



Activity 2: Price setting Solution

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Solution: spot pricing scenario #1

Generating units available: $i = 1, 2, 3$; Demand blocks available: $j = 1, 2, 3, 5$

Load met = 130 MW;

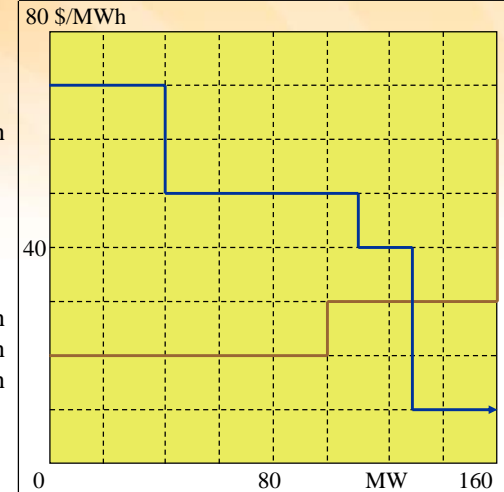
Spot price = 30 \$/MWh

Generator surpluses:

Gen1:	1000	\$/h
Gen2:	0	\$/h
Gen3:	0	\$/h
Total gen:	1000	\$/h

Demand block surpluses:

Dem1:	1600	\$/h
Dem2:	1400	\$/h
Dem3:	200	\$/h
Dem4:	0	\$/h
Dem5:	0	\$/h
Total dem:	3200	\$/h
Industry surplus:	4200	\$/h



Solution: predetermined pricing scenario #1

Generating units available: $i = 1, 2, 3$; Demand blocks available: $j = 1, 2, 3, 5$

Load met = 130 MW;

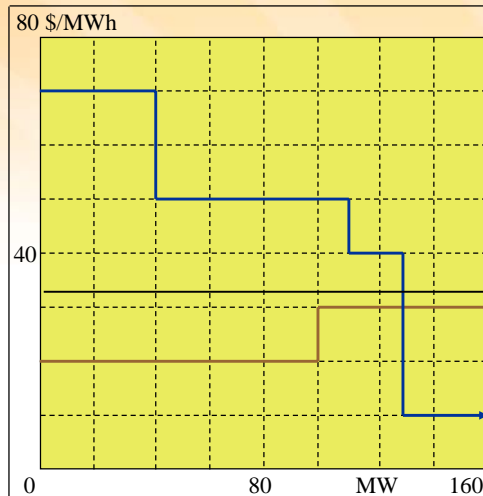
Predetermined price = 33.3 \$/MWh

Generator surpluses:

Gen1:	1333	\$/h
Gen2:	100	\$/h
Gen3:	0	\$/h
Total gen:	1433	\$/h

Demand block surpluses:

Dem1:	1467	\$/h
Dem2:	1167	\$/h
Dem3:	133	\$/h
Dem4:	0	\$/h
Dem5:	0	\$/h
Total dem:	2767	\$/h
Industry surplus:	4200	\$/h



Solution: spot pricing scenario #2

Generating units available: $i = 2, 3$; Demand blocks available: $j = 1, 2, 3, 5$

Load met = 60 MW;

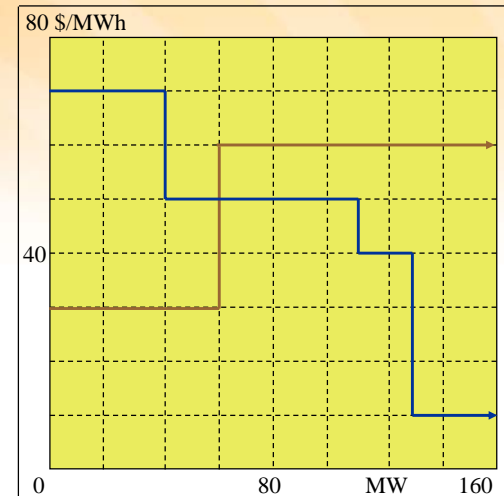
Spot price = 50 \$/MWh

Generator surpluses:

Gen1:	0	\$/h
Gen2:	1200	\$/h
Gen3:	0	\$/h
Total gen:	1200	\$/h

Demand block surpluses:

Dem1:	800	\$/h
Dem2:	0	\$/h
Dem3:	0	\$/h
Dem4:	0	\$/h
Dem5:	0	\$/h
Total dem:	800	\$/h
Industry surplus:	2000	\$/h



Solution: predetermined pricing scenario #2

Generating units available: $i = 2, 3$; Demand blocks available: $j = 1, 2, 3, 5$

Load met = 130 MW; Predetermined price = 33.3 \$/MWh

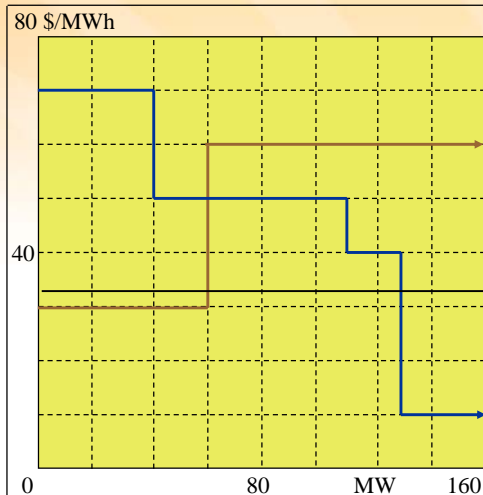
Generator surpluses:

Gen1:	0	\$/h
Gen2:	200	\$/h
Gen3:	-1867	\$/h
Total gen:	-1667	\$/h

Demand block surpluses:

Dem1:	1467	\$/h
Dem2:	1167	\$/h
Dem3:	133	\$/h
Dem4:	0	\$/h
Dem5:	0	\$/h
Total dem:	2767	\$/h

Industry surplus: 1100 \$/h



Solution: spot pricing scenario #3

Generating units available: $i = 1, 2, 3$; Demand blocks available: $j = 1, 4, 5$

Load met = 90 MW; Spot price = 20 \$/MWh

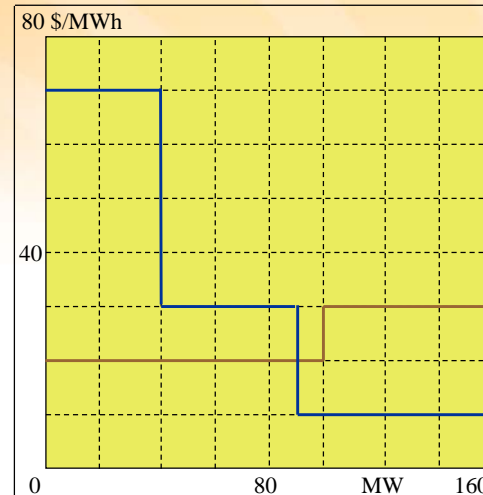
Generator surpluses:

Gen1:	0	\$/h
Gen2:	0	\$/h
Gen3:	0	\$/h
Total gen:	0	\$/h

Demand block surpluses:

Dem1:	2000	\$/h
Dem2:	0	\$/h
Dem3:	0	\$/h
Dem4:	500	\$/h
Dem5:	0	\$/h
Total dem:	2500	\$/h

Industry surplus: 2500 \$/h



Solution: predetermined pricing scenario #3

Generating units available: $i = 1, 2, 3$; Demand blocks available: $j = 1, 4, 5$

Load met = 40 MW; Predetermined price = 33.3 \$/MWh

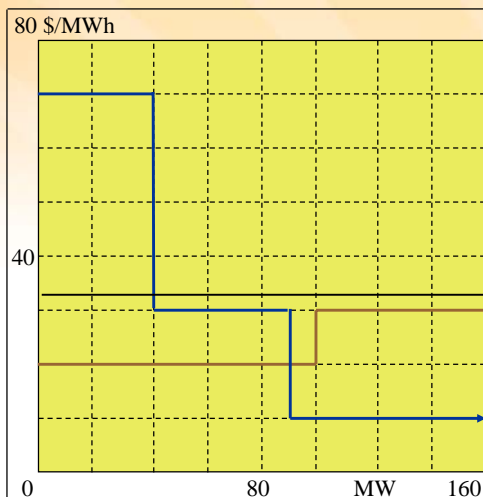
Generator surpluses:

Gen1:	533	\$/h
Gen2:	0	\$/h
Gen3:	0	\$/h
Total gen:	533	\$/h

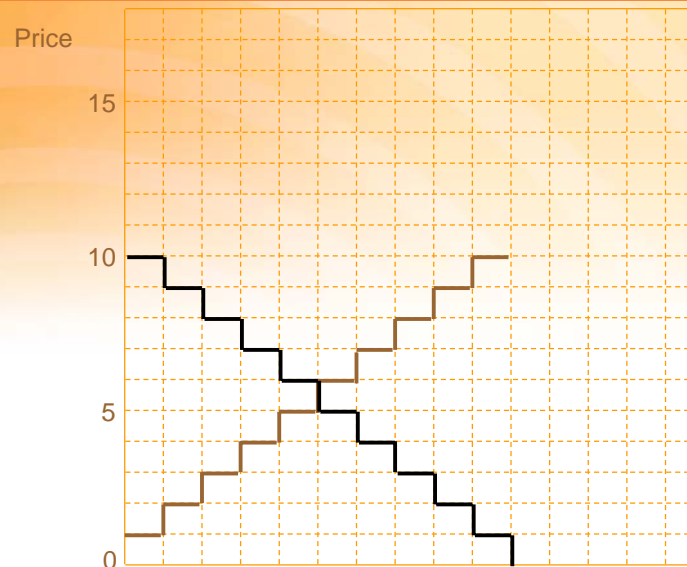
Demand block surpluses:

Dem1:	1467	\$/h
Dem2:	0	\$/h
Dem3:	0	\$/h
Dem4:	0	\$/h
Dem5:	0	\$/h
Total dem:	1467	\$/h

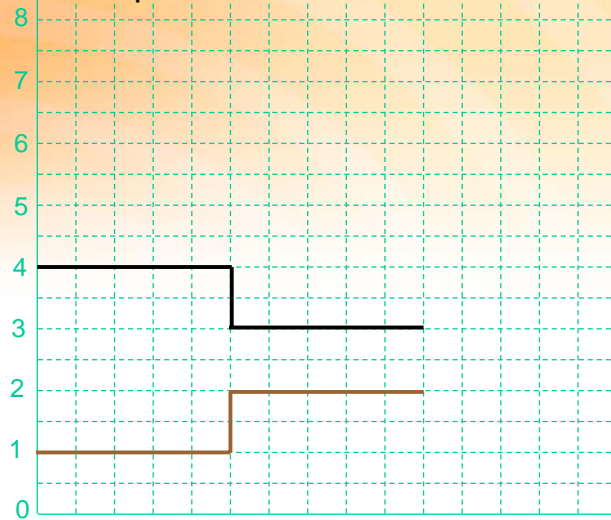
Industry surplus: 2000 \$/h



Auction example #1



Auction example #2



Generating units available: A, B, C; Demand blocks available: j = X, Y, Z

Load met = 130 MW;

Spot price = 30 \$/MWh

Generator surpluses:

Gen1: 1000 \$/h
Gen2: 0 \$/h
Gen3: 0 \$/h
Total gen: 1000 \$/h

Demand block surpluses:

Dem1: 1600 \$/h
Dem2: 1400 \$/h
Dem3: 200 \$/h
Dem4: 0 \$/h
Dem5: 0 \$/h
Total dem: 3200 \$/h
Industry surplus: 4200 \$/h

