

IECR Additional Worked Example

September 2007

Purpose

- ◆ The following slides give further explanation of the worked example presented at the QSEC workshops held by National Grid
- ◆ The purpose of the example is to clarify the calculation of incremental revenues that feed into the NPV test

Background

- ◆ When the bids received at an ASEP, for a particular price step and quarter, are greater than or equal to the supply at that price step, the following process is followed:
 - ◆ Calculate the additional revenues that National Grid would receive if the incremental capacity associated with this price step was released
 - ◆ Calculate the NPV of the incremental revenues
 - ◆ Compare the NPV to the estimated value of the project required to deliver this capacity
 - ◆ If the NPV \geq 50% of the project value, apply to Ofgem to designate this incremental capacity as obligated incremental entry capacity

Worked example

- ◆ The following example builds on that given in the QSEC briefings and illustrates an assessment of incremental capacity at step P3 in quarter 3 (this being the first quarter with incremental demand)
- ◆ The example has been extended to illustrate the effect of different bid stacks on the clearing price
 - ◆ The clearing price is defined by the lowest price step at which demand is less than or equal to the quantity being assessed: in this example, 130
 - ◆ Depending on the pattern of bids, prices can therefore clear at any price step between P0 and P20

Example 1: Clearing prices between P1 and P3

Available	Price Step	Price	Q3	Q4	Q5	Q9
150			120	120	110	100
140			120	120	110	100
130	P3	0.04	130	130	120	100
120	P2	0.03	135	135	120	110
110	P1	0.02	140	135	130	120
100	P0	0.01	145	140	131	131

This is the quantity being tested for incremental release

Clearing price ¹	P3	P3	P1	P1
Clearing volume	130	130	130	120

1. The clearing price is the lowest step at which the quantity bid for is less than or equal to 130

Example 2: Clearing prices higher than P3

Available	Price Step	Price	Q3	Q4	Q5	Q9
150	P5	0.06	120	130	130	120
140	P4	0.05	120	135	131	131
130	P3	0.04	130	135	131	131
120	P2	0.03	135	135	131	131
110	P1	0.02	140	135	131	131
100	P0	0.01	145	140	131	131

Clearing price ¹	P3	P5	P5	P5
Clearing volume	130	130	130	120

1. The clearing price is the lowest step at which the quantity bid for is less than or equal to 130

Example 3: Clearing prices at P0

Available	Price Step	Price	Q3	Q4	Q5	Q9
150	P5	0.06	120	120	120	110
140	P4	0.05	120	120	120	110
130	P3	0.04	130	120	120	110
120	P2	0.03	135	120	120	110
110	P1	0.02	140	120	120	110
100	P0	0.01	145	130	130	120

Clearing price ¹	P3	P0	P0	P0
Clearing volume	130	130	130	120

1. The clearing price is the lowest step at which the quantity bid for is less than or equal to 130

Other Comments

- ◆ If the NPV test was not passed at step 3, step 2 would be assessed
 - ◆ If the NPV test was then passed at step 2, this is the level of incremental capacity that would be released
- ◆ If the NPV test was passed at step 3, the process would move to the highest step in the next quarter
 - ◆ If the NPV was passed at a higher step in a subsequent quarter, this would be treated as a separate releases of obligate incremental entry capacity