

Locational BSUoS

TCMF

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Background

- ◆ Constraint costs increased from £70m in 2007/08 to £260m 08/09 and £234m 2009/10 (forecast July09)
- ◆ Ofgem wrote to National Grid requesting an urgent review
- ◆ National Grid consulted on locational BSUoS March 2009
- ◆ Proposal submitted 22nd May 2009
- ◆ National Grid withdraw proposal to allow further analysis at request of Ofgem

Summary of results

- ◆ Locational BSUoS signals the cost of constraints to generators so they can factor into despatch decisions
- ◆ This changes the unconstrained merit order leading to a reduction in constraints
- ◆ ‘Wholesale’ price generally reduces
 - ◆ heavily sensitive to merit order assumptions, slope of production
 - ◆ Fixed cost recovery issues – how are these included, how do peaking units recover costs?
 - ◆ Generator behaviour an important factor
- ◆ Users can still exercise market power, but to a lesser degree
- ◆ Main revenue flow from non Balancing Service providers
- ◆ Locational BSUoS has the desired effect on constraints, but should there be a hedge ?

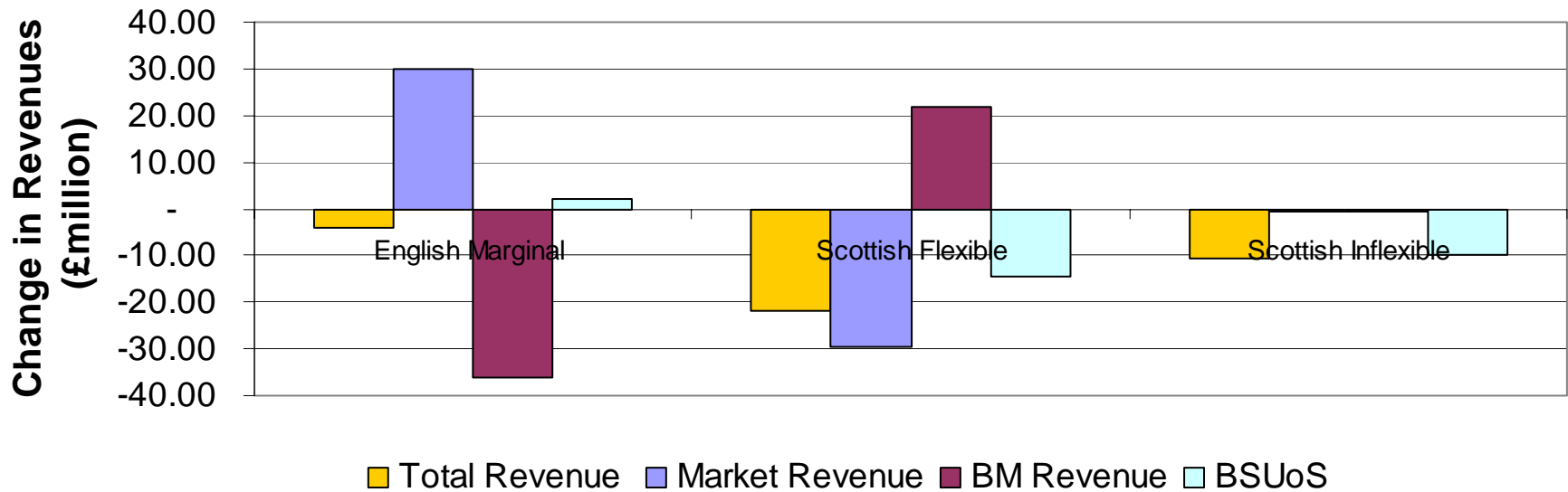
The model

- ◆ Constrained and unconstrained analysis using simple network model.
- ◆ Locational BSUoS calculated on a period basis as the difference between constraints on a compliant and non compliant system
- ◆ Locational BSUoS fed into the pricing model to change the costs of all generation by period
- ◆ Ranking order based on marginal costs, but also considered marginal plus fixed cost
- ◆ Fixed cost recovery changes with load factor
- ◆ Wholesale cost is a reference not a forecast, calculated as (period demand * marginal cost) or (period demand * marginal plus fixed cost)

Results

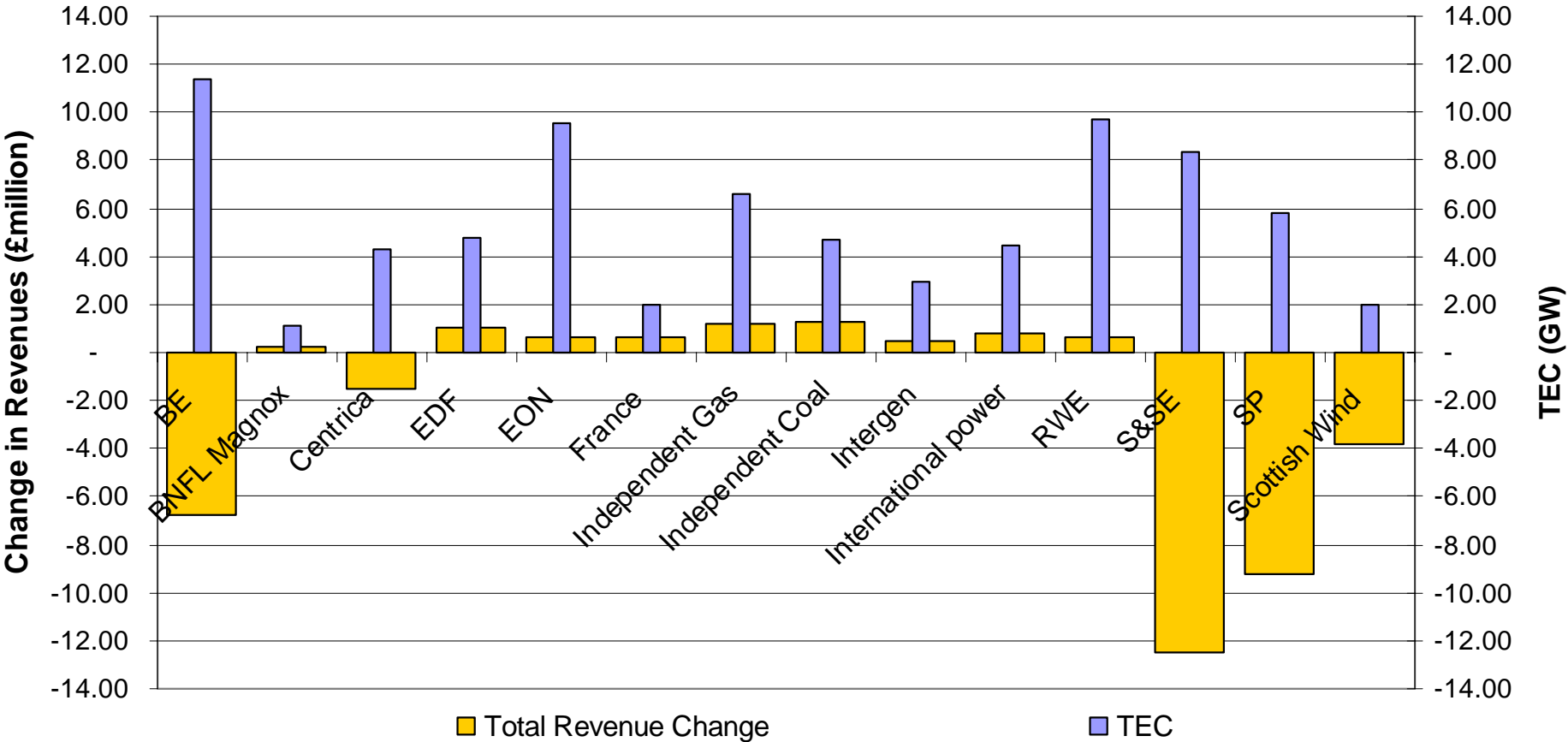
	Study	Unconstrained ranking	Offer price	Constraint cost £m/yr	Market cost	Total Market cost £bn/yr
1	No LocBSUoS / 2200	Marginal	Fixed +Marginal	297	Marginal (F+M)	17,296 (37,976)
Marginal						
2	No LocBSUoS / 2200	Marginal	Marginal	58	Marginal	17,057
3	No LocBSUoS / 3200	Marginal	Marginal	7	Marginal	17,006
4.1	LocBSUoS / 2200	Marginal	Marginal	22	Marginal	17,014
4.2	LocBSUoS / 2200	Marginal	Marginal	45	Marginal	17,041
Fixed + Marginal						
5	No LocBSUoS / 2200	Fixed+ Marginal	Fixed+ Marginal	173	Fixed+ Marginal	36,384
6	No LocBSUoS / 3200	Fixed+ Marginal	Fixed+ Marginal	22	Fixed+ Marginal	36,977
7.1	LocBSUoS / 2200	Fixed+ Marginal	Fixed+ Marginal	22	Fixed+ Marginal	37,871
7.2	LocBSUoS / 2200	Fixed+ Marginal	Fixed+ Marginal	24	Fixed+ Marginal	36,890

Effect on Different Generators

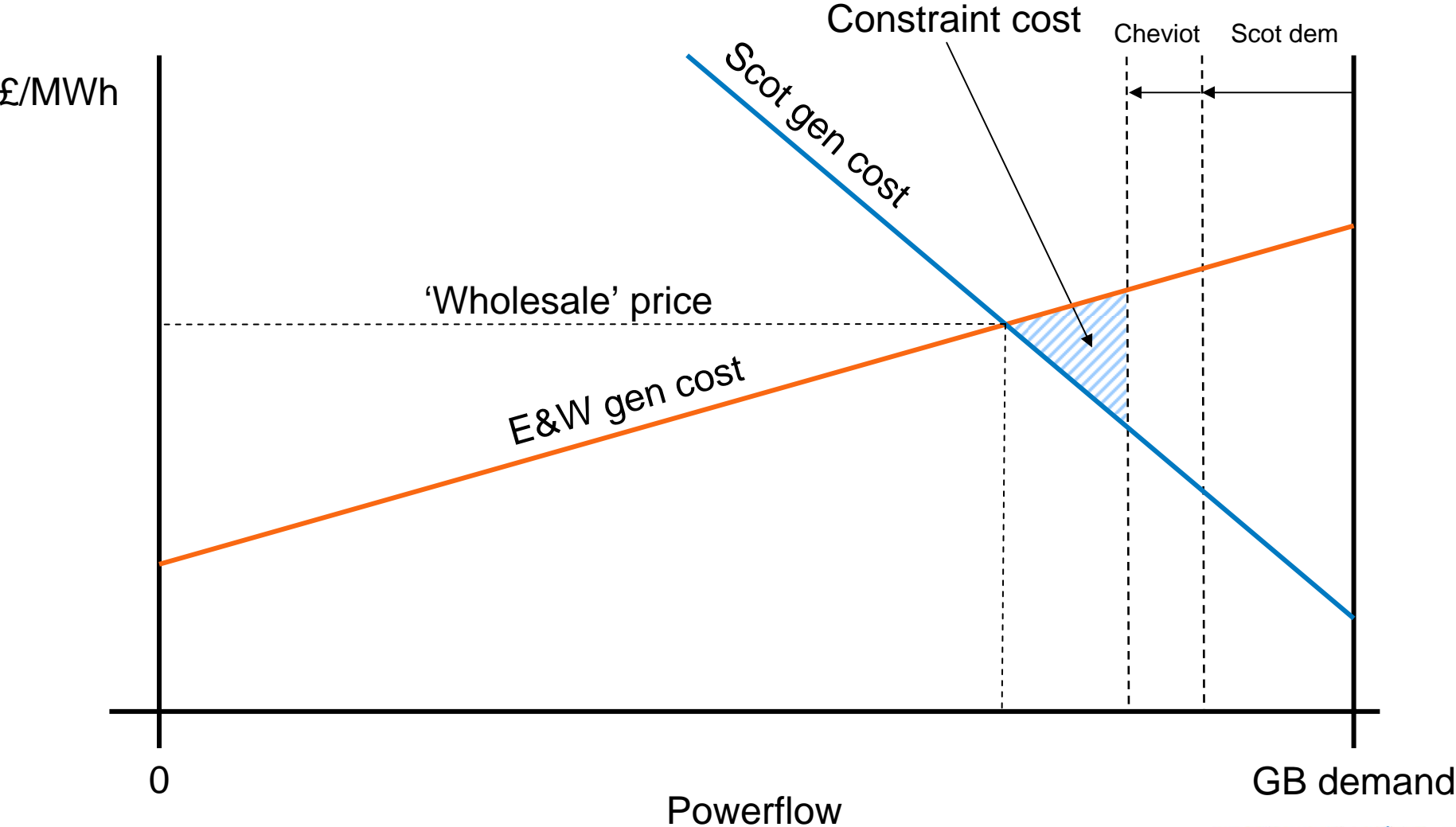


Generator	Marginal units in England	Flexible units in Scotland	Inflexible units in Scotland
Merit Position	Improves	Worsens	Neutral
Unconstrained Running	Increases	Decreases	Neutral
Constrained Running	Already running so less offers accepted	Is running less in unconstrained so is bid off less	Neutral
BSUoS	Pays less	Pays more	Pays more

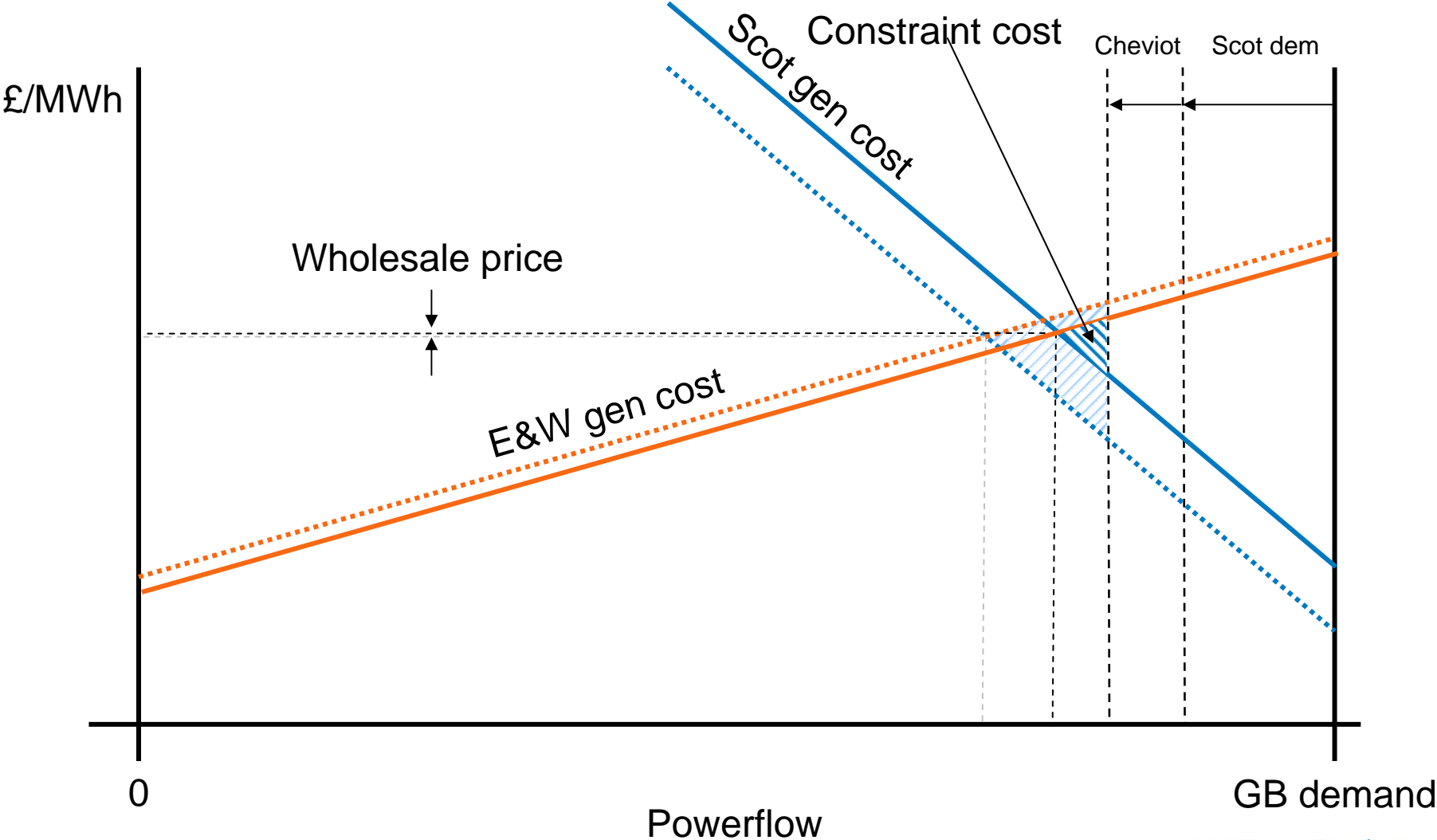
Change in Generators' Total Revenue



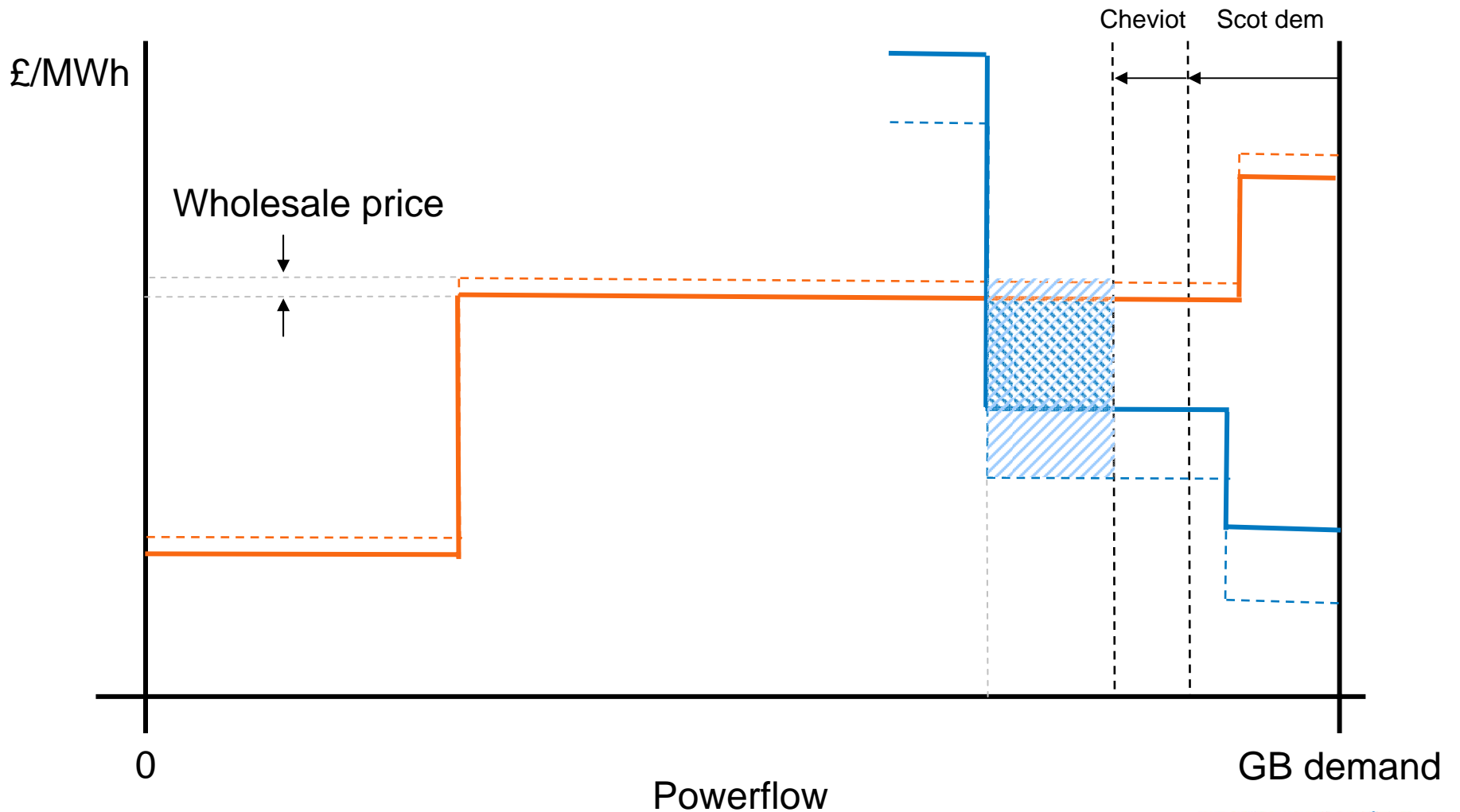
Stylised example – effect of locational BSUoS



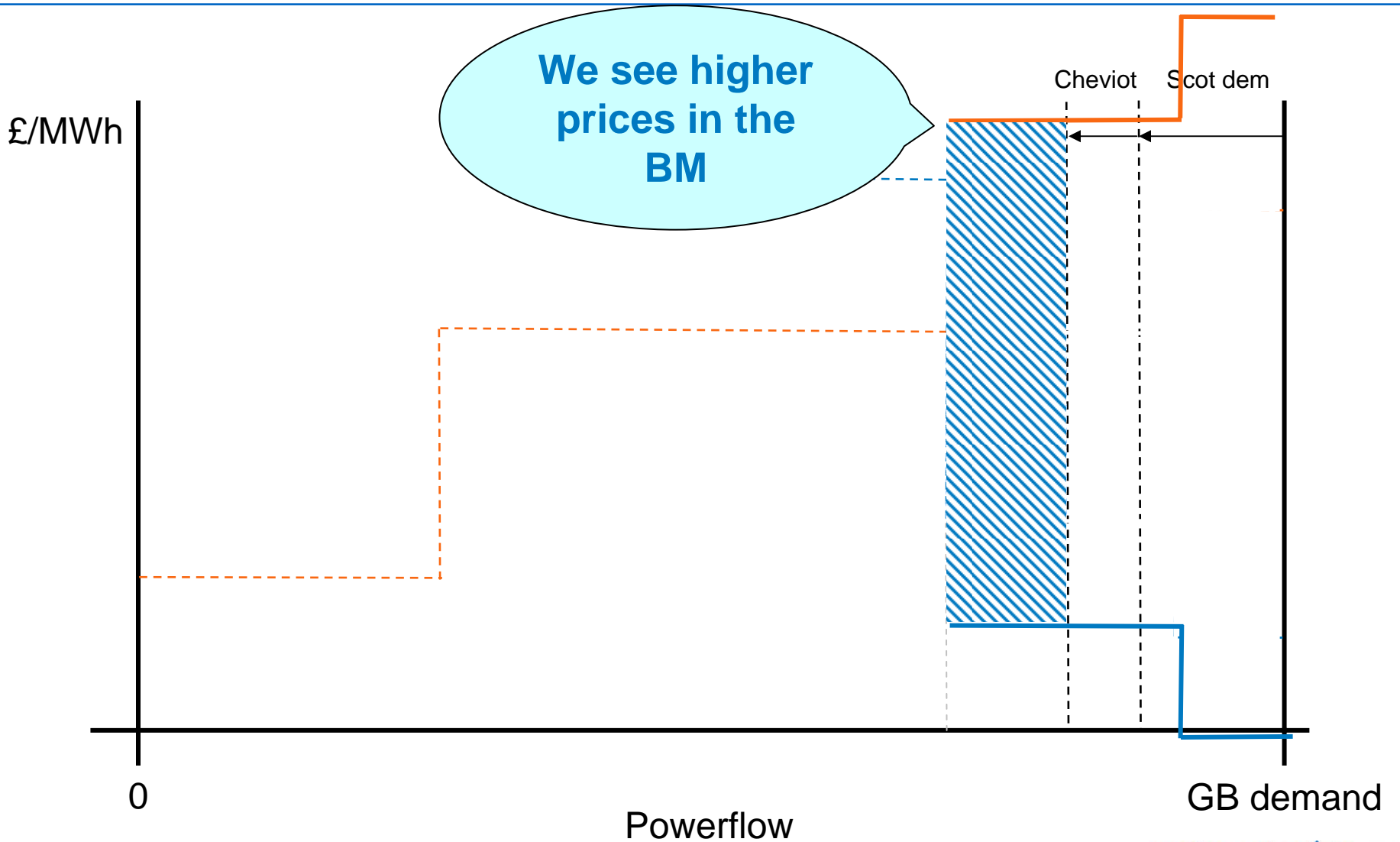
Stylised example without locational BSUsoS



Analysis results from the model - marginal



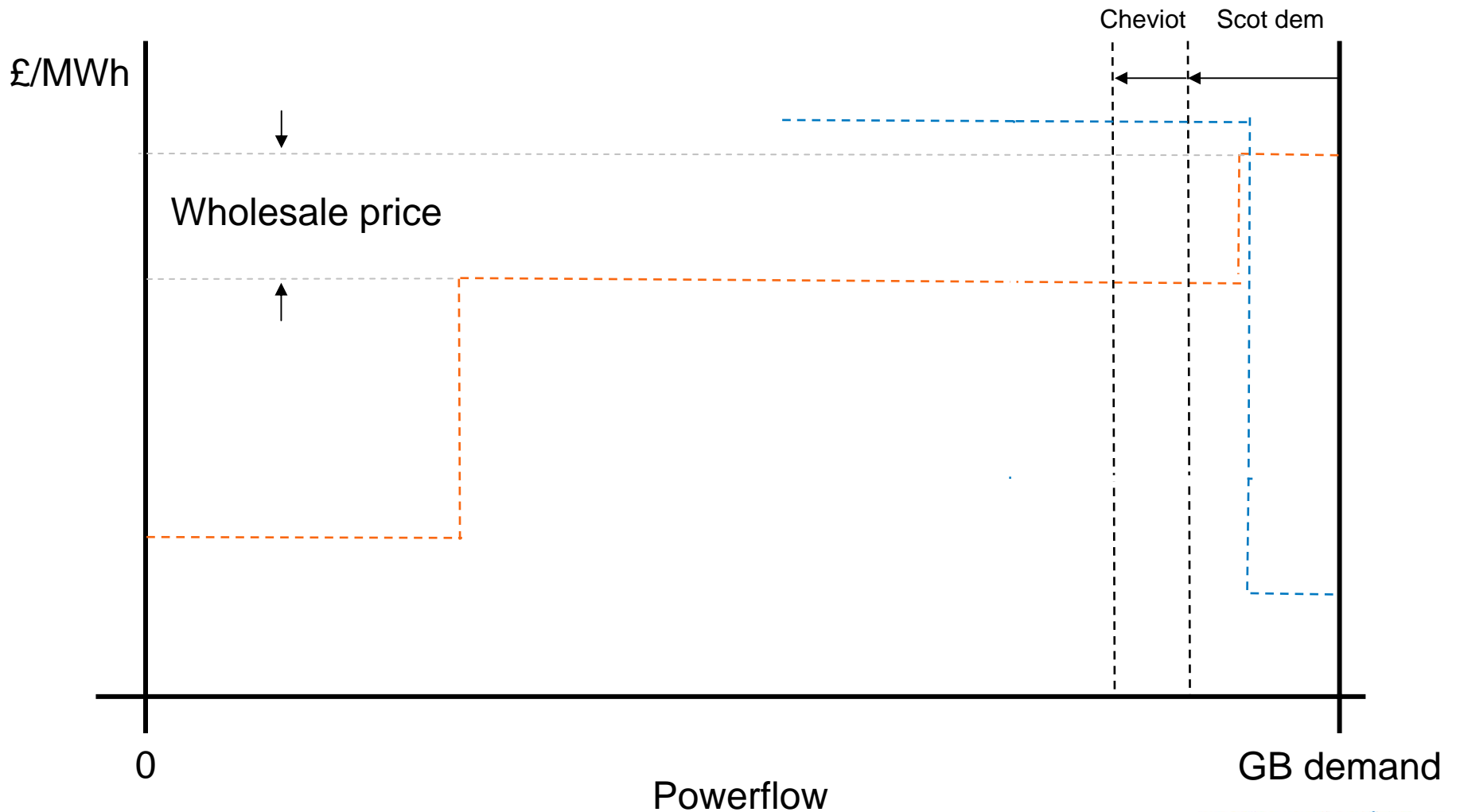
Analysis results – marginal- effect of BM



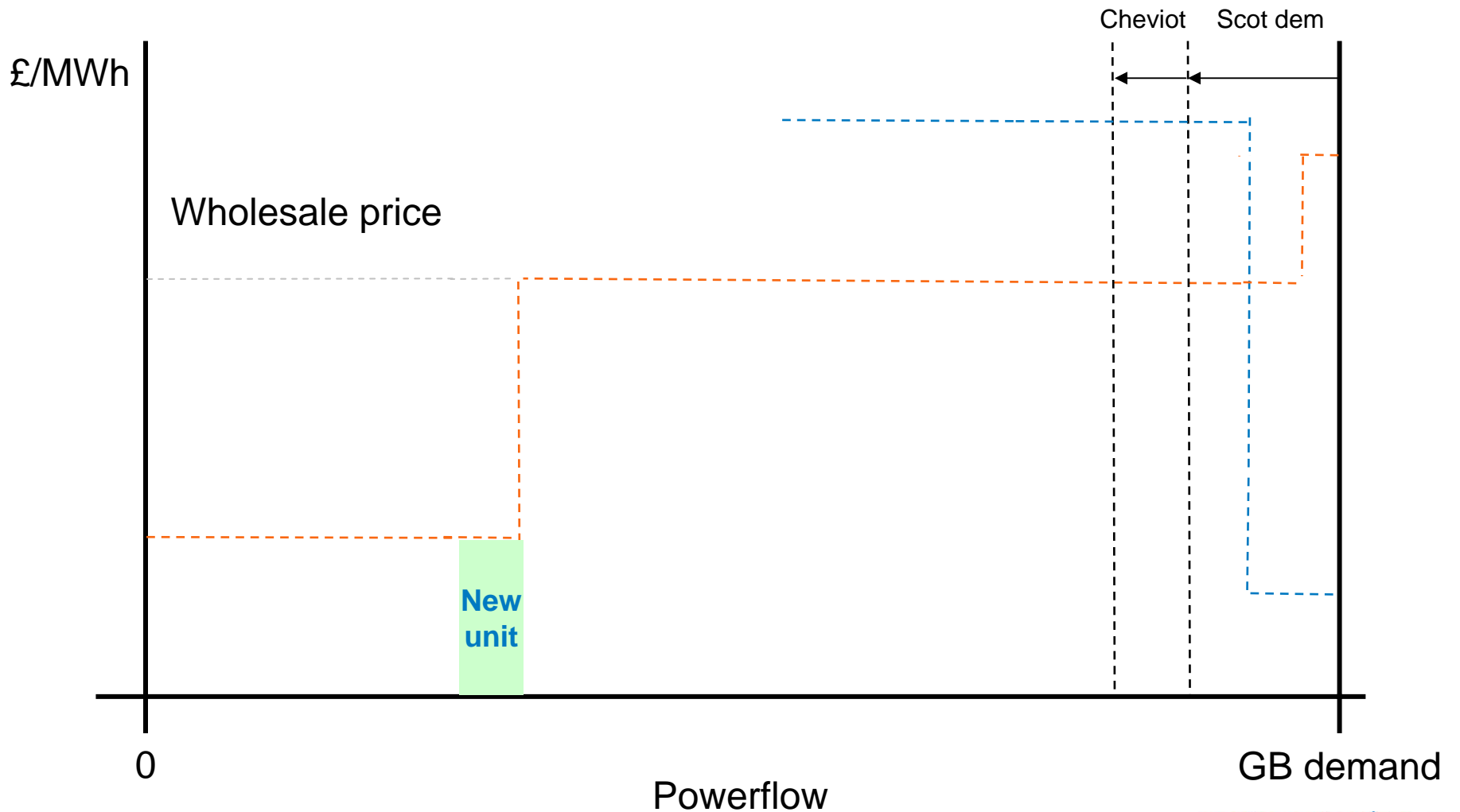
Sensitivity

	Study	Unconstrained ranking	Offer price	Constraint cost £m/yr	Market cost	Total Market cost £bn/yr
1	No LocBSUoS / 2200	Marginal	Fixed + Marginal	297	Marginal	17,296 (37,976)
Marginal						
2	No LocBSUoS / 2200	Marginal	Marginal	58	Marginal	17,057
3	No LocBSUoS / 3200	Marginal	Marginal	7	Marginal	17,006
4.1	LocBSUoS / 2200	Marginal	Marginal	22	Marginal	17,014
4.2	LocBSUoS / 2200	Marginal	Marginal	45	Marginal	17,041
Closure in Scotland						
8	No LocBSUoS / 2200	Marginal	Marginal	23	Marginal	17,194
9	No LocBSUoS / 3200	Marginal	Marginal	2	Marginal	17,173
10.1	LocBSUoS / 2200	Marginal	Marginal	17	Marginal	17,187
10.1	LocBSUoS / 2200	Marginal	Marginal	7	Marginal	17,174

Analysis results: Closure in Scotland



Analysis results: Closure in Scotland & market adjustment in E&W



Summary

- ◆ Locational BSUoS reduces the cost of constraints
- ◆ ‘Wholesale’ price change minimal
 - ◆ Providing correct signals
 - ◆ Capacity effects are a market issue
- ◆ Net flow of revenue from non Balancing Service providers to those who do provide Balancing Services behind the non compliant boundary
- ◆ Locational BSUoS has the desired effect on constraints, but should there be a hedge ?
 - ◆ Optional arrangements for information to provide for charge certainty ?

Questions