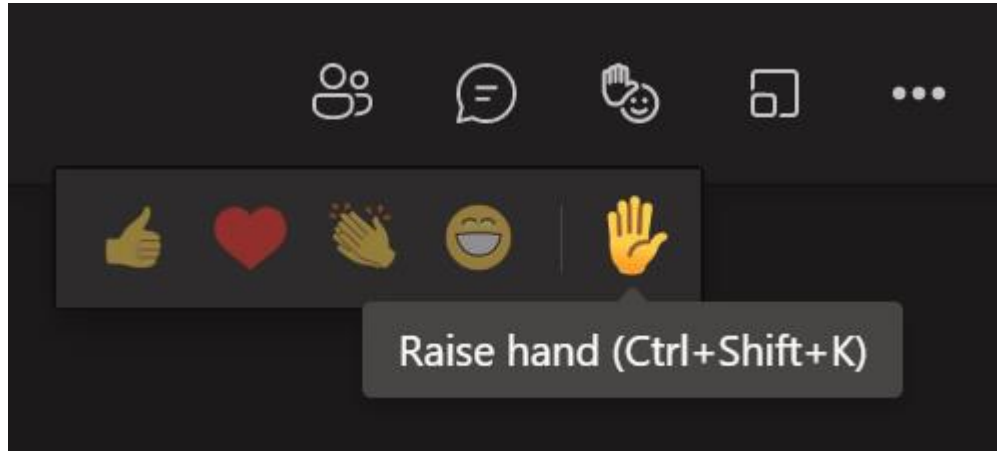


Issue 105 Digital Meeting Etiquette

- Welcome to the Issue 105 meeting 2 – we'll start shortly
- No video please to conserve bandwidth
- Please stay on mute unless you need to talk – use the **Raise hand** feature in the Menu bar in Microsoft Teams if you want to speak, or use the **Meeting chat**



- Lots of us are working remotely – be mindful of background noise and connection speeds

Slido Guidance

- In order to make our Workgroups more engaging and to ensure that all participants' voices are heard we've started using the Slido plug-in for MS Power Point.
- Everyone should be able to vote and answer questions live during the presentation using Slido

Requirements:

- Internet access
- Web browser
- Participants can join at slido.com with **#2213691**

Joining as a participant?

Enter code here



ELEXION

**Issue 105 'Further considerations
following implementation of BSC
Modification P448'**

Meeting 2

16 February 2023

Meeting Agenda

Objectives for this meeting:

- Decide whether a Code change should be recommended to address the unintended impacts to cash-out prices following the implementation of P448
- Obtain Workgroup views on how the P448 solution interacts with Gas Operating Margins contracts
- Introduce topic on Generator behaviour and ‘Good Industry Practice’ following implementation of P448 and obtain initial Workgroup views
- Consider and agree next steps

Agenda Item	Lead
1. Welcome and meeting objectives	Keren Kelly (Elexon) – Chair
2. Unintended impacts to cash-out prices	Simon Dickie (Elexon) - Design Authority
3. Workgroup discussion	Workgroup
4. P448 interaction with Gas Operating Margins Contracts	John Lucas (Elexon) – Design Authority
5. Workgroup Discussion	Workgroup
6. Generator behavior and ‘Good Industry Practice’?	John Lucas
7. Workgroup Discussion	Workgroup
8. Next steps	Kayleigh Neal (Elexon) – Lead Analyst
9. AOB and Meeting close	Keren Kelly



UNINTENDED IMPACTS TO CASH- OUT PRICES

Issue 105 Cash Out Price

The P448 solution will add accepted Bids into settlement via the BSCP18 process in order to ensure that there is no imbalance associated with the stage 2+ network gas supply emergency for qualifying BM units.

P448 wanted this issue group to look at the unintended impact on the cashout price, which can be addressed by considering the questions

1. Should the Bid volumes proposed in P448 be included in the stack to calculate the cash out price?

2. What should the bid volumes be priced at?

Scenarios

In order to look more closely at the impact, we have some scenarios to consider with different accept bid pricing variants.

Market Conditions

- Sudden Curtailment
- Rising Market
- Short
- Long

Bid Pricing

- Reasonable costs
- High price
- Bids removed from Stack
- Market Index Price (MIP)

Assumptions

- The accepted bid volumes will be greater than the NGESO actions to compensate
- Not all actions to cover the curtailment will be system flagged
- It is a best guess at the kind of situations we may see and we can't look at every possible outcome

Issue 105 Cash Out Price

Scenario 1: Short Market / Sudden Curtailment

14/12/2022 – SP28



290MWh £695
530MWh £475
630MWh £467

-690MWh £295
-130MWh £150

Taken from a short SP last December.
Simplified for this example

NIV 630MWh
Cash out **£467**
MIP £416

P448



1,200MWh £7,500 
350MWh £6,000 
450MWh £4,500
290MWh £695
530MWh £475
630MWh £467

-690MWh £295
-2,100MWh £250
-130MWh £150

Bid volume added as well as expensive balancing actions as per the existing P448 solution. No system flag retained as there are more expensive non flagged volumes

NIV 530MWh
Cash out **£467**
MIP £416

P448 Bids priced high



1,200MWh £7,500 
350MWh £6,000 
450MWh £4,500
290MWh £695
530MWh £475
630MWh £467

-2,100MWh £6000
-690MWh £295
-130MWh £150

As it is a short market and the expensive balancing actions cancel out the P448 bids, there is no change to the cash out price

NIV 530MWh
Cash out **£467**
MIP £416

P448 Bids not in stack



1,200MWh £7,500 
350MWh £6,000 
450MWh £4,500
290MWh £695
530MWh £475
630MWh £467

-690MWh £295
-130MWh £150

Now the market has gone shorter, so the more expensive actions are not NIV tagged out, making the cash out price expensive

NIV 2,630MWh
Cash out **£4,500**
MIP £416



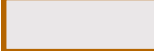

P448 using MIP

1,200MWh £7,500 
350MWh £6,000 
450MWh £4,500
290MWh £695
530MWh £475
630MWh £467

-2,100MWh £416
-690MWh £295
-130MWh £150

As it is a short market and the expensive balancing actions cancel out the P448 bids, there is no change to the cash out price



NIV 530MWh
Cash out **£467**
MIP £416

	Normal action
	Expensive action due to gas curtailment
	P448 Bids
	System flag

Issue 105 Cash Out Price

Scenario 2: Long Market / Sudden Curtailment





20/12/2022 – SP25

340MWh £320	
185MWh £285	
-15MWh £136	
-460MWh £113	
-40MWh £0	
-140MWh -£20	

Taken from a long SP last December.
Simplified for this example





NIV -130MWh
Cash out **£113**
MIP £184

P448

1,200MWh £7,500	
350MWh £6,000	
450MWh £4,500	
340MWh £320	
185MWh £285	
-2,100MWh £250	
-15MWh £136	
-460MWh £113	
-40MWh £0	
-140MWh -£20	





Bid volume added as well as expensive balancing actions as per the existing P448 solution. There is no system flag as we have more expensive non flagged volumes, so the price changes
NIV -230MWh
Cash out **£250**
MIP £184

P448 Bids priced high

1,200MWh £7,500 	
350MWh £6,000 	
450MWh £4,500	
340MWh £320	
185MWh £285	
-2,100MWh £6000	
-15MWh £136	
-460MWh £113	
-40MWh £0 	
-140MWh -£20 	





Changing the price to a high one has an effect and we get a high cashout price due to the system flag being removed
NIV -230MWh
Cash out **£6,000**
MIP £184

P448 Bids not in stack

1,200MWh £7,500	
350MWh £6,000	
450MWh £4,500	
340MWh £320	
185MWh £285	
-15MWh £136	
-460MWh £113	
-40MWh £0	
-140MWh -£20	

The market has become short without the P448 bids. Therefore the expensive actions will be used and the cashout is also high
NIV 1,870MWh
Cash out **£4,500**
MIP £184

P448 MIP

1,200MWh £7,500	
350MWh £6,000	
450MWh £4,500	
340MWh £320	
185MWh £285	
-2,100MWh £184	
-15MWh £136	
-460MWh £113	
-40MWh £0	
-140MWh -£20	

Changing the price to the MIP has a small effect and we get a normal cashout price due to the system flag being removed
NIV -230MWh
Cash out **£184**
MIP £184

Normal action

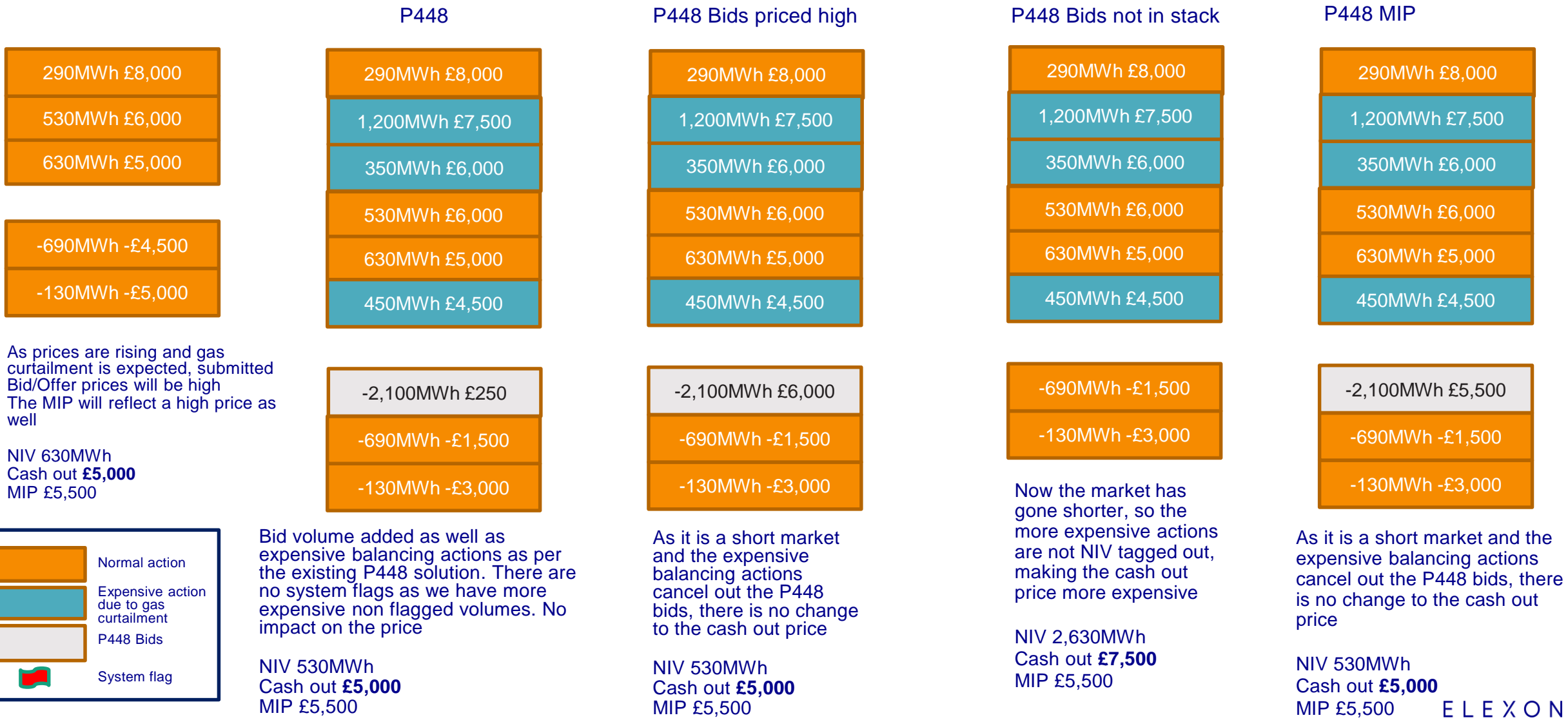
Expensive action due to gas curtailment

P448 Bids

System flag

Issue 105 Cash Out Price

Scenario 3: Short / Rising Market



Issue 105 Cash Out Price

Scenario 4: Long / Rising Market

	P448	P448 Bids priced high	P448 Bids not in stack	P448 MIP
	<div><div>340MWh £8,000</div><div>185MWh £5,500</div></div>	<div><div>340MWh £8,000</div><div>1,200MWh £7,500</div><div>350MWh £6,500</div><div>185MWh £5,500</div><div>450MWh £4,500</div></div>	<div><div>340MWh £8,000</div><div>1,200MWh £7,500</div><div>350MWh £6,500</div><div>185MWh £5,500</div><div>450MWh £4,500</div></div>	<div><div>340MWh £8,000</div><div>1,200MWh £7,500</div><div>350MWh £6,500</div><div>185MWh £5,500</div><div>450MWh £4,500</div></div>
	<div><div>-15MWh £136</div><div>-460MWh £113</div><div>-40MWh -£0</div><div>-140MWh -£20</div></div>	<div><div>-2,100MWh £250</div><div>-15MWh £136</div><div>-460MWh £113</div><div>-40MWh £0</div><div>-140MWh -£20</div></div>	<div><div>-15MWh £136</div><div>-460MWh £113</div><div>-40MWh £0</div><div>-140MWh -£20</div></div>	<div><div>-2,100MWh £5,500</div><div>-15MWh £136</div><div>-460MWh £113</div><div>-40MWh £0</div><div>-140MWh -£20</div></div>

As prices are rising and gas curtailment is expected, submitted Bid/Offer prices will be high
The MIP will reflect a high price as well

NIV -130MWh
Cash out **£113**
MIP £5,500

Bid volume added as well as expensive balancing actions as per the existing P448 solution. There is no system flag as we have more expensive non flagged volumes, so the price changes
NIV -230MWh
Cash out **£250**
MIP £5,500

Changing the price to a high one has an effect and we get a high cashout price due to the system flag being removed
NIV -230MWh
Cash out **£6,000**
MIP £5,500

The market has become short without the P448 bids. Therefore the expensive actions will be used and the cashout is high
NIV 1,870MWh
Cash out **£6,500**
MIP £5,500

Changing the price to the MIP has an effect and we get a cashout price at the MIP due to the system flag being removed
NIV -230MWh
Cash out **£5,500**
MIP £5,500

Normal action

Expensive action due to gas curtailment

P448 Bids

System flag

Issue 105 Cash Out Price

Summary

Cashout price under different scenarios

	P448	P448 Priced High	P448 Not in stack	P448 using MIP
Short/Sudden curtailment	Normal	Normal	High	Normal
Long/Sudden curtailment	Normal	High	High	Normal
Short/Rising Market	High	High	High	High
Long/Rising Market	Normal	High	High	High

- 1. Should the Bid volumes proposed in P448 be included in the stack to calculate the cash out price?
- 2. What should the bid volumes be priced at?



P448 INTERACTION WITH GAS OPERATING MARGINS (OM) CONTRACTS

Gas Operating Margins (OM) Contracts

The Gas System Operator (GSO) uses OM contracts to maintain gas pressure in the National Transmission System (NTS) in exceptional circumstances, such as system stress.

The aim is to allow normal market operation to continue, and hopefully avoid declaring an Emergency.

The P448 Workgroup considered (but was unable to answer) questions about the interaction of OM contracts and subsequent Load Shedding. For example:

1. Generator is instructed to reduce gas offtake (pre-Emergency, under their OM contract)
2. Emergency is subsequently declared, and Load Shedding begins
3. If the GSO doesn't want the generator to increase its offtake again, what is the mechanism for ensuring this:
 - Do they continue to be instructed (and paid) under the OM contract?
 - Do they receive a Load Shedding instruction (making them eligible for protection under P448)?
 - Or is there a risk that they are protected by neither their contract nor P448?

The P448 Workgroup did not have the knowledge of the gas arrangements needed to answer this.



GENERATOR BEHAVIOUR

The P448 / GC0160 solution envisages that:

- Generators may be able to trade out the positions they had at the point of curtailment; and
- To the extent they do this, they should reduce their Physical Notifications accordingly.

The P448 solution does not require Generators to trade out their positions:

- The aim of P448 is to prevent Generators being forced into insolvency as a result of not being able to deliver their contracted position
- A requirement on them to trade out at any price could defeat that purpose

But if generators make no attempt to trade out their position, the costs are picked up by consumers (through BSUoS)

The BSC Panel has asked the Issue Group to consider whether there should be incentives on Generators to trade out their positions where possible. For example:

- Is it possible to formulate an appropriate obligation (based on “reasonable endeavours” or “Good Industry Practice”)?
- Is there some other way to incentivise generators to behave in a way that reduces costs for consumers?



NEXT STEPS

Progression plan

Event	Date
Issue raised	22 December 2022
Workgroup Meeting 1	24 January 2023
Distribution of Meeting 1 summary and actions	30 January 2023
Workgroup meeting 2	16 February 2023
Distribution of Meeting 2 summary and actions	23 February 2023
Workgroup meeting 3	3 March 2023, W/C 6 March or W/C 13 March 2023
Workgroup meeting 4	W/C 20 March 2023 or W/C 27 March 2023
Present Issue Report to Panel	April / May 2023

Workgroup Meeting 3
Slido: #2213691

AOB

ELEXON

THANK YOU

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16 February 2023