

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

## Pricing of the 17:30 Trading Period 19<sup>th</sup> June 2006

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TRANSPOWER NZ LTD

24-7  
instant delivery



# Schedules Comparison and the Standby Residual Check Notices

System Operator Industry Seminar  
Derrick Westenra  
Market Services Manager  
13/15 September 2006

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SYSTEM OPERATOR  
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# Contents

1. Standby Residual Check and 18 June 13:47 SRC notice
2. Schedule comparisons to Final Pricing
3. Offer changes from 18 June 13:00 through to 19 June 17:29
4. Actual Generation dispatched



# SRC Calculations

To determine whether enough:

- generation and reserves offers available after taking off:
  - largest MWMAX offer (assumes largest risk has occurred)
  - frequency keeping bands
  - and including HVDC constraints
- may be short of energy/reserve post event
- demand shedding post event if not enough energy



# Why is a second risk considered for reserves?

System Operator has the requirement to get the system back to normal state within 30 minutes following an event....

.....provided sufficient assets are offered by participants



# **SRC notices issued for 17:30 period on 19<sup>th</sup> June 2006**

- Three notices issued:

notice **1** issued at 13:37 on 18<sup>th</sup> June 2006

notice **2** issued at 03:05 on 19<sup>th</sup> June 2006

notice **3** issued at 14:47 on 19<sup>th</sup> June 2006



# SRC notice 1 for 17:30 period on 19<sup>th</sup> June 2006



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Telephone : 0800 488 500

Facsimile : 07 843 7176

To: CAN Energy Traders

Date: 18 Jun 2006, 13:36

From: System Operator

## Standby Reserve (CAN) for Insufficient dispatch proposals on 19-Jun-2006 from 17:30 to 18:30

The System Operator advises participants that there are insufficient standby reserves available for the following trading periods:

Following a contingent event:

- There may be insufficient generation reserve available for the System Operator to re-dispatch the system to a secure state (i.e. manage a subsequent contingent event).
- Demand management may be required

Market Day	Time	Period	North Island	South Island	New Zealand
19-Jun-2006	17:30	36	63.006		5.757
19-Jun-2006	18:00	37	96.723		29.044
19-Jun-2006	18:30	38	50.636		

This situation can be alleviated by participants revising their demand and generation offers for those trading periods.

A revision of this notice will be issued if there is any change to the situation advised above.

- demand management may be required if short of energy offers following a CE
- SPD may have infeasible solutions for energy and/or reserve following a CE if short of capacity

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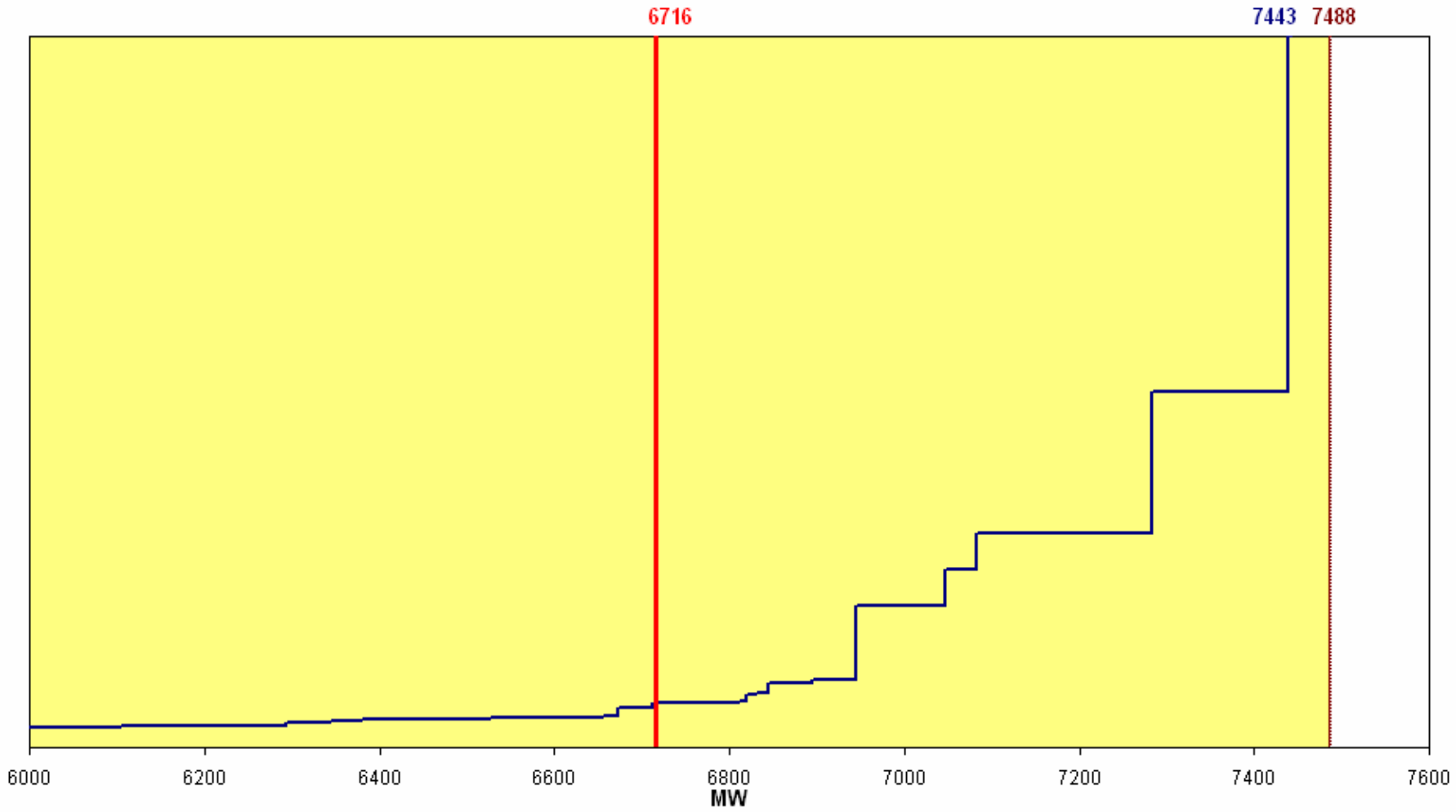
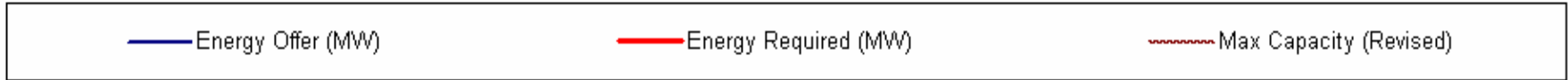
Transpower New Zealand Ltd • The National Grid

# Things to note about SRC

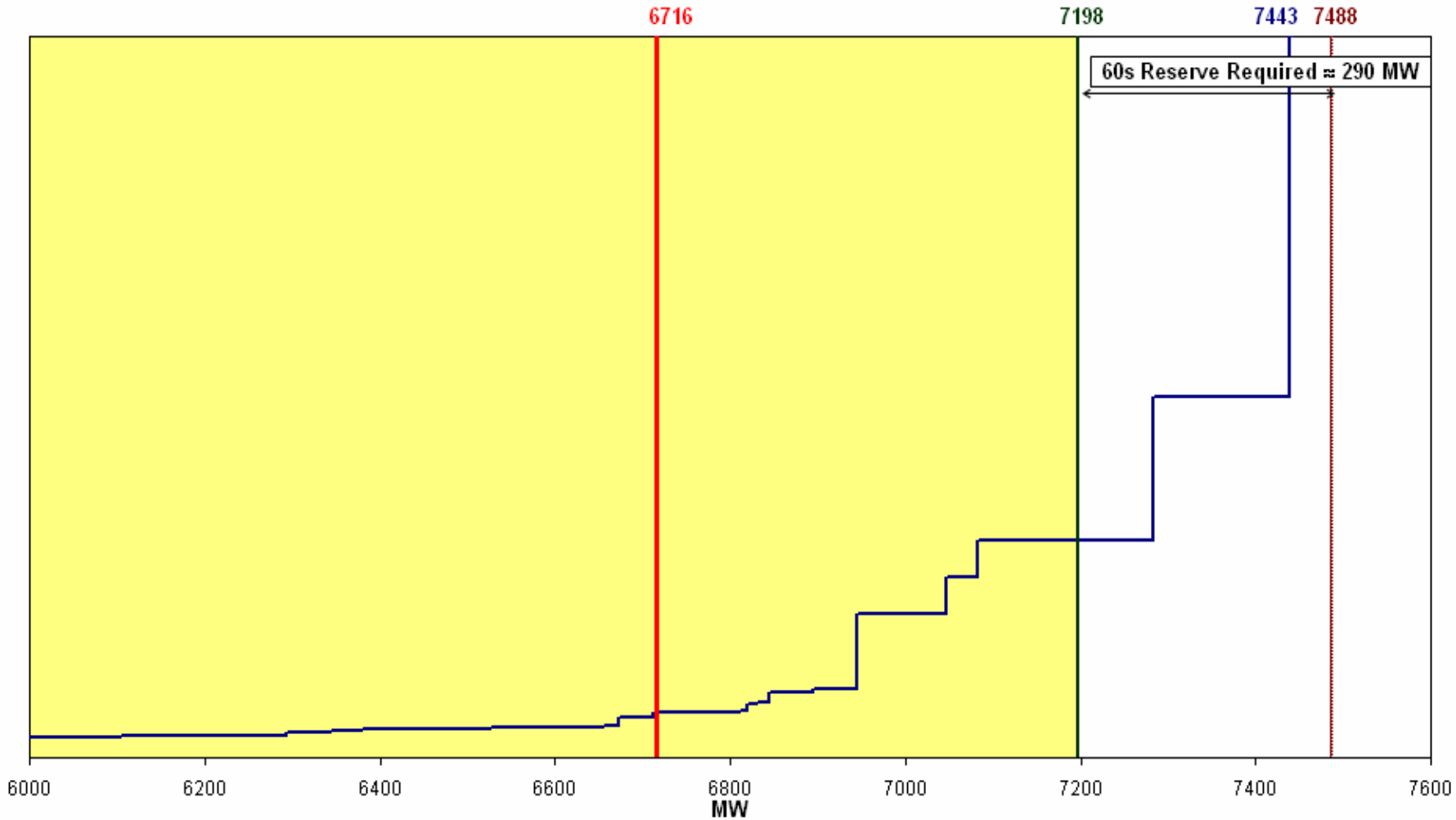
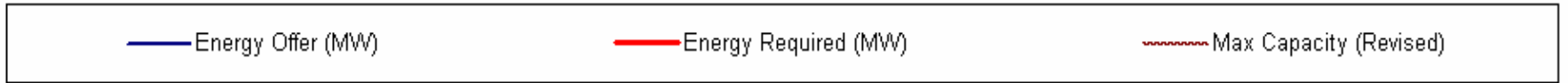
- SRC a simple set of calculations derived from SPD solutions
- does not consider transmission constraints that may affect generation
- HVDC only transmission event included in calculations



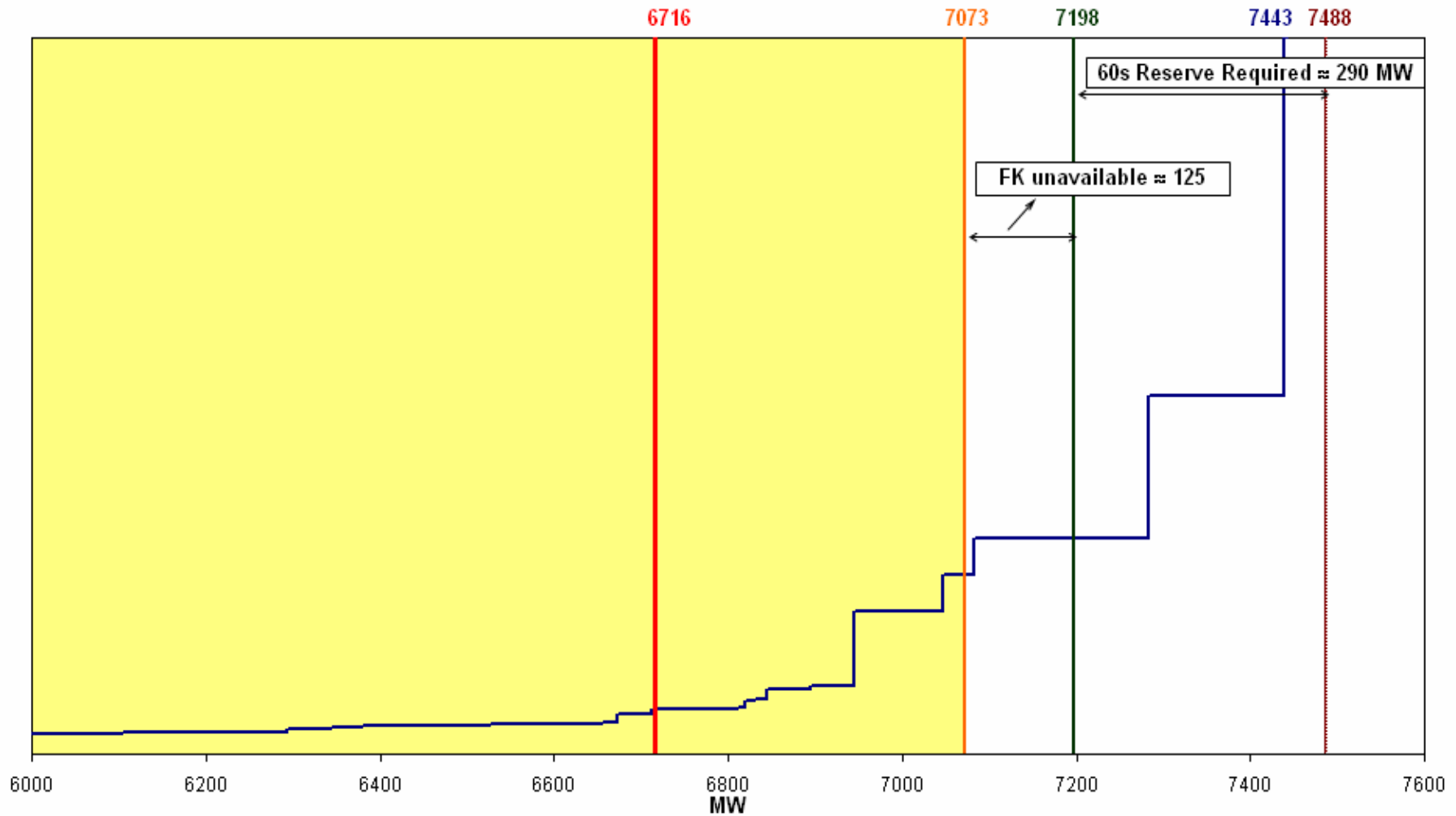
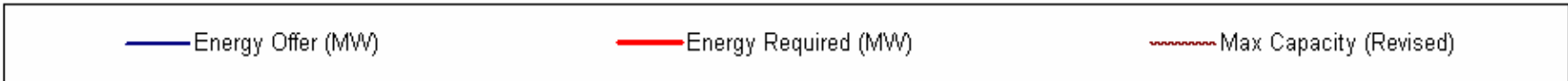
# Energy Capability with Security Concerns (19 June 2006)



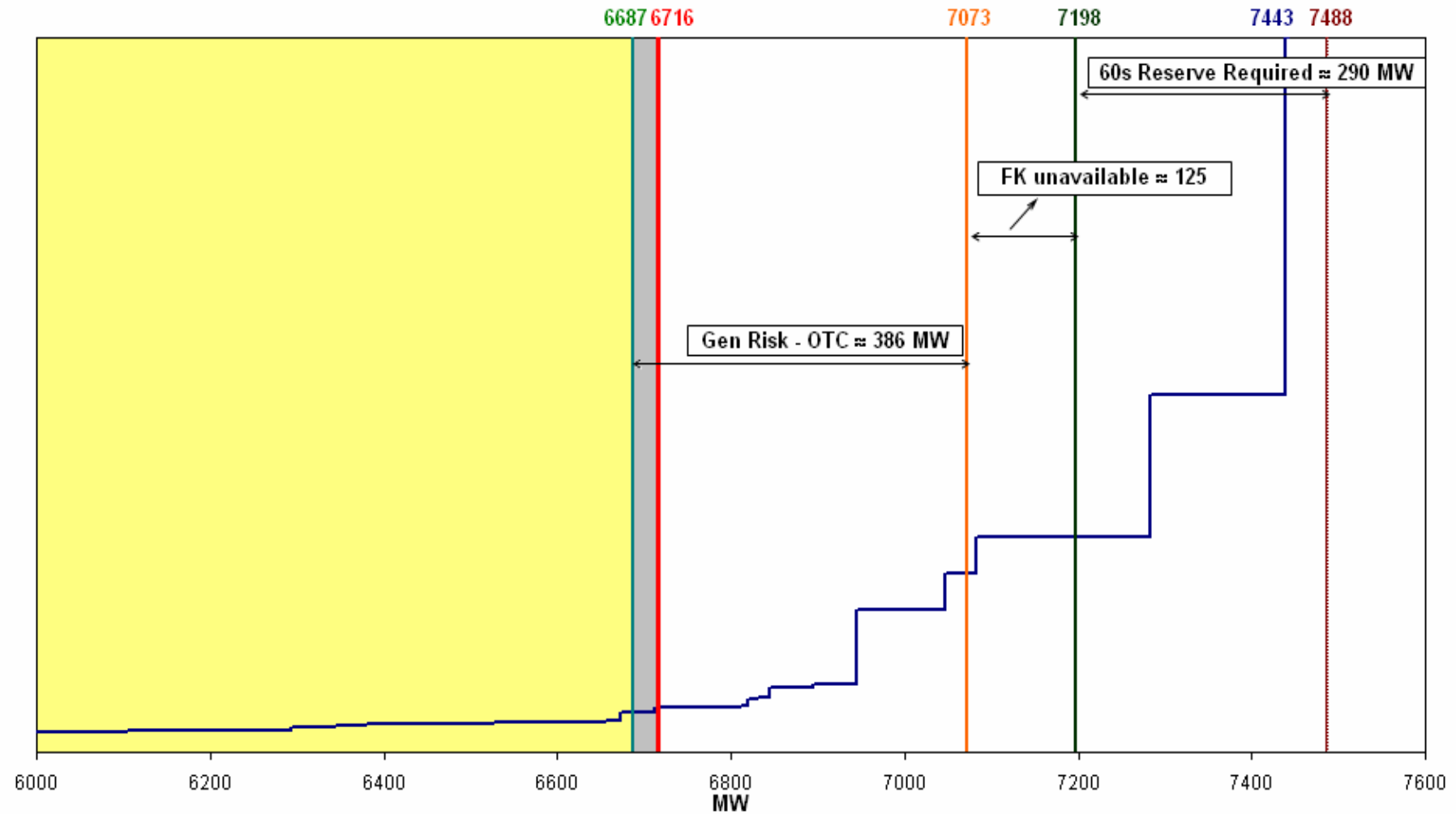
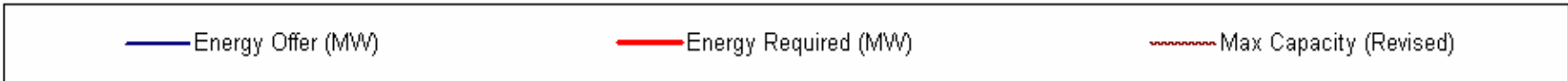
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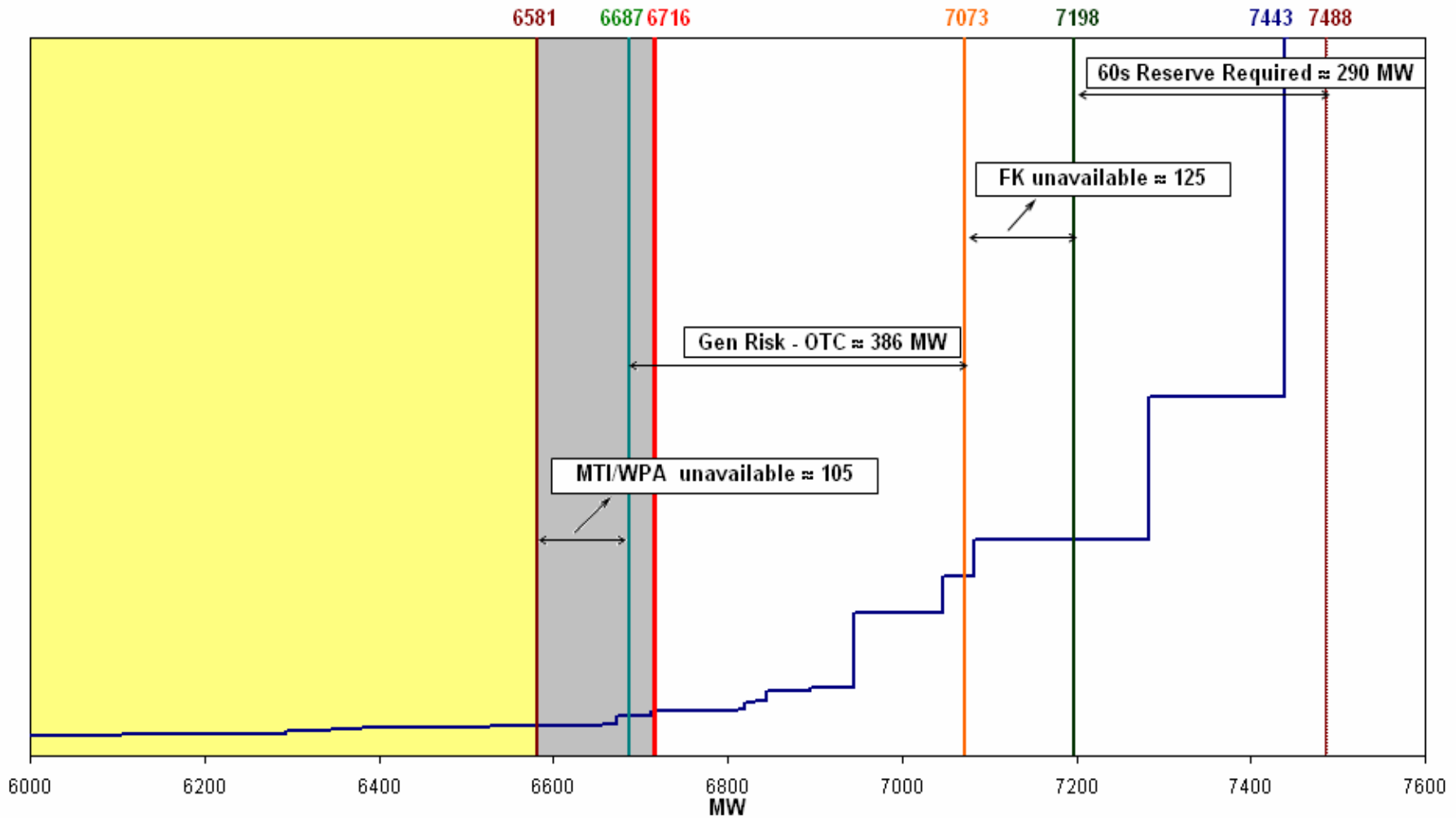
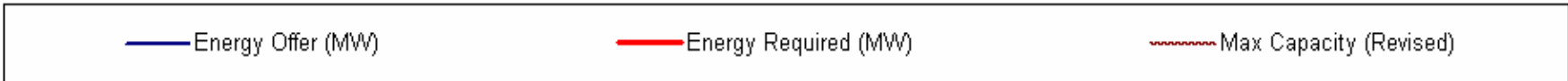
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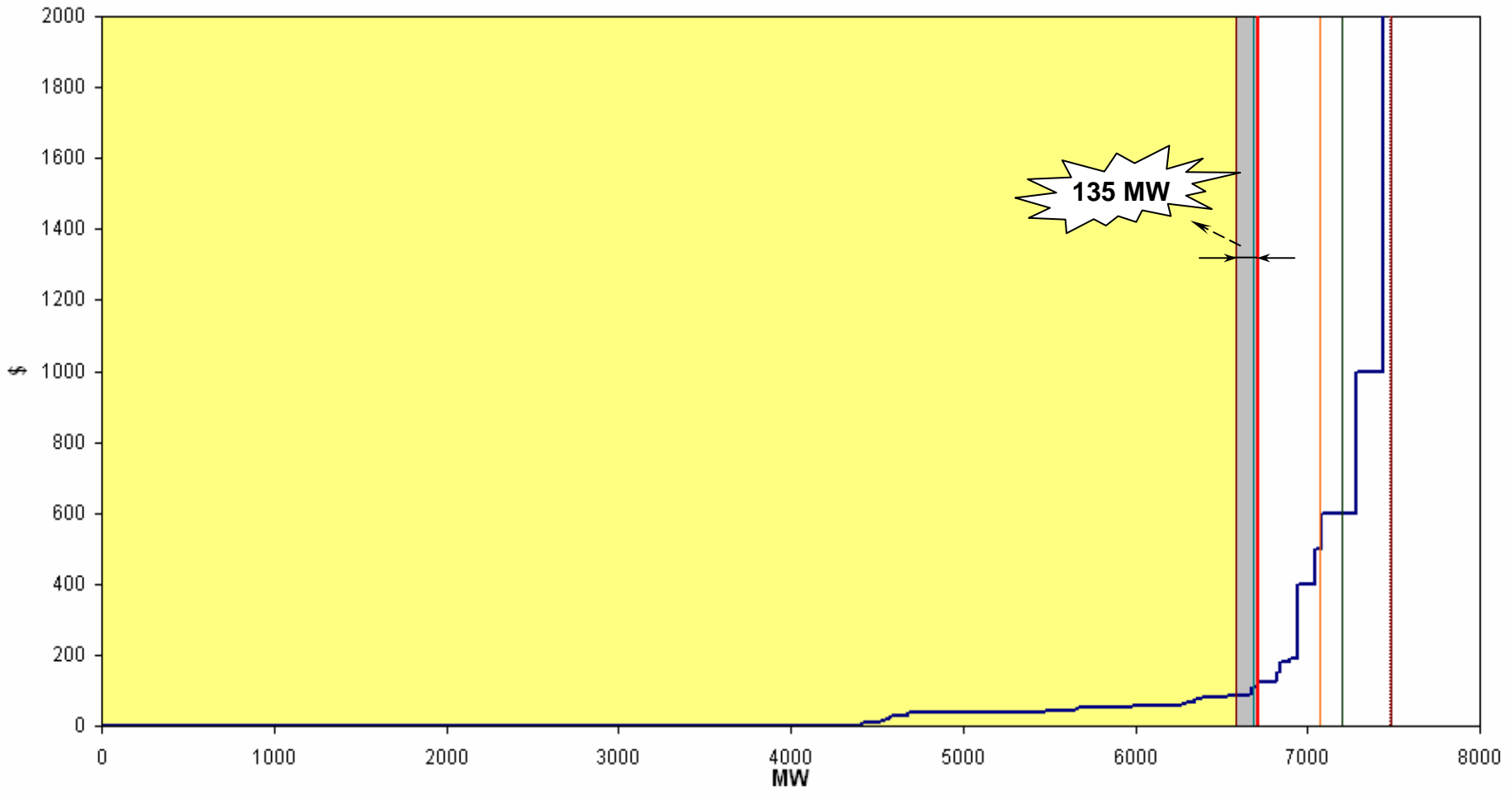


# Energy Capability with Security Concerns (19 June 2006)



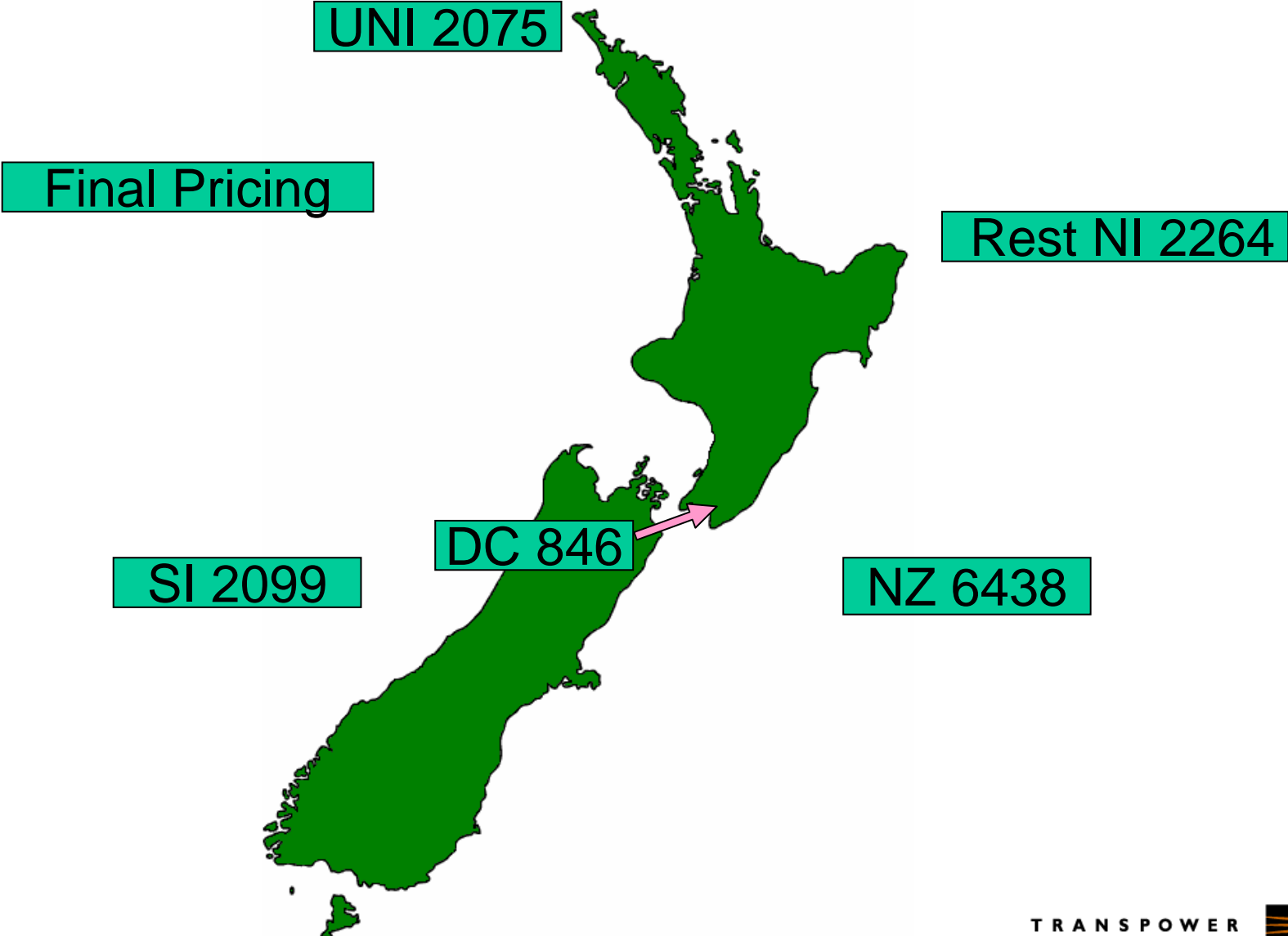


### Energy Capability with Security Concerns (19 June 2006)



LOAD

# 18 June 2006 13:00 FP



LOAD

# 18 June 2006 13:00 PDS/FP

UNI 2075

UNI 2106

Final Pricing

Pre Dispatch Schedule

Rest NI 2264

Rest NI 2241

SI 2099

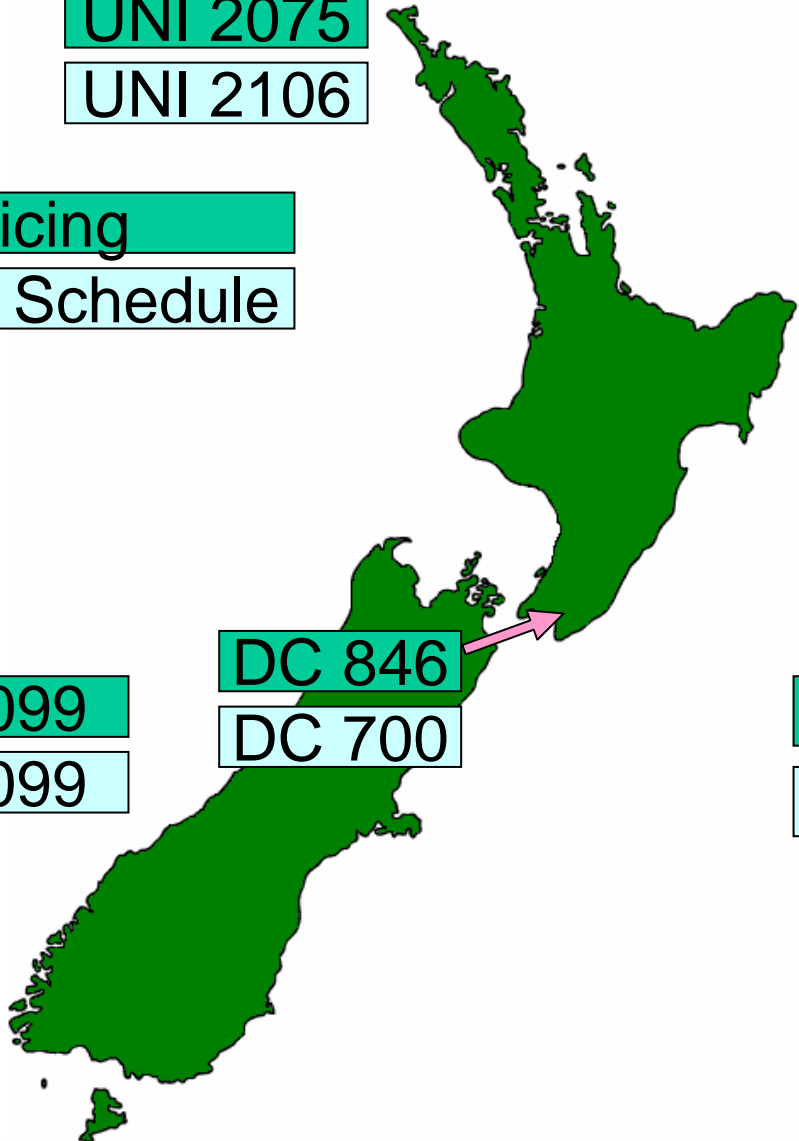
SI 2099

DC 846

DC 700

NZ 6438

NZ 6446



PRICE

# 18 June 2006 13:00 FP

KTA \$100,000

Final Pricing

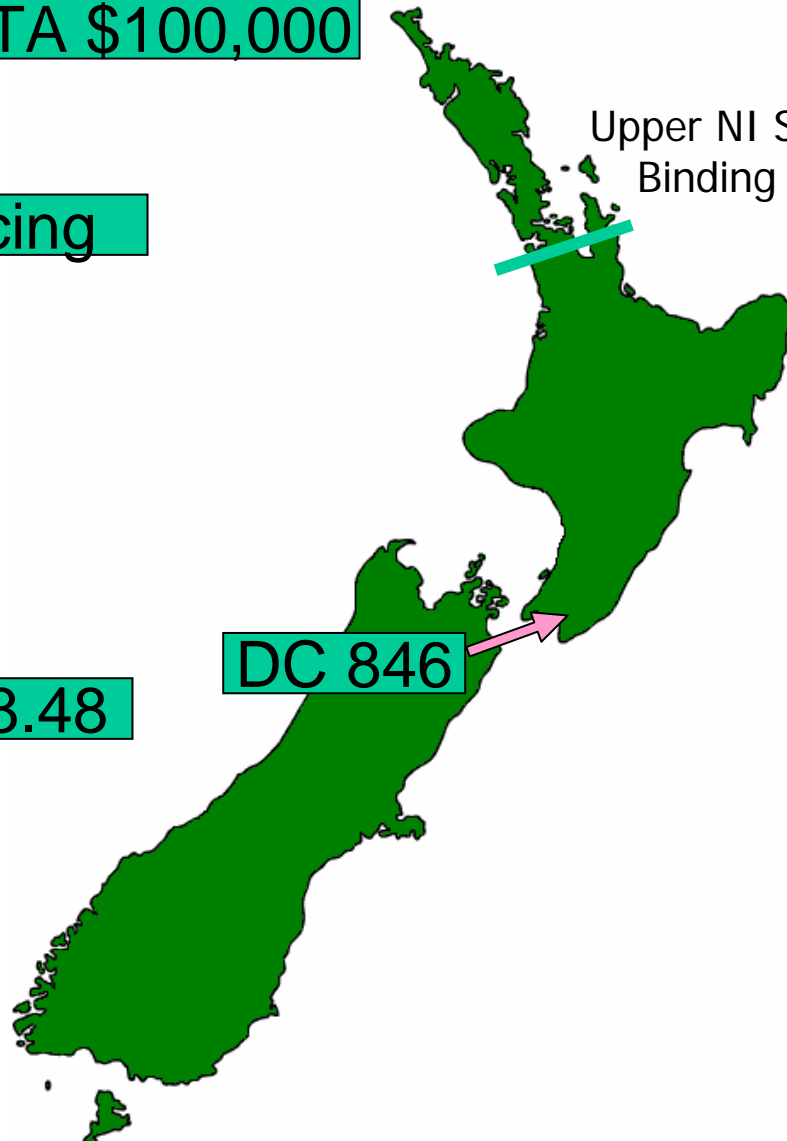
Upper NI Stability Constraint  
Binding Limit = 755MW

BPE \$814.34

ISL \$788.48

DC 846

NZ 6438



# 18 June 2006 13:00 PDS/FP

KTA \$100,000

KTA \$475.86

Final Pricing  
Pre Dispatch Schedule

Upper NI Stability Constraint  
Binding Limit = 755MW

BPE \$814.34

BPE \$287.82

ISL \$788.48

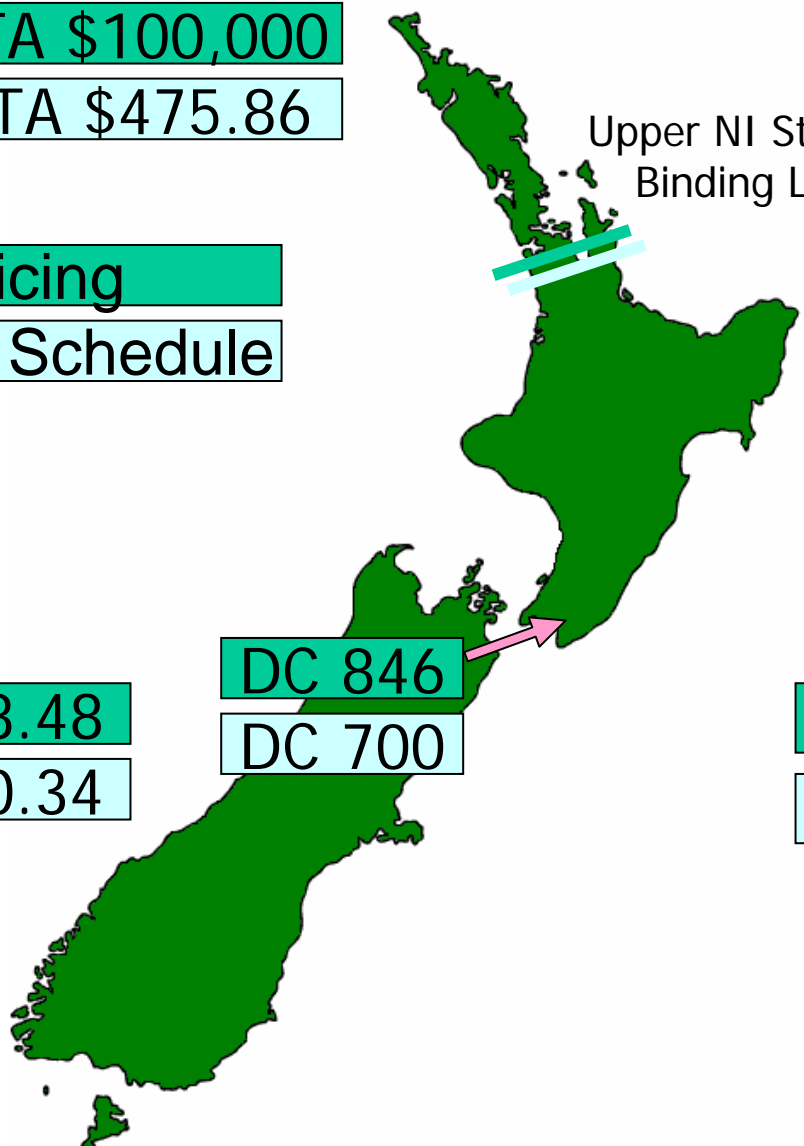
ISL \$280.34

DC 846

DC 700

NZ 6438

NZ 6446







# 18 June 13:00 summary

	18 June 13:00 SDS
Total ENOF	7443MW
Wind Forecast	54MW
NI 60s Offered	548MW
Load	6445MW







# 19 June 17:00 summary

	18 June 13:00 SDS		19 June 17:00 SDPQ
Total ENOF	7443MW	-116 	7300MW
Wind Forecast	54MW	+48 	102MW
NI 60s Offered	548MW	-181 	367MW
Load	6445MW	-7 	6438MW



# 19 June 17:29 summary

	18 June 13:00 SDS		Final total
Total ENOF	7443MW	-152 	7291MW
Wind Forecast	54MW	+57 	111MW
NI 60s Offered	548MW	-181 	367MW
Load	6445MW	-5 	6440MW



LOAD

# 17:00 - 17:29 19th

UNI 2075

UNI 1999

Final Pricing

SDPQ 17:11

Upper NI Stability Constraint  
Binding Limit = 755MW

Rest NI 2264

Rest NI 2308

SI 2099

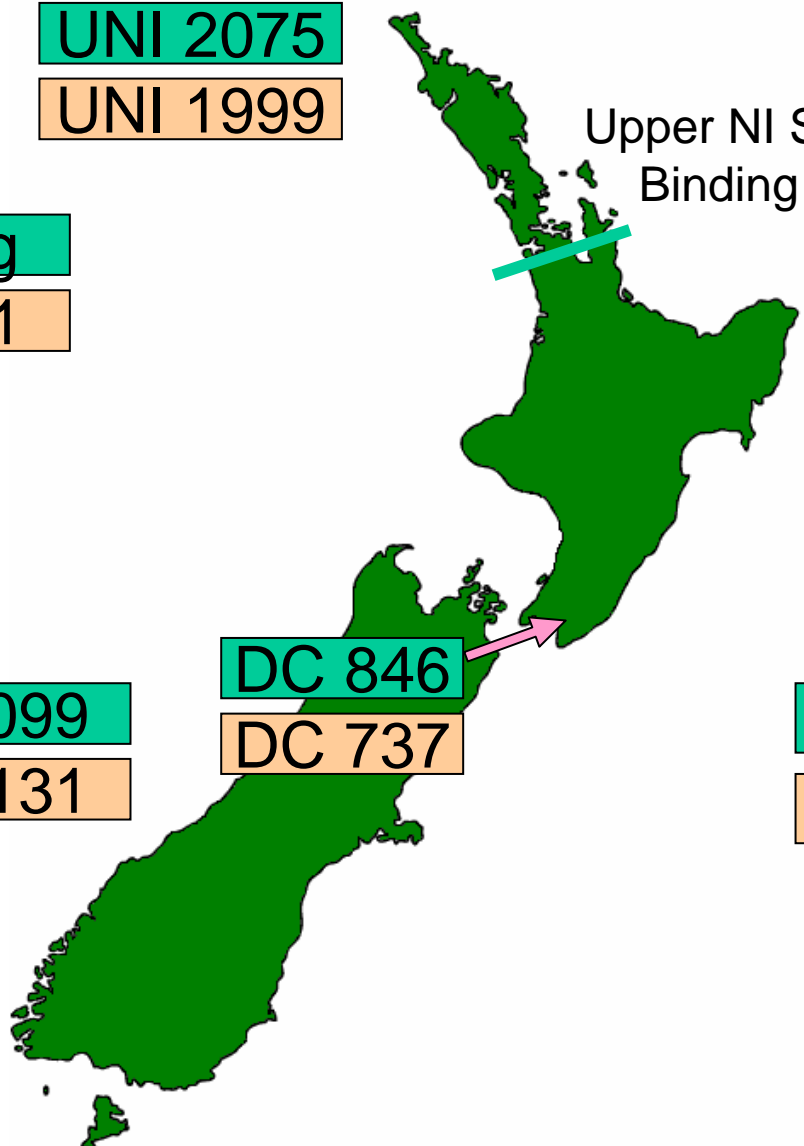
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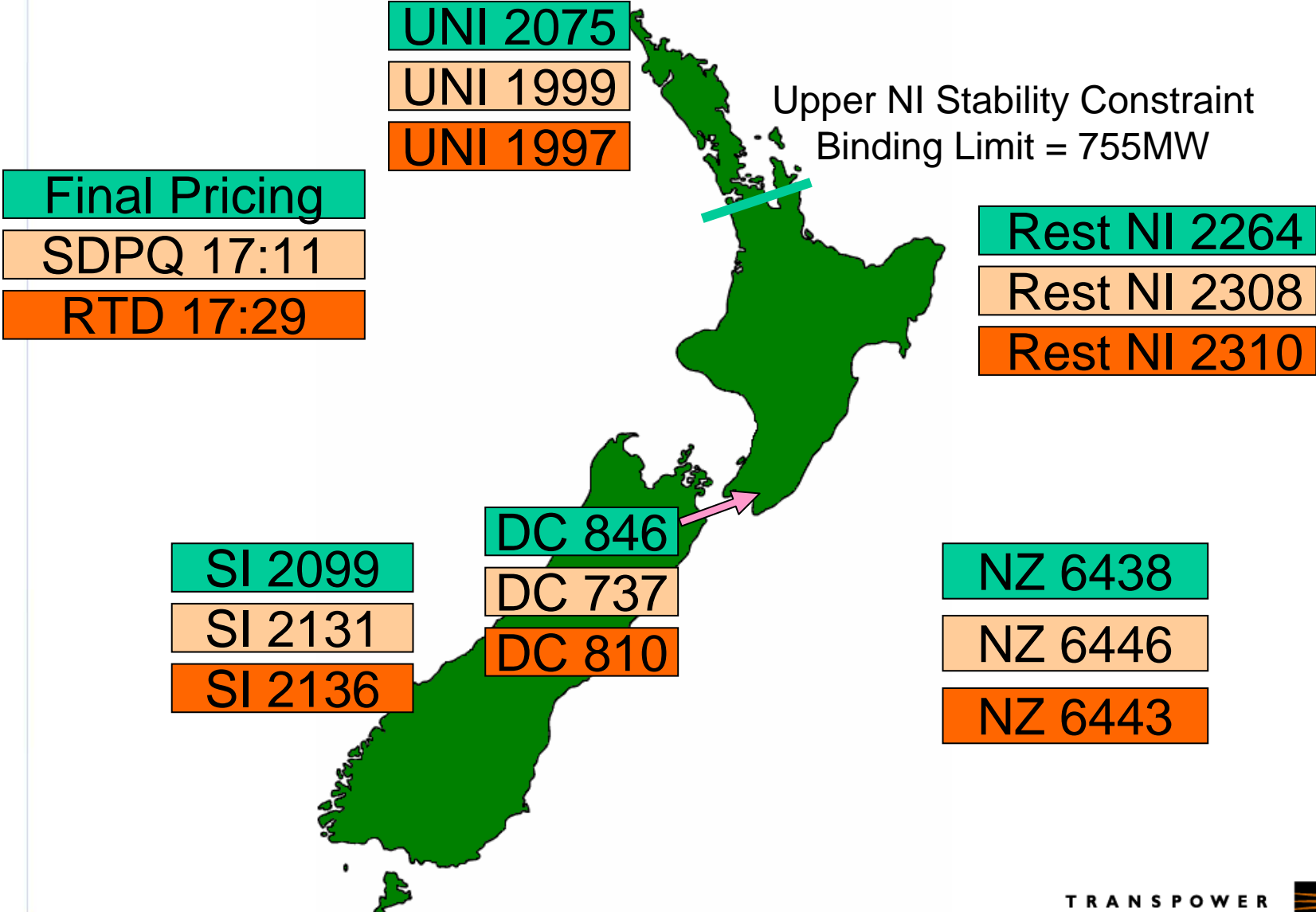
DC 737

NZ 6438

NZ 6438



# 17:00 - 17:29 19th



**Final Pricing**  
 SDPQ 17:11  
 RTD 17:29

**Rest NI 2264**  
 Rest NI 2308  
 Rest NI 2310

**NZ 6438**  
 NZ 6446  
 NZ 6443



# 17:00 - 17:29 19th

KTA \$100,000

KTA \$100,000

Upper NI Stability Constraint  
Binding Limit = 755MW

BPE \$814.34

BPE \$83,354.12

Final Pricing

SDPQ 17:11

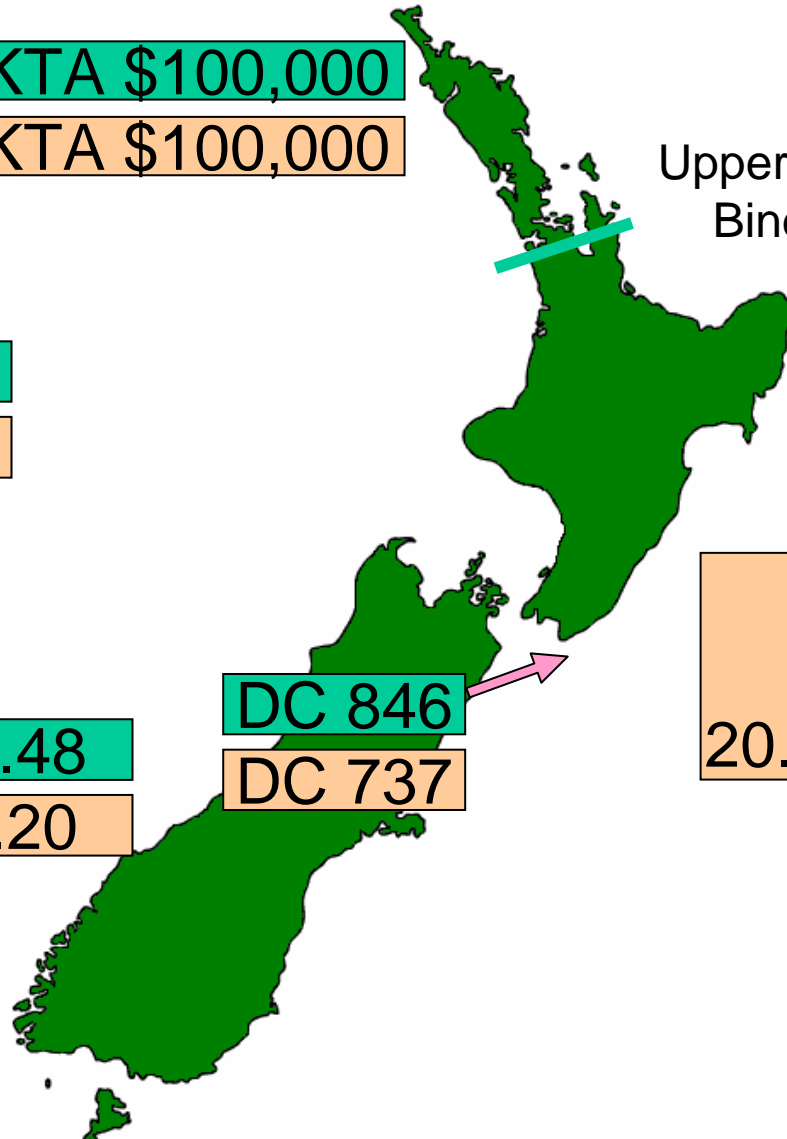
ISL \$788.48

ISL \$362.20

DC 846

DC 737

7:11 SDPQ  
19.82 Def Gen  
20.27 Def NI 60s Res



# 17:00 - 17:29 19th

KTA \$100,000

KTA \$100,000

KTA \$100,000

Upper NI Stability Constraint  
Binding Limit = 755MW

BPE \$814.34

BPE \$83,354.12

BPE \$83,781.96

Final Pricing

SDPQ 17:11

RTD 17:29

ISL \$788.48

ISL \$362.20

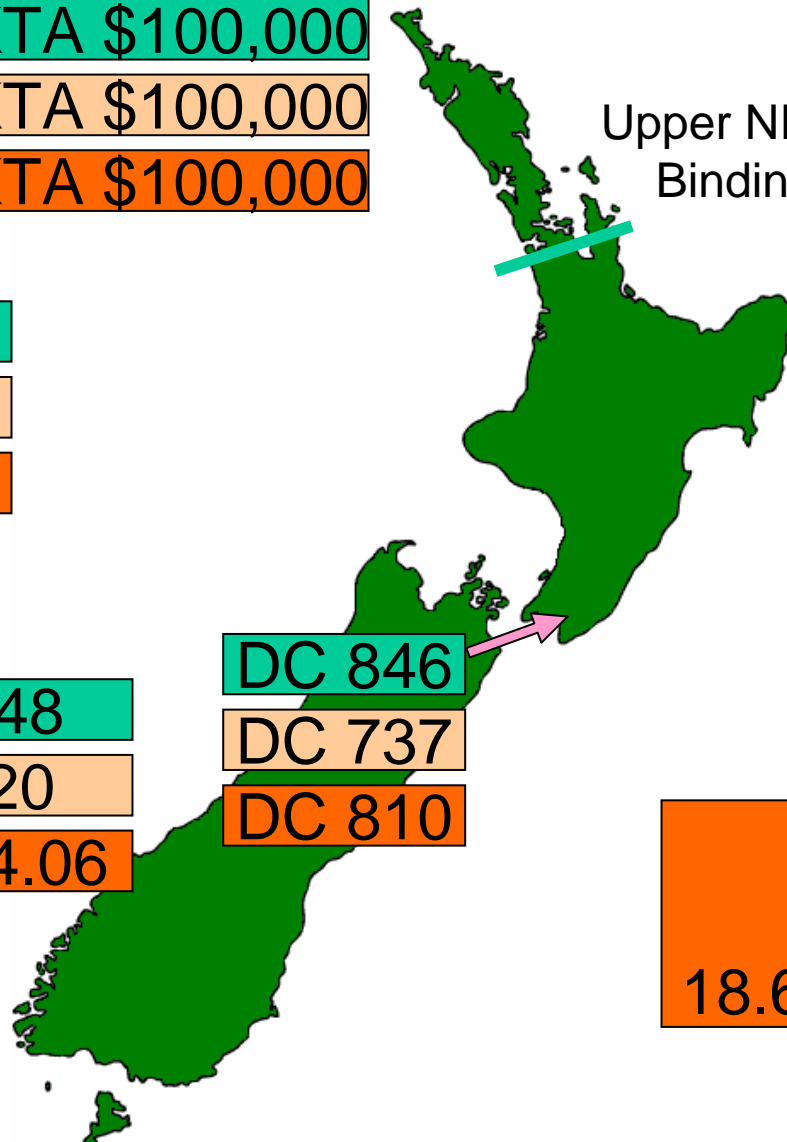
ISL \$ 82,374.06

DC 846

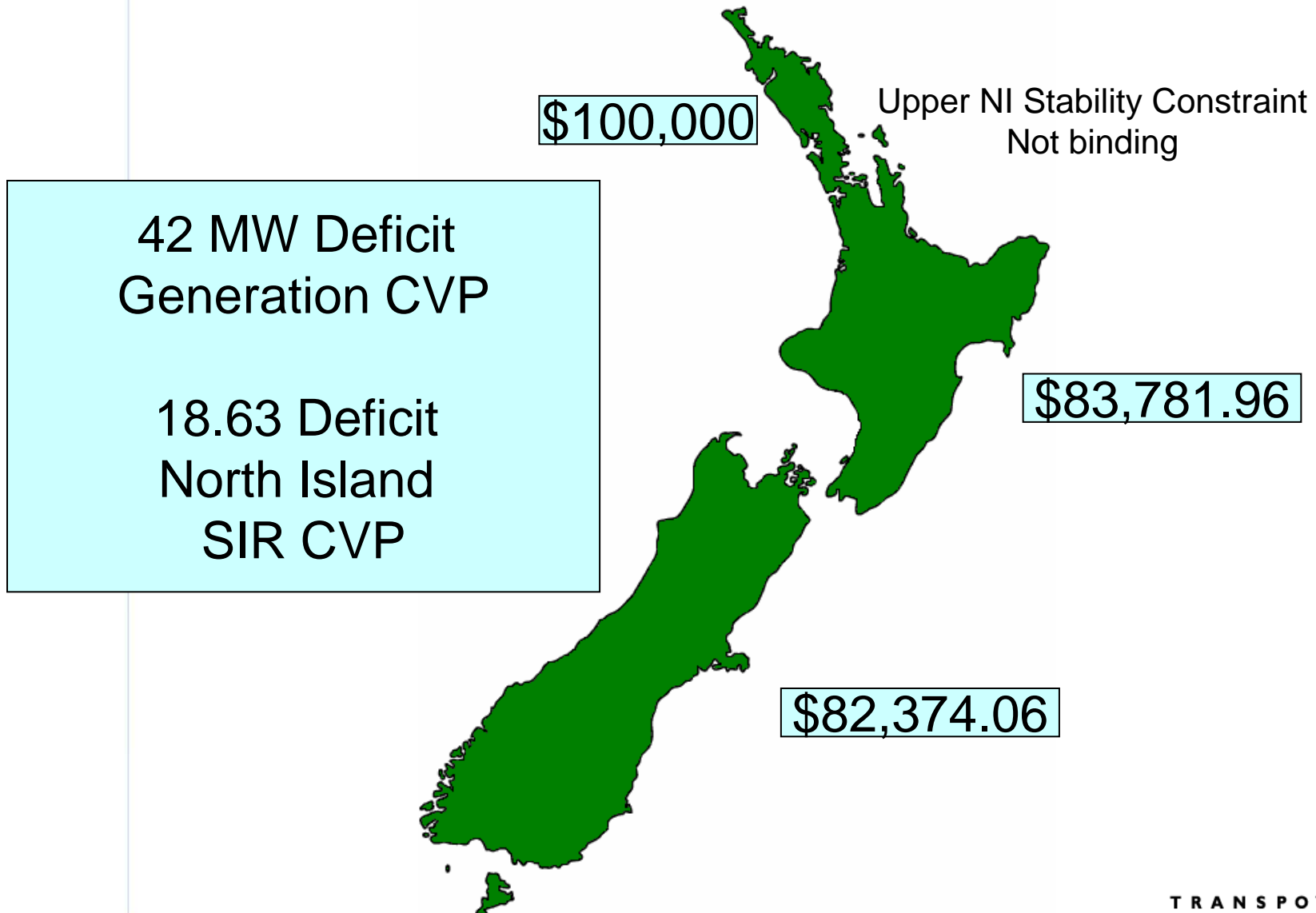
DC 737

DC 810

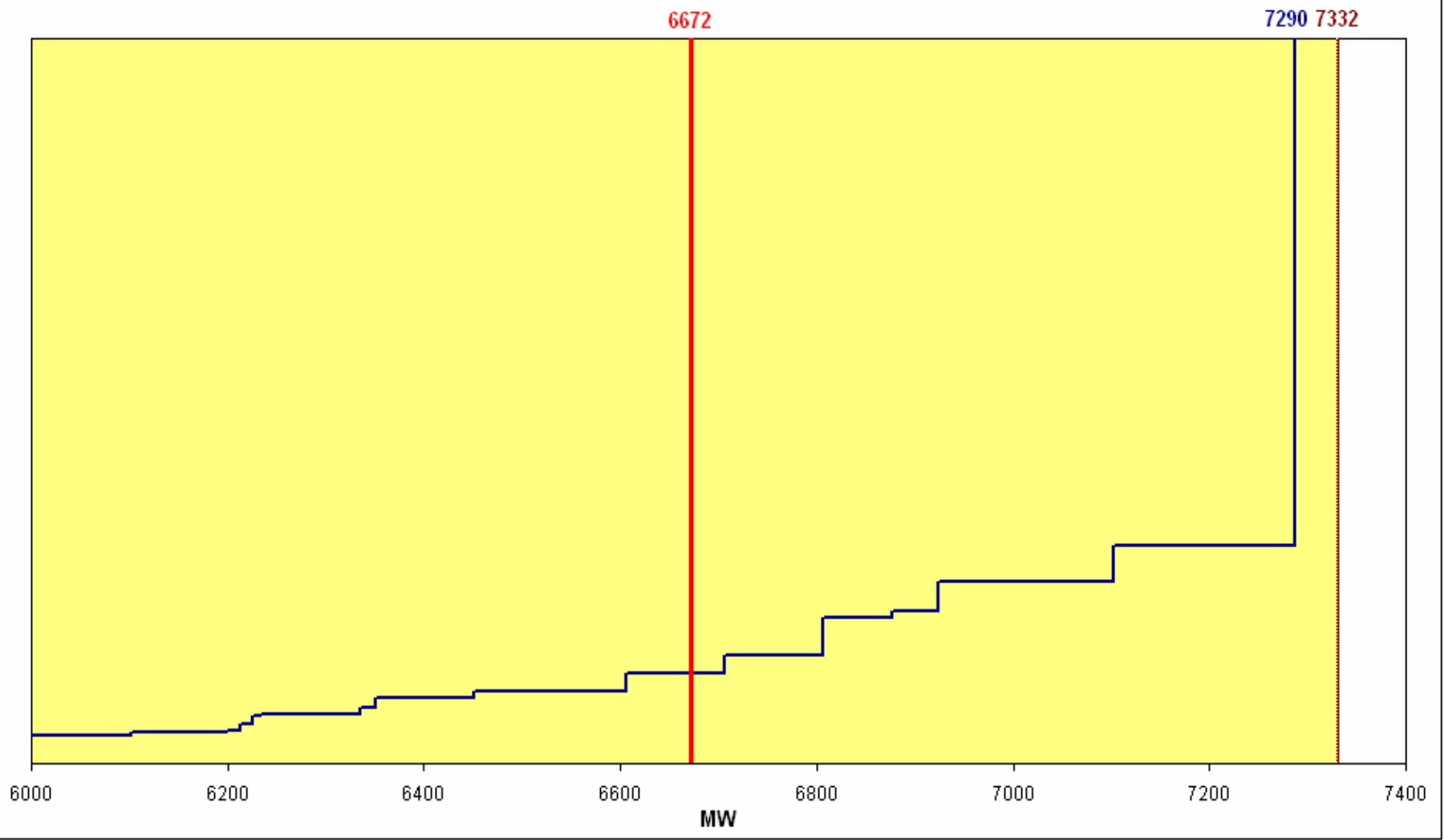
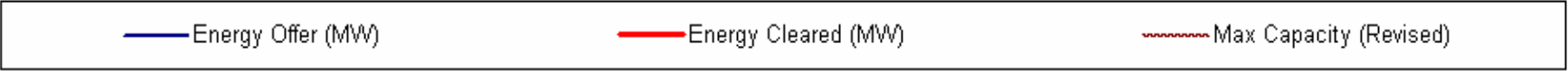
17:29 RTD  
42 Def Gen  
18.63 Def NI 60s Res



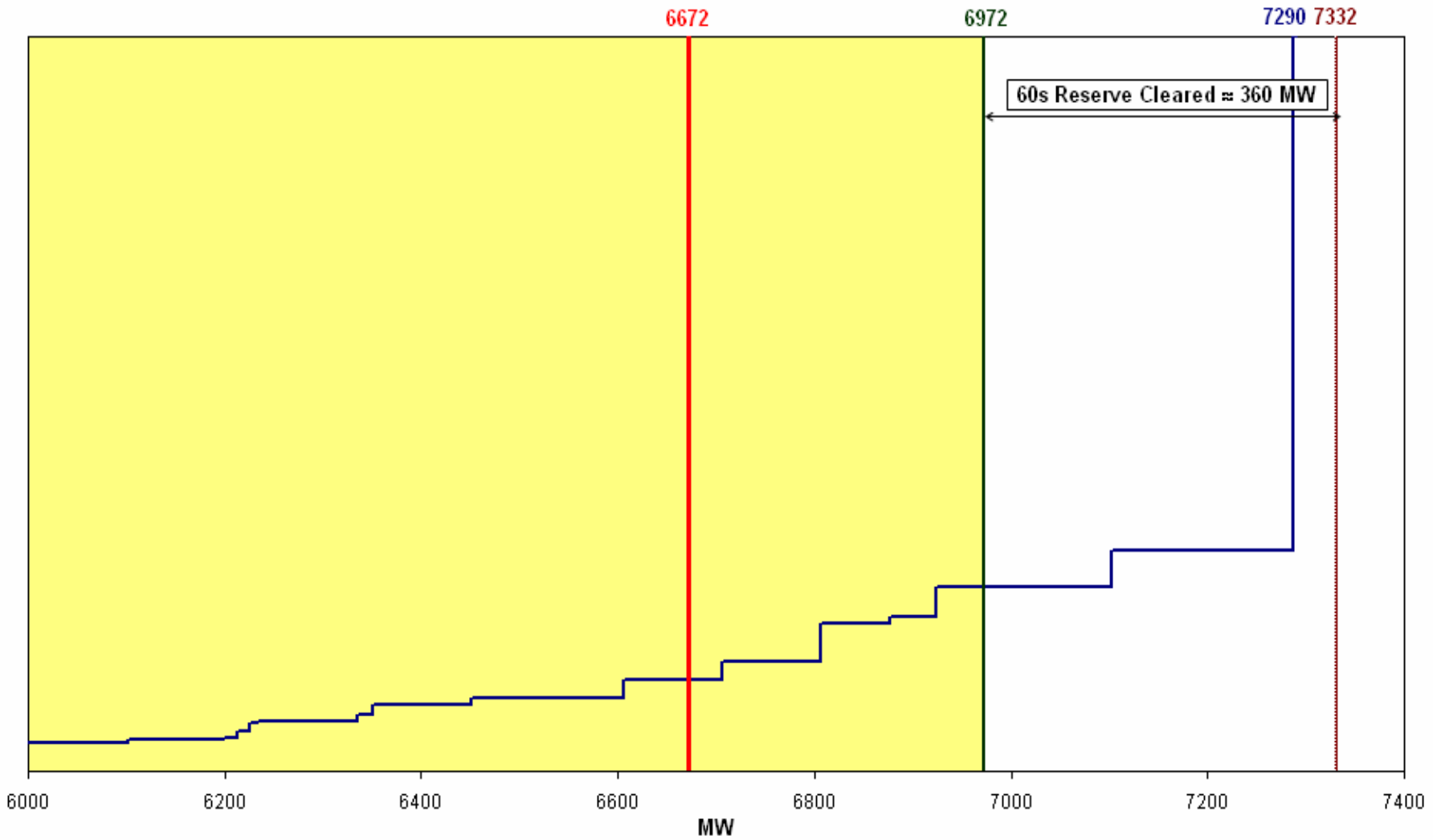
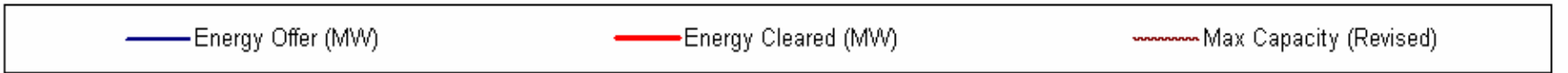
# 17:29 Real Time Dispatch



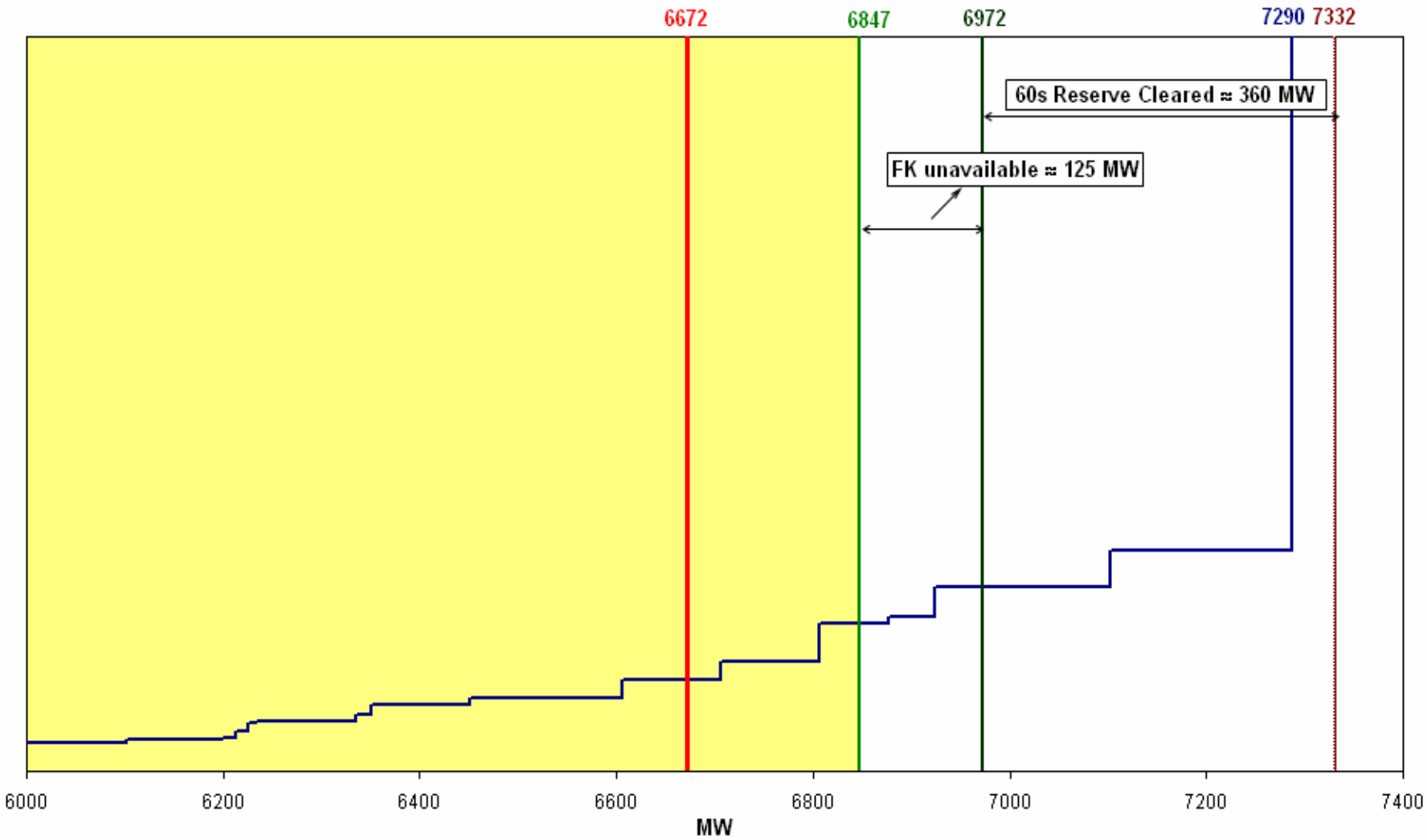
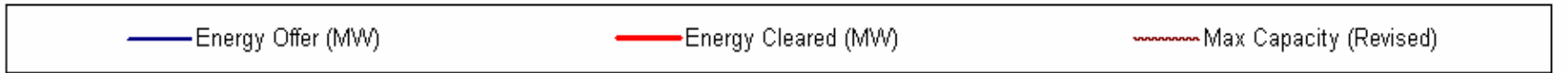
### Energy Capability (19 June 2006) - RTD Output



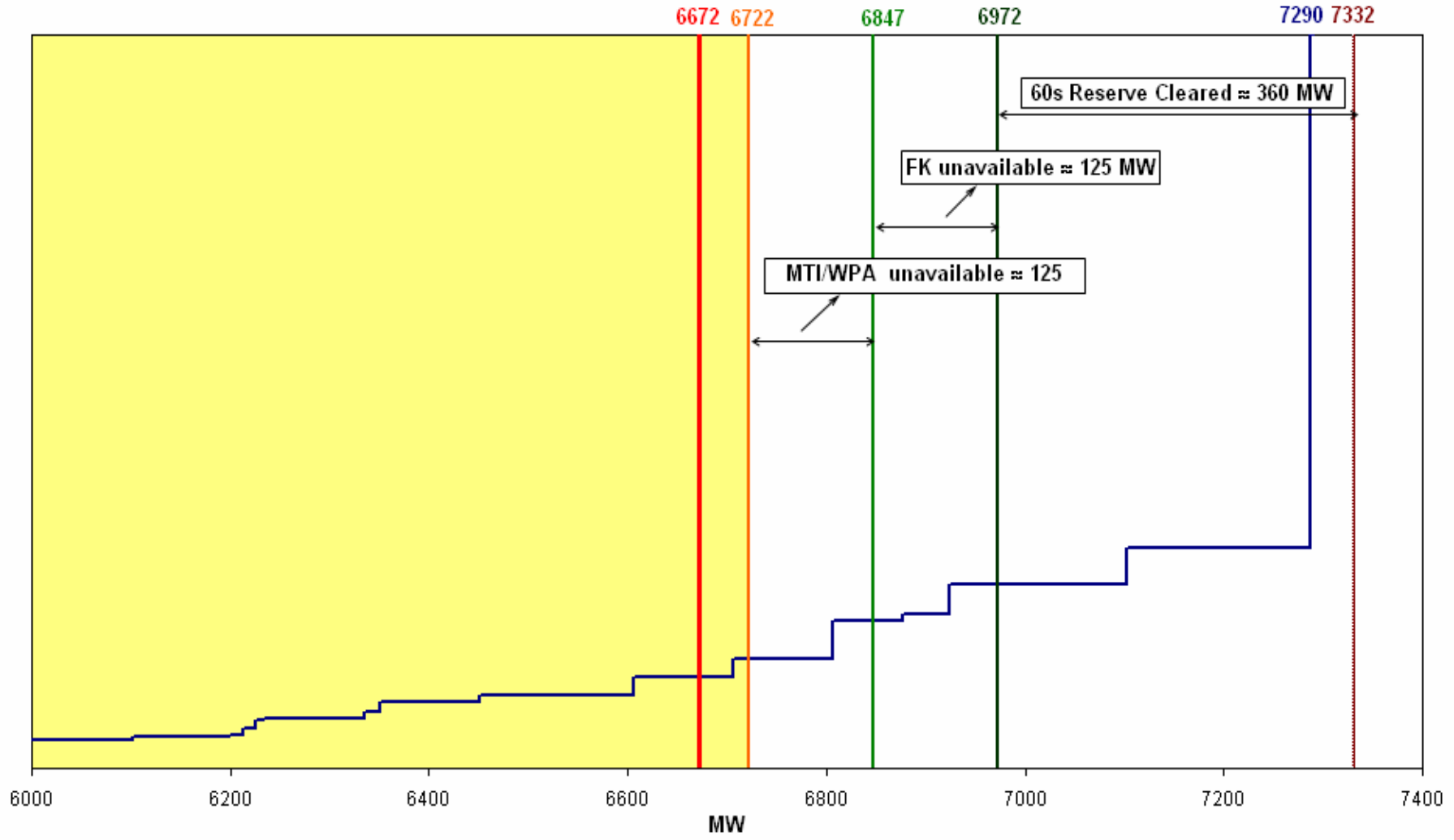
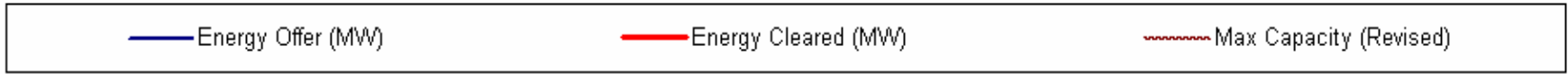
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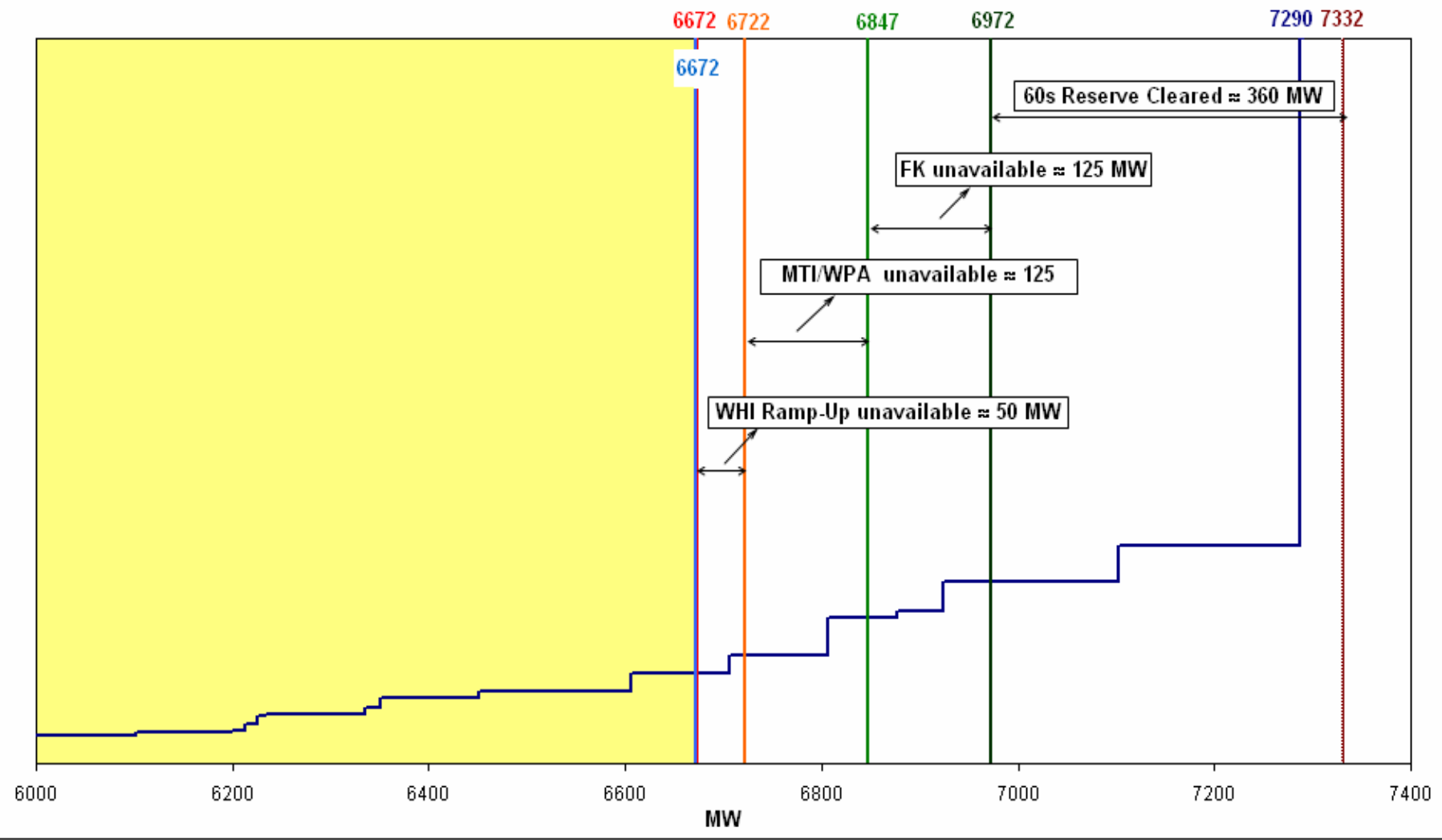
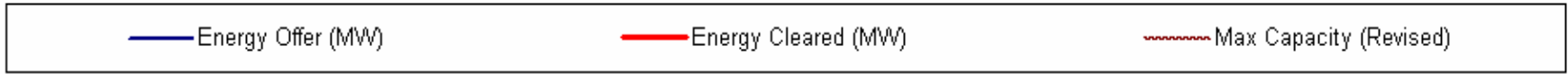
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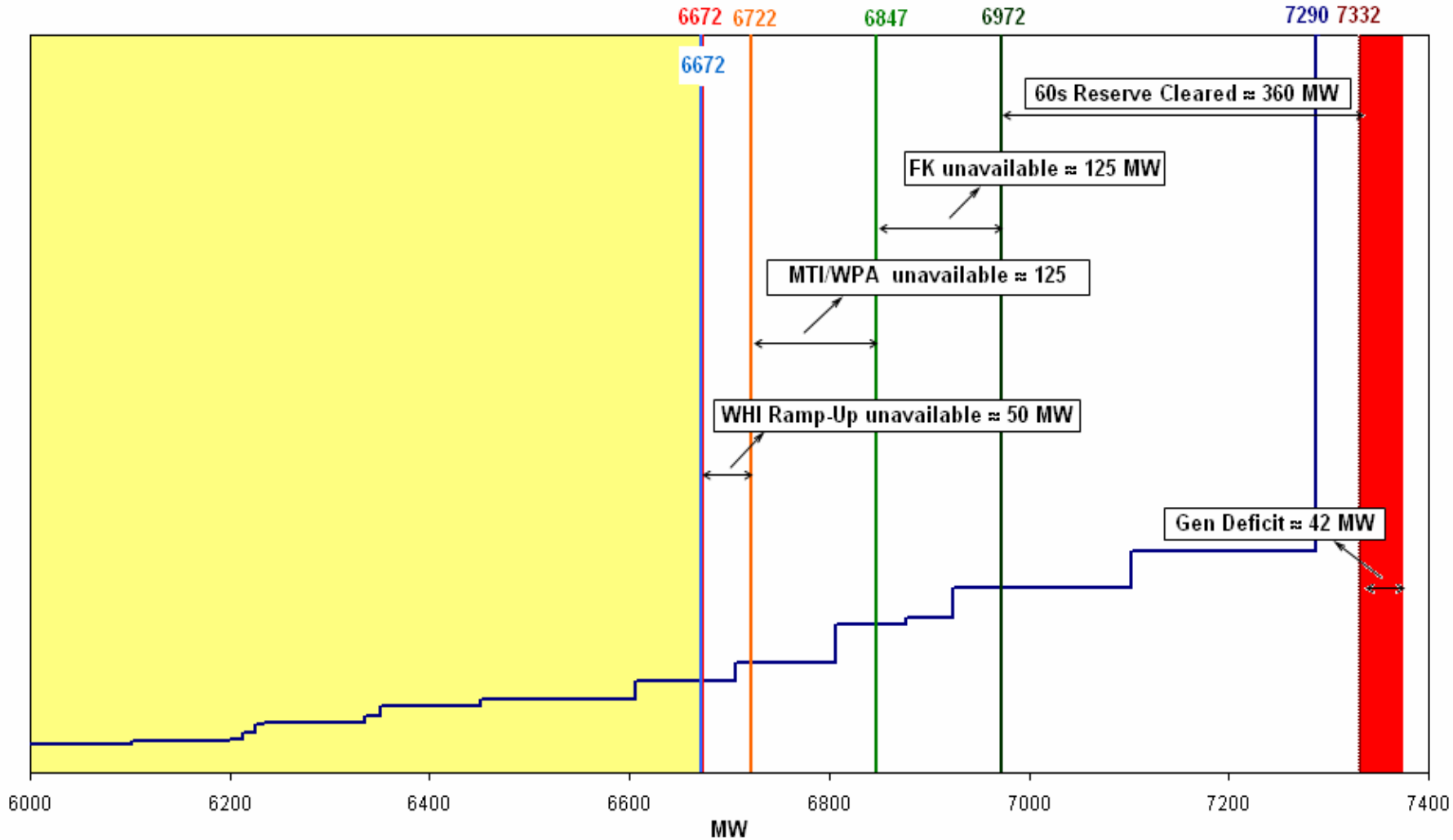
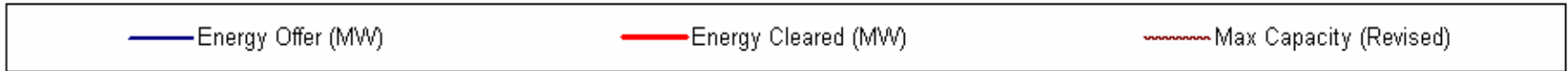
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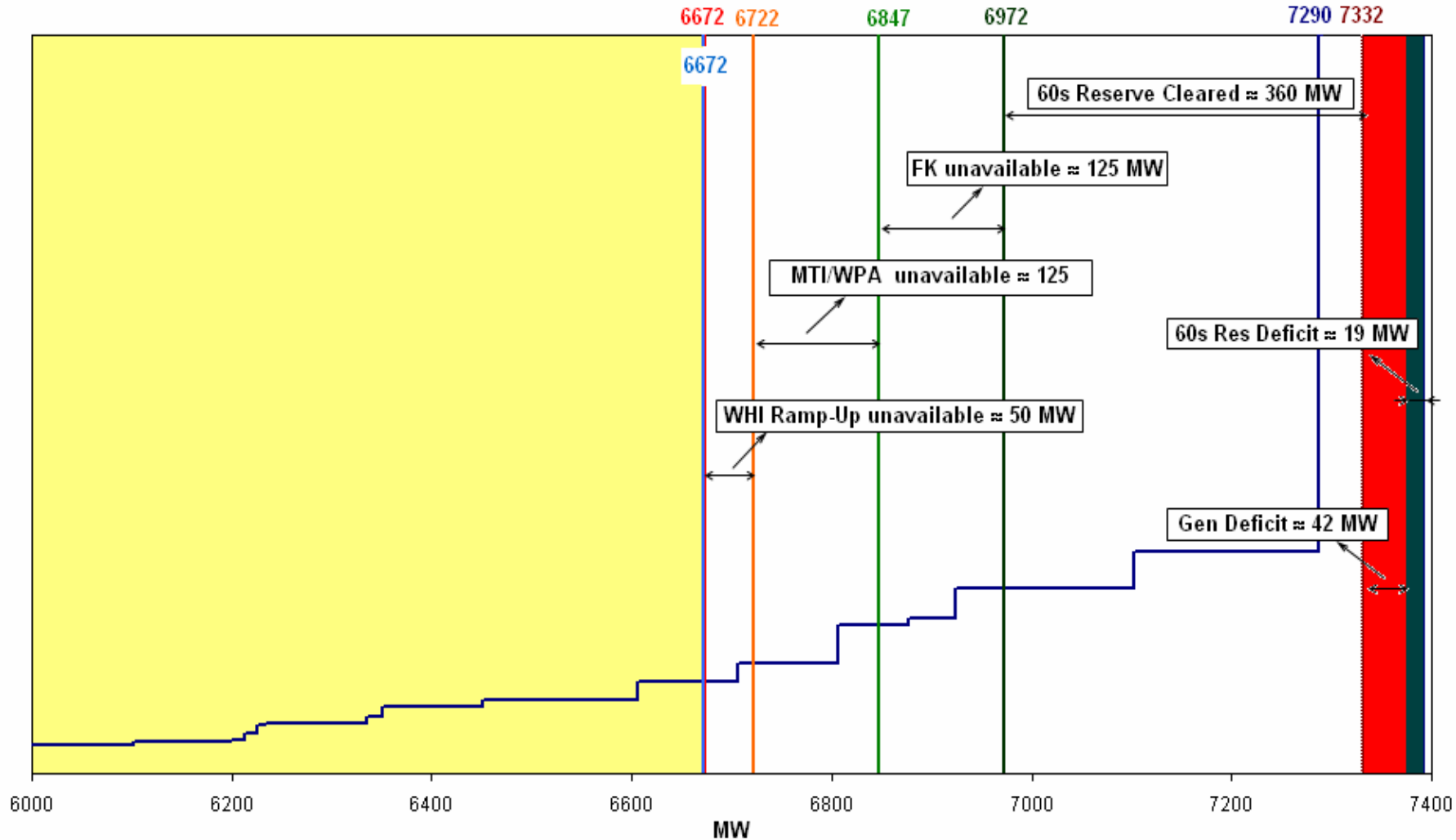
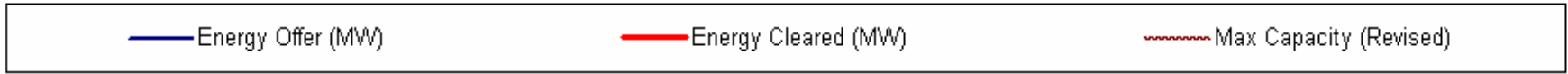
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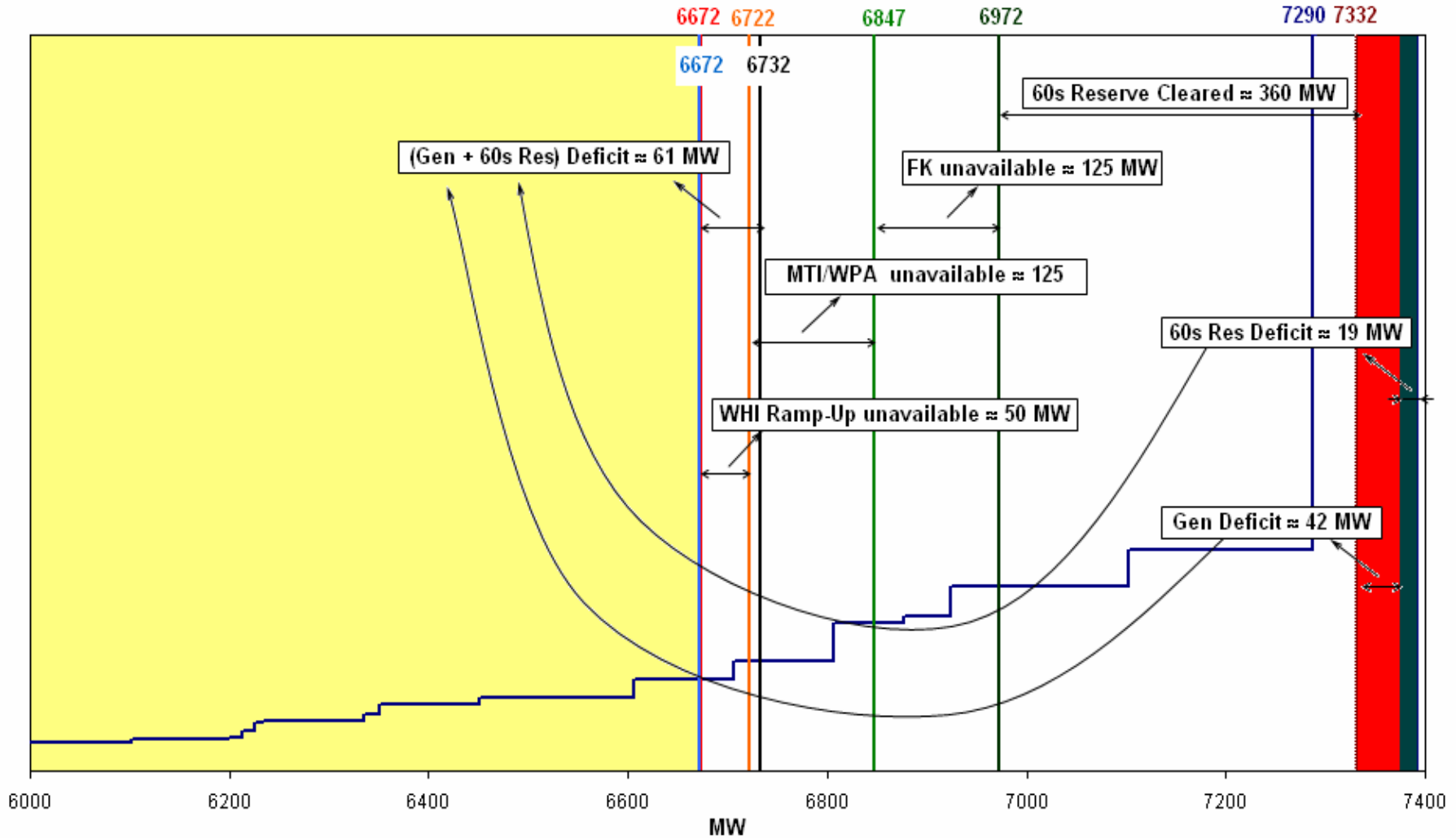
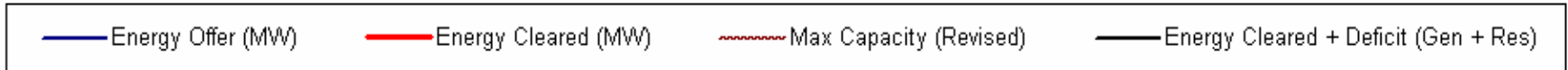
### Energy Capability (19 June 2006) - RTD Output



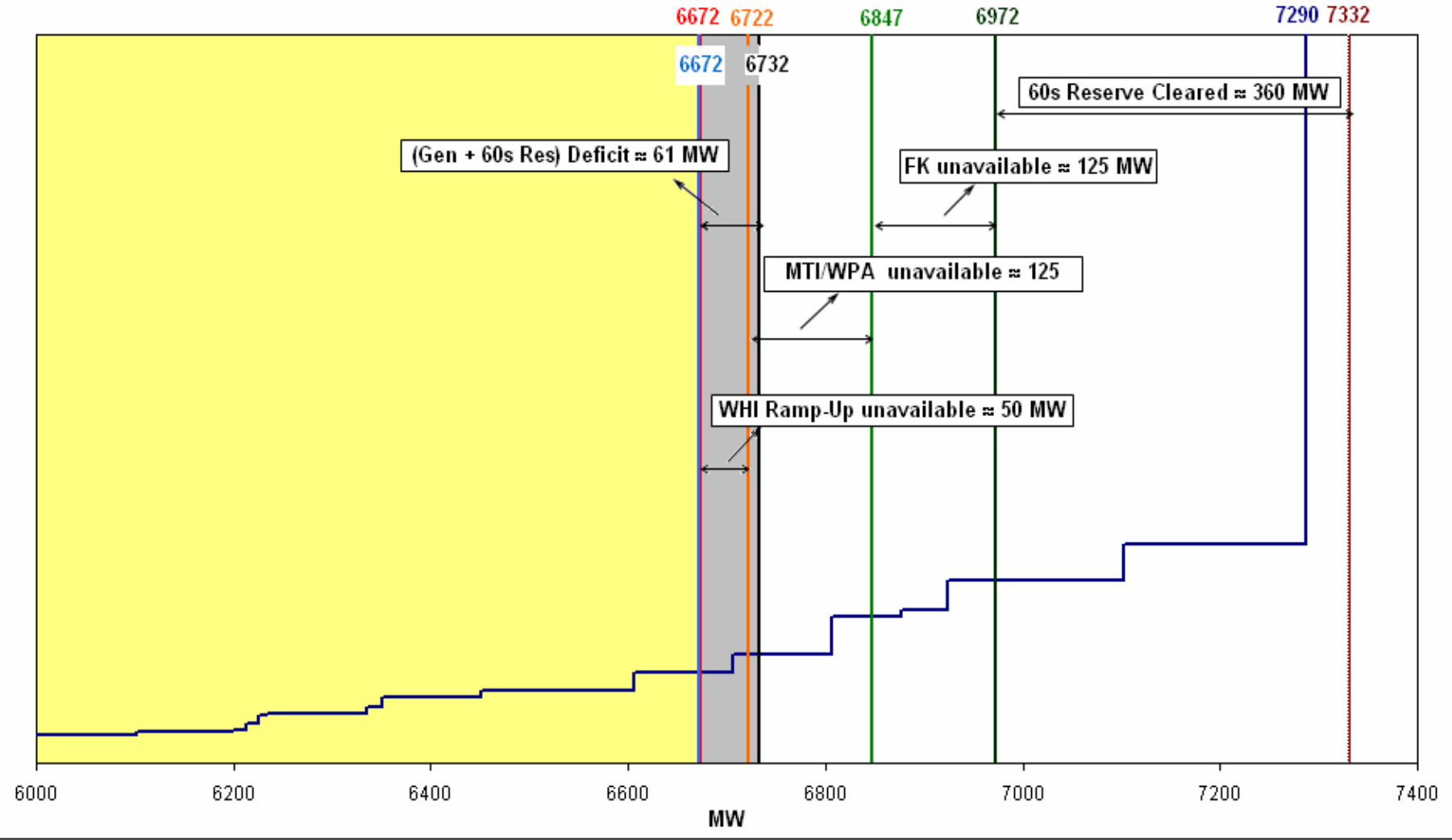
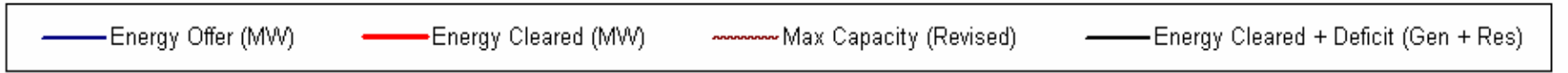
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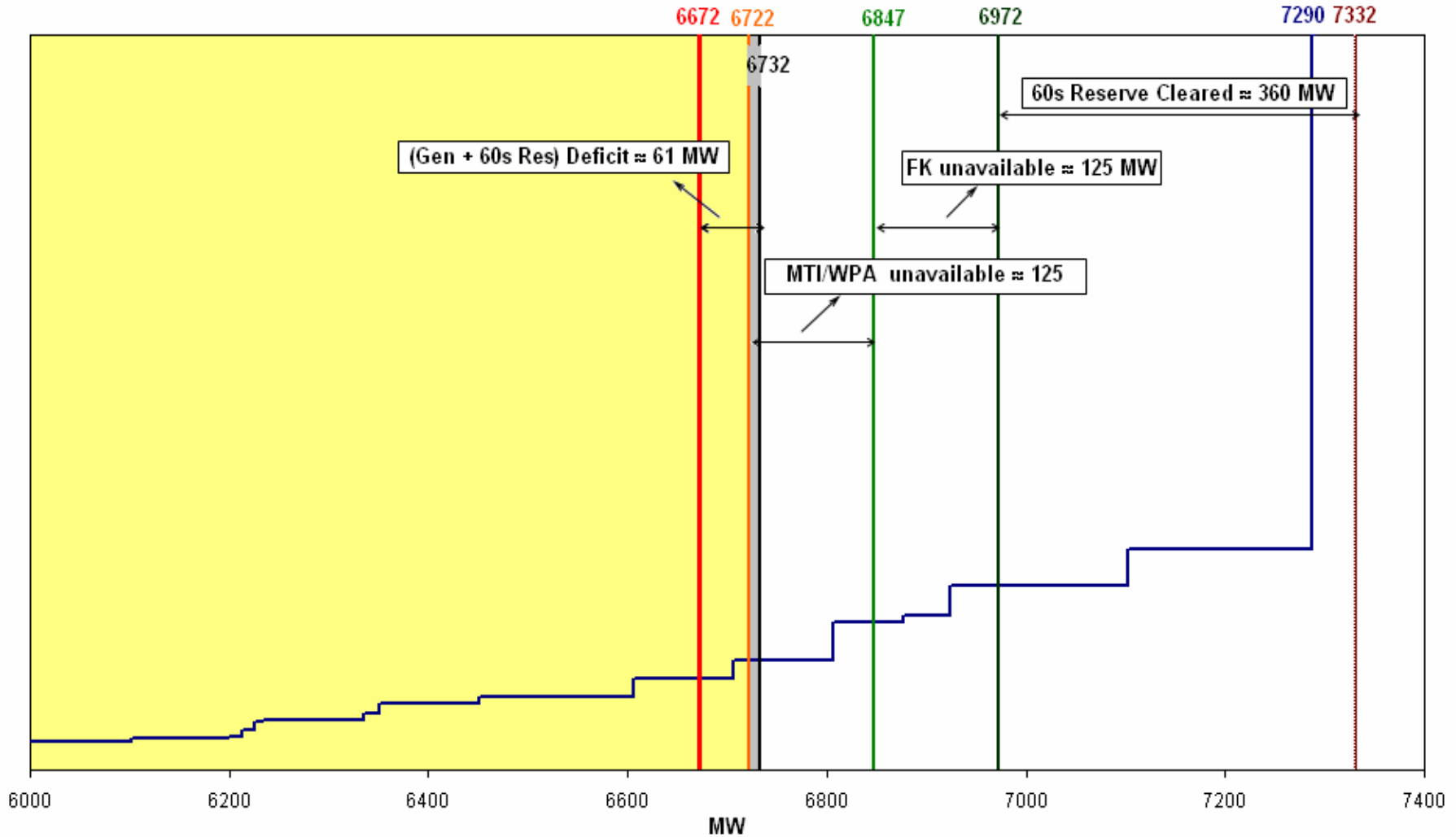
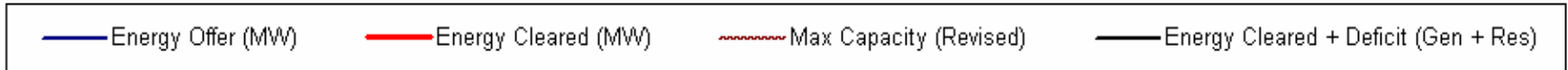
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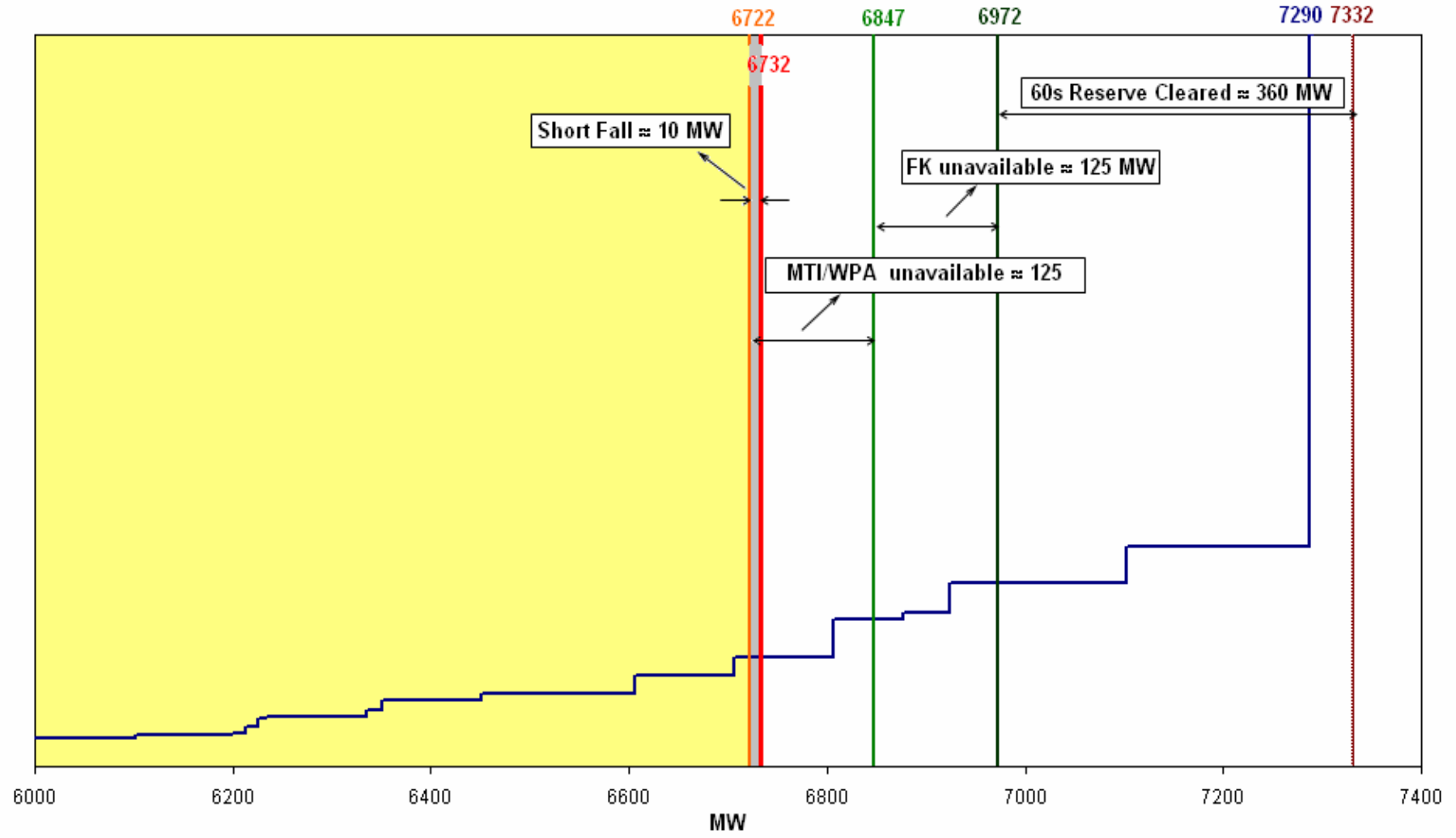
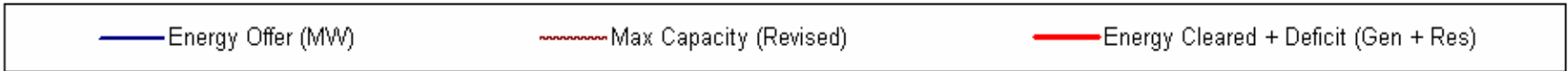
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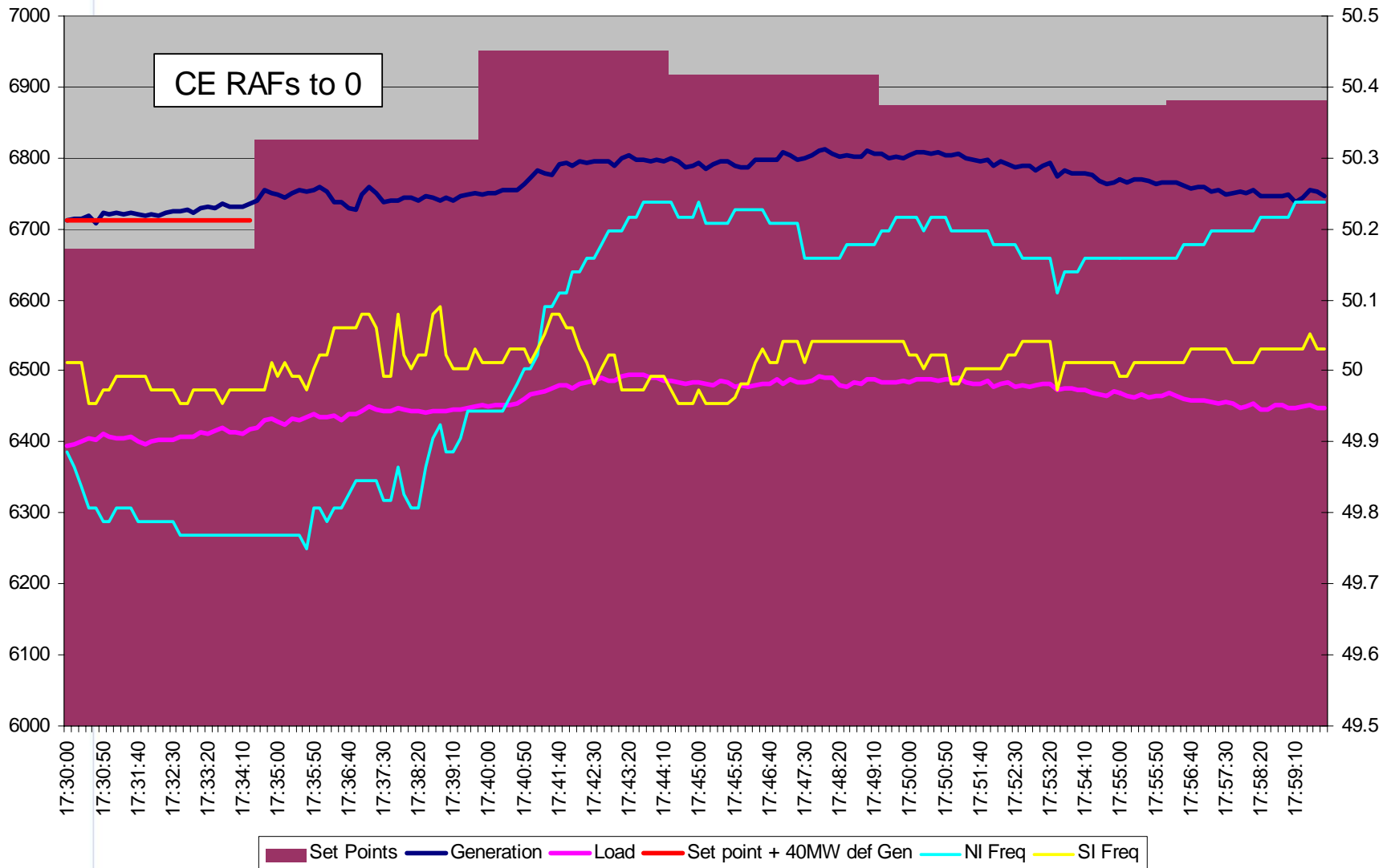
### Energy Capability (19 June 2006) - RTD Output



### Energy Capability (19 June 2006) - RTD Output



# Dispatch and actual energy



# Huntly versus dispatch instructions and frequency

