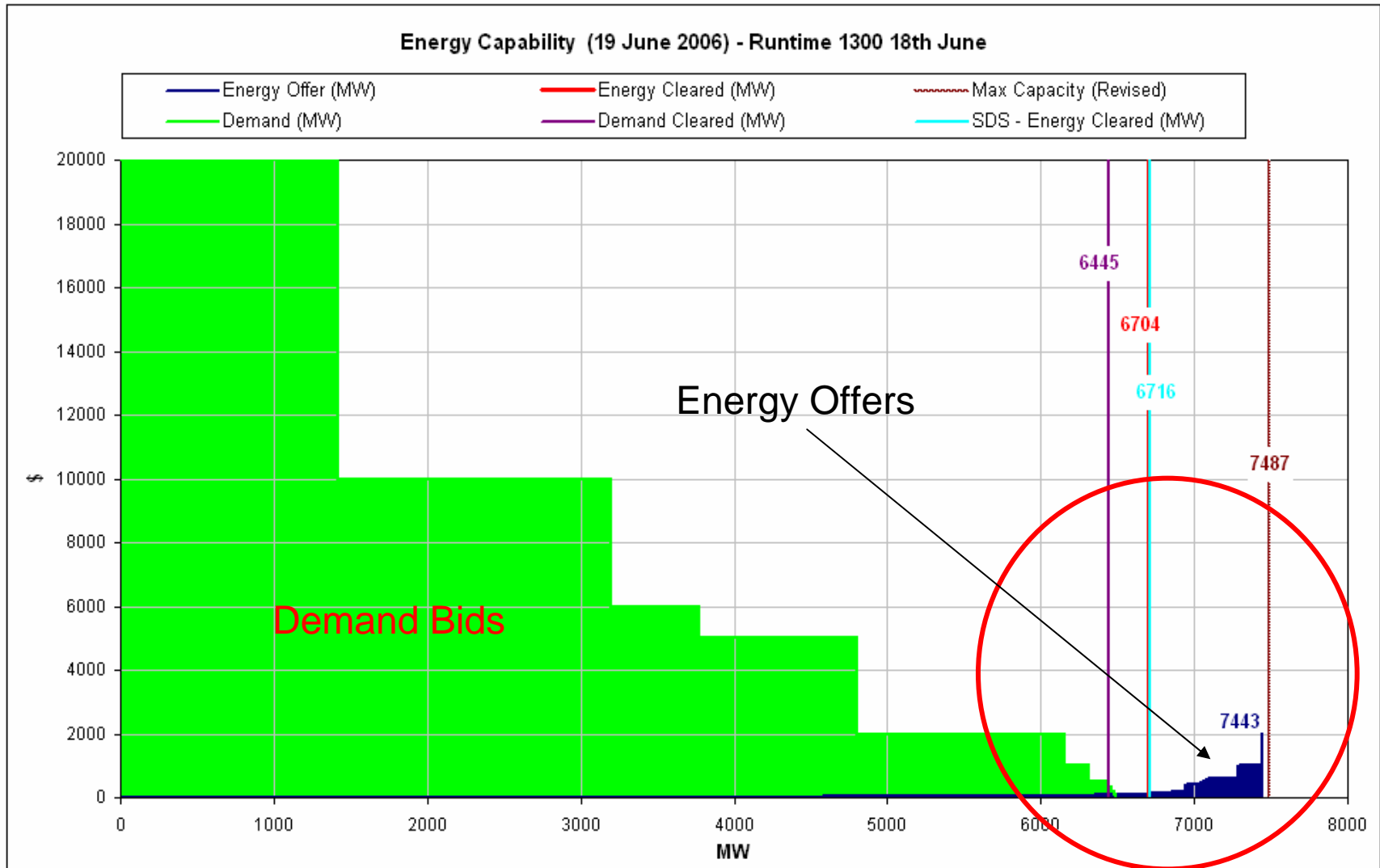
Security Dispatch Schedule (SDS)

SDS: an internal SO schedule used to assess security

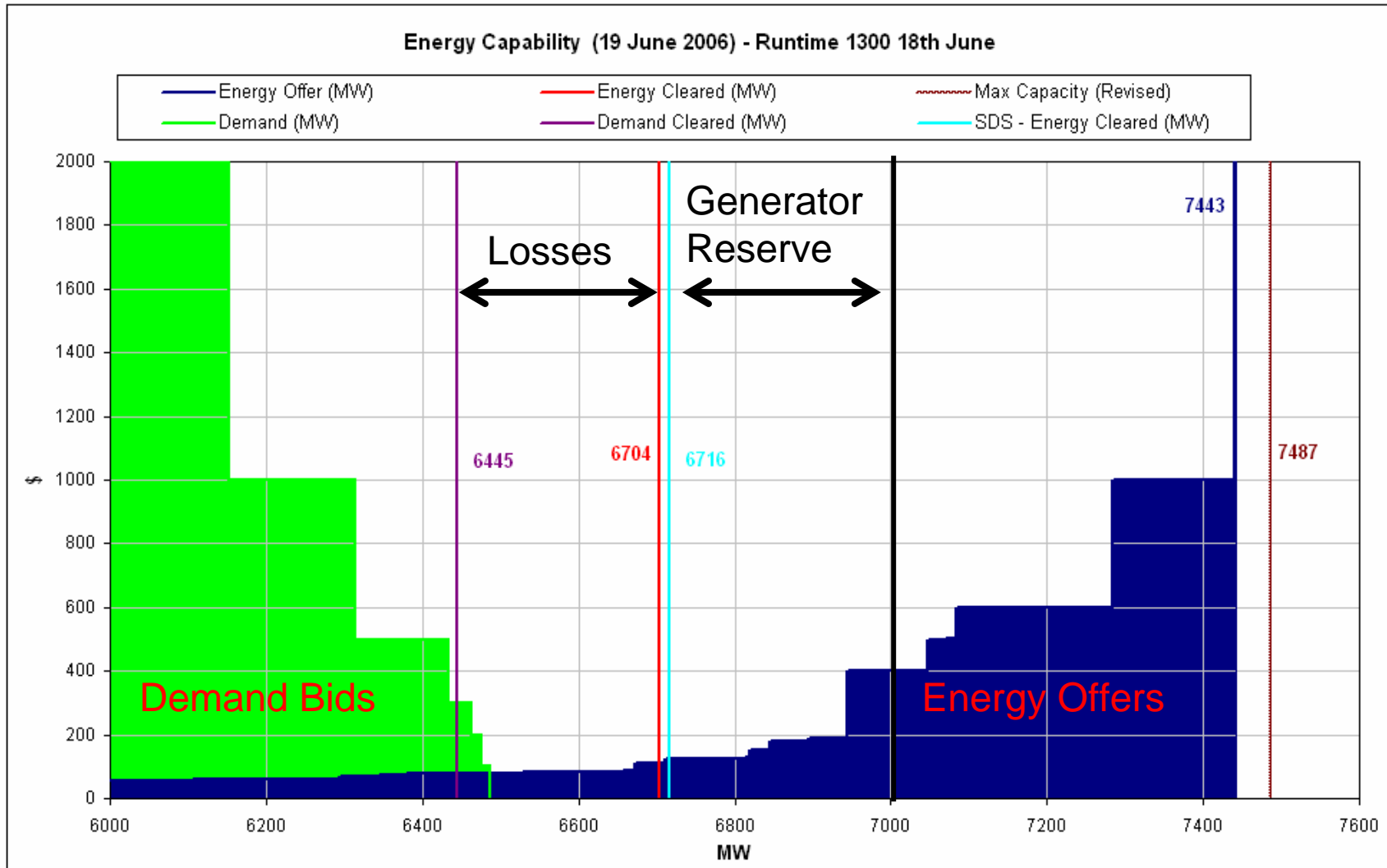
- demand based on:
 - area load forecast from Transpower Energy Management System (EMS)
 - linear regression model
 - updates half hourly based on real time data
- total demand quantity bid provided by 10 large industrials (no price attached)
- generation and reserve offers: prices at which suppliers are willing to provide generation and/or reserve
- SDS exactly the same as the Schedule of Dispatch Prices and Quantities (SDPQ). Solving for different time periods.



18 June 2006 13:00 PDS/SDS

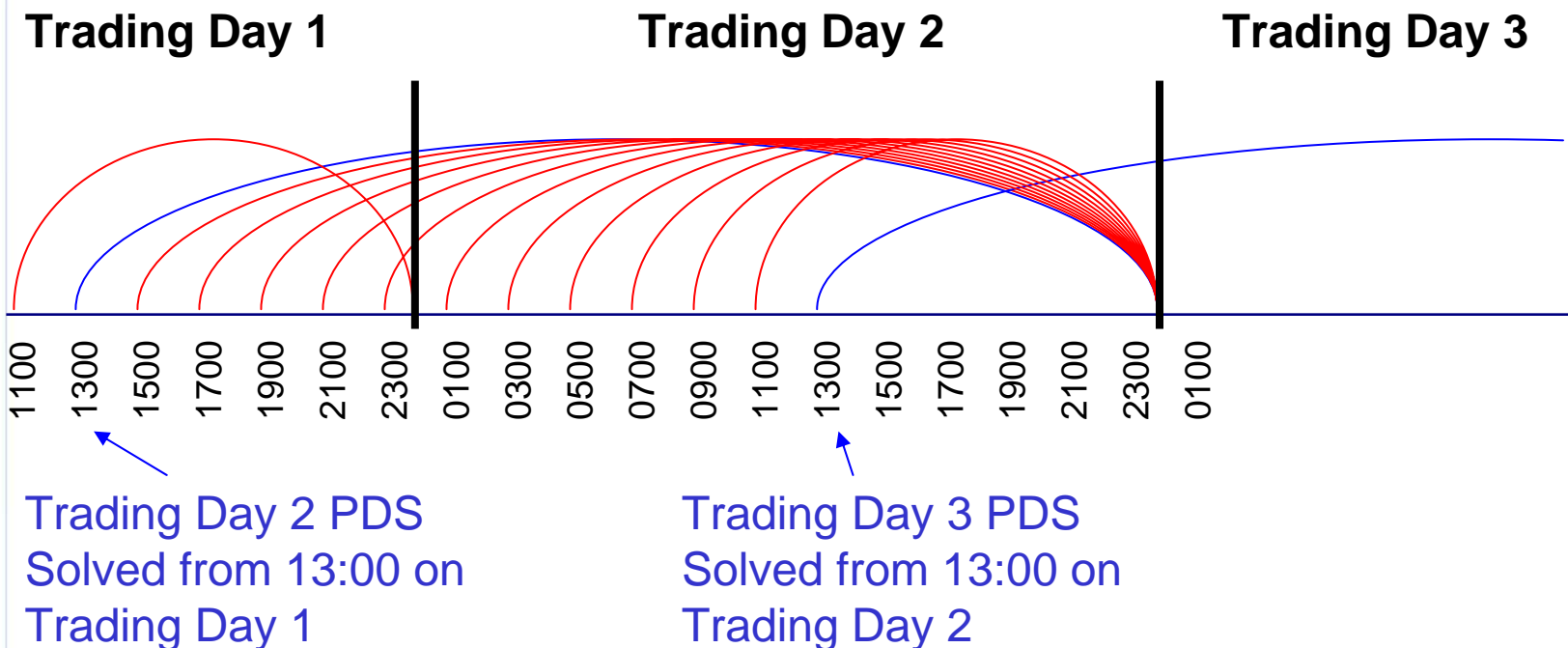


18 June 2006 13:00 PDS/SDS



Time Line SPD Outputs – PDS/SDS

- runs every 2 hours
- provides solution for every trading period during current scheduling period



Dispatch Schedule (RTD)

RTD: schedule uses 5-minute load forecast provided by the coordinator to optimally dispatch system every 5-minutes

- demand based on:
 - actual bus load figures from SCADA/EMS for previous 5-minutes
 - the EMS LF area forecast
 - coordinator forecast at the island level
- generation and reserve offers: the prices at which suppliers are willing to provide generation and/or reserve



Real Time Pricing (RTP)

RTP: schedule of five-minute prices based on system as it existed for the preceding five-minute period

- demand is based on actual load figures from SCADA/EMS for previous 5-minutes
- generation and reserve offers are prices at which suppliers are willing to provide generation and/or reserve



Provisional and Final Pricing (FP)

FP: schedule of thirty-minute prices based on system as it existed for each trading period:

- demand based on actual load figures (from MV90) for each trading period
- generation and reserve offers: prices at which suppliers are willing to provide generation and/or reserve

FP is what should have ideally happened:

- given actual load, but
- ignoring actual energy produced (other than initial conditions)



Summary

- SDS & SDPQ – *Average MWh* forecast
 - Deficit CVP's possible
- PDS – *Average MWh* load bids
 - Deficit CVP's less likely, as bids may not be cleared
- RTD – *Average 5-minute* forecast
 - Deficit CVP's possible
- RTP *Average 5-minute* actual
 - Deficit CVP's possible
- FP – *Average Actual MWh*
 - Deficit CVP's possible

