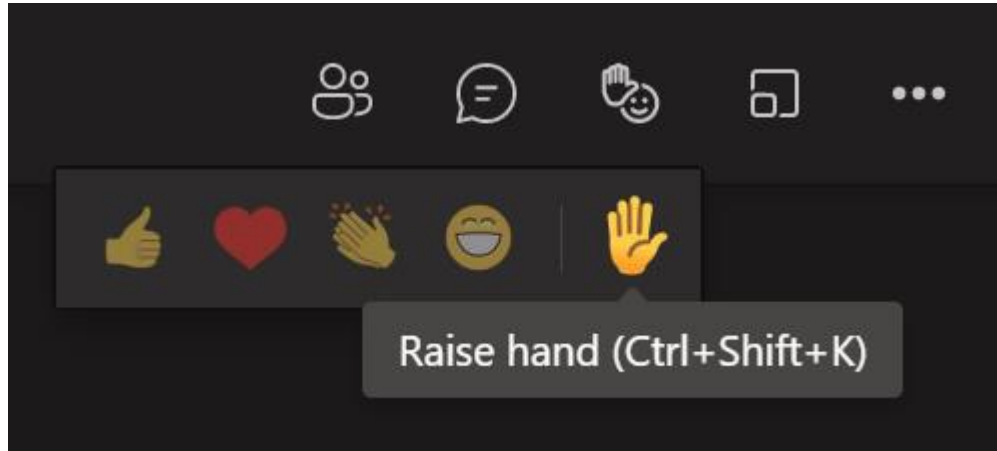


Issue 105 Digital Meeting Etiquette

- Welcome to the Issue 105 meeting 5 – 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

ELEXION

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

Meeting 5

31 May 2023

Meeting Objectives and Agenda

- Decide whether a Code Change should be recommended to address the unintended impacts to cash-out prices following the implementation of P448
- Review Terms of Reference and confirm Workgroup recommendations
- Decide whether the P448 solution should be time limited
- Consider and agree next steps

Agenda Item	Lead
1. Welcome and meeting objectives	Ivar Macsween (Elexon) – Chair
2. Meeting 4 recap	Kayleigh Neal (Elexon) – Lead Analyst
3. Unintended impacts to cash-out prices	Simon Dickie (Elexon) – Market Design
4. Workgroup discussion	Workgroup
5. Time limiting the P448 solution	John Lucas (Elexon) – Market Design
6. Review of ToR and Workgroup recommendations	Kayleigh Neal
7. Workgroup discussion	Workgroup
8. Next steps	Kayleigh Neal
9. AOB and Meeting close	Ivar Macsween

Meeting 4: Recap

- Unintended impacts to cash-out prices
- P448 guidance

No.	Action	Owner	Outcome
1.	Circulate a list of assumptions relating to a potential timeline of events during a Stage 2+ gas supply emergency where the market is long. The Workgroup will have 5 WD to provide feedback prior to the next Workgroup meeting.	Elexon	Actioned for WG5. Propose to close.
2.	Update the meeting slides to confirm that the cash-out scenarios are possible plausible scenarios, not what we think is likely to happen.	Elexon	Actioned for WG5. Propose to close.



UNINTENDED IMPACTS TO CASH- OUT PRICES

Issue 105 Cash Out Price Assumptions

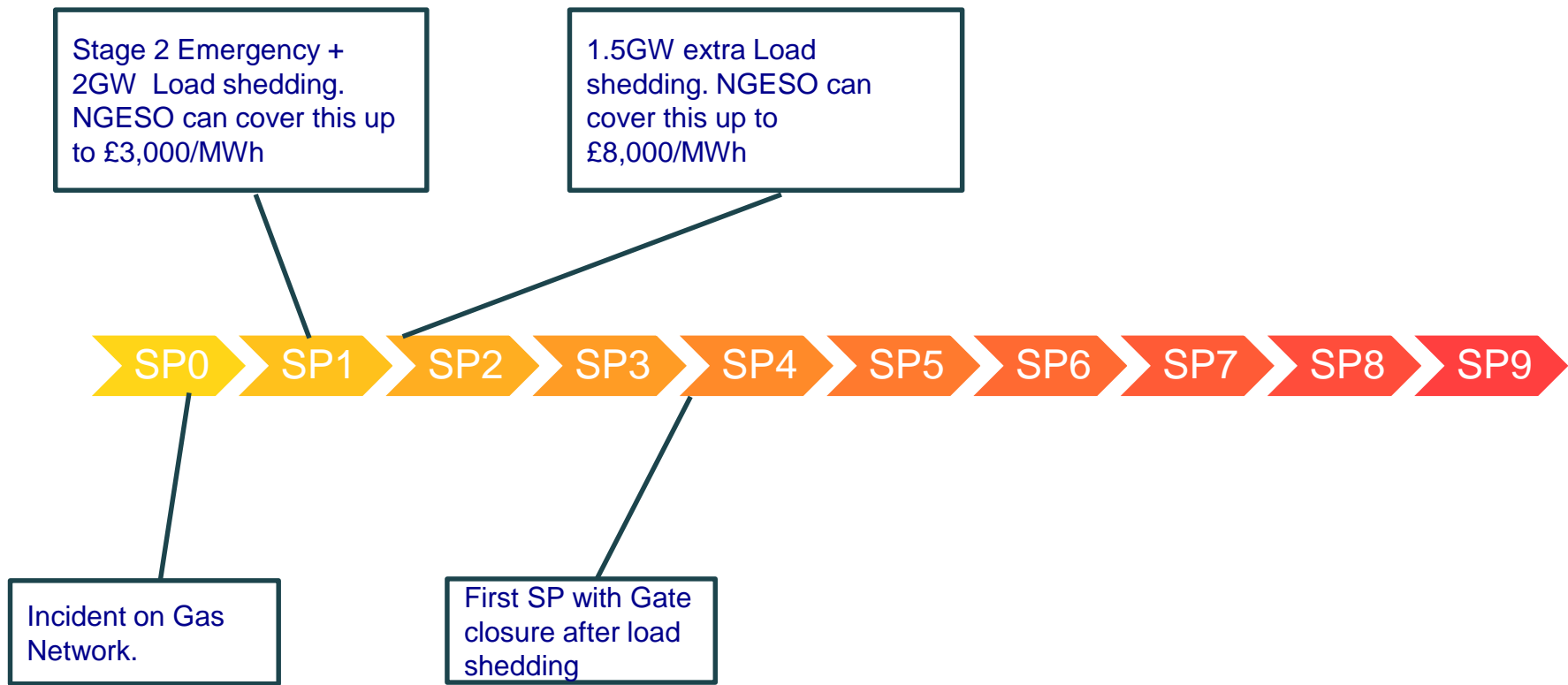
In addition to the assumptions made previously, these are our assumptions for the Long market scenarios

Assumptions
Renewable energy <ul style="list-style-type: none">Long Market will have plenty of renewable energy throughoutLong flipping to short will start with plenty of renewable energy, but this will then become more scarce as environmental conditions change
During a gas curtailment submitted Bid prices (non P448 bids) will be in line with normal bid prices
If P448 bids are not included in the stack, then the market will be short regardless due to the actions taken to cover the curtailed gas generators
Prior to curtailment NGESO will be using bids from renewable and others to manage the long market. They may also be accepting offers for system constraint reasons
NGESO may respond to gas curtailment by undoing or not taking bids, before moving to taking offers

Issue 105 Cash Out Price – Long Market

Long Market – An issue on the Gas network but the Power market remains long throughout

This possible scenario looks at what *might* happen when there is an incident on the GB Gas network but the market stays long throughout



Issue 105 Cash Out Price – Long Market

SP1 – SP3

Party	Incentive with P448 bids	Incentive without P448 bids
BM generators	Bid into the BM at increased prices from SP4 onwards	Incentive to bid into the WM and BM from SP4 onwards
Party with short position	As cashout is normal, they are unlikely to look to trade out of their position with rising power prices	Cashout price not suppressed so attempt to trade out short position in SP4 onwards
Party with Long position	Look to trade out of their position as cashout is not expected to go high	Stay long as cashout will go high as NGESO attempt to cover the curtailment from SP4 onwards
Non BM Generator	Incentive to bid into the WM at high power prices, but may have fewer buyers due to cashout price expectations	Incentive to bid into WM from SP4 onwards as cashout is high
Curtailed Gas generator	May buy power if it is profitable for SP4 onwards	May buy power if it is profitable for SP4 onwards
Interconnector users	Prepare to import if available	Prepare to import if available
NGESO	Balance the market	Balance the market

- Plenty of renewable energy available across the network
- Offer prices will be normal as gate closure has already happened
- Gas prices will rise sharply
- Power prices will start to follow Gas prices upwards
- Gas generators will look to buy power intraday to reduce generation if profitable
- NGESO will look at importing via interconnectors
- Without the bids included, the market goes short

- P448 Bids in stack – Cashout suppressed at normal levels as the cashout price is taken from the Sell stack in a long market
- P448 bids removed from Stack – Cashout starts to rise due to the additional actions from NGESO in the Buy stack

Issue 105 Cash Out Price – Long Market

SP4 – SP?

Party	Incentive with P448 bids	Incentive without P448 bids
BM generators	Bid into the BM at increased prices	Incentivised to bid into the WM and BM due to high cashout and power prices.
Party with short position	As cashout is normal, they are unlikely to look to trade out of their position with rising power prices	They will look to trade out at any price lower than their expectation of the cashout price
Party with Long position	Look to trade out at as cashout is not expected to go high	Stay long and take the high cashout price as NGESO attempt to cover the curtailment
Non BM Generator	Incentive to bid into the WM at high power prices, but may have fewer buyers due to cashout price expectations	Continue to bid into the WM at high power prices
Curtailed Gas generator	May buy power if it is profitable	May buy power if it is profitable
Interconnector users	Prepare to import if available	Import power
NGESO	Balance the market	Balance the market, prepare to instruct Demand disconnection

- Renewables still available in abundance
- Offer prices will be attempting to target the price that NGESO will pay to keep the market going. This is likely to fluctuate for a few settlement periods
- Gas and Power prices start to settle
- The market is long, but without the bids, it will go short

- P448 Bids in stack – Cashout suppressed at normal levels as the cashout price is taken from the Sell stack in a long market
- P448 bids removed from Stack – Cashout will be high as per the examples from the short scenarios

Issue 105 Cash Out Price – Long Market

A few hours after the Stage 2 Emergency

Party	Incentive with P448 bids	Incentive without P448 bids
BM generators	Bid into the BM at increased prices	Already incentivised to bid into the WM and BM due to high cashout and power prices.
Party with short position	As cashout is normal, they are unlikely to look to trade out of their position with rising power prices	They will look to trade out at any price lower than their expectation of the cashout price
Party with Long position	Look to trade out at as cashout is not expected to go high	Stay long and take the high cashout price as NGESO attempt to cover the curtailment
Non BM Generator	Incentive to bid into the WM at high power prices, but may have fewer buyers due to cashout price expectations	Should already be active in the WM and incentivised to trade at the high power price
Curtailed Gas generator	May buy power if it is profitable	Protected from Cashout
Interconnector users	Prepare to import if available	Import power
NGESO	Balance the market	Balance the market, prepare to instruct Demand disconnection

- Renewables still available in abundance
- Offer prices will be more consistent targeting the price that NGESO will pay to keep the market going
- Gas and Power prices are settled
- The market is long, but without the bids, it will go short

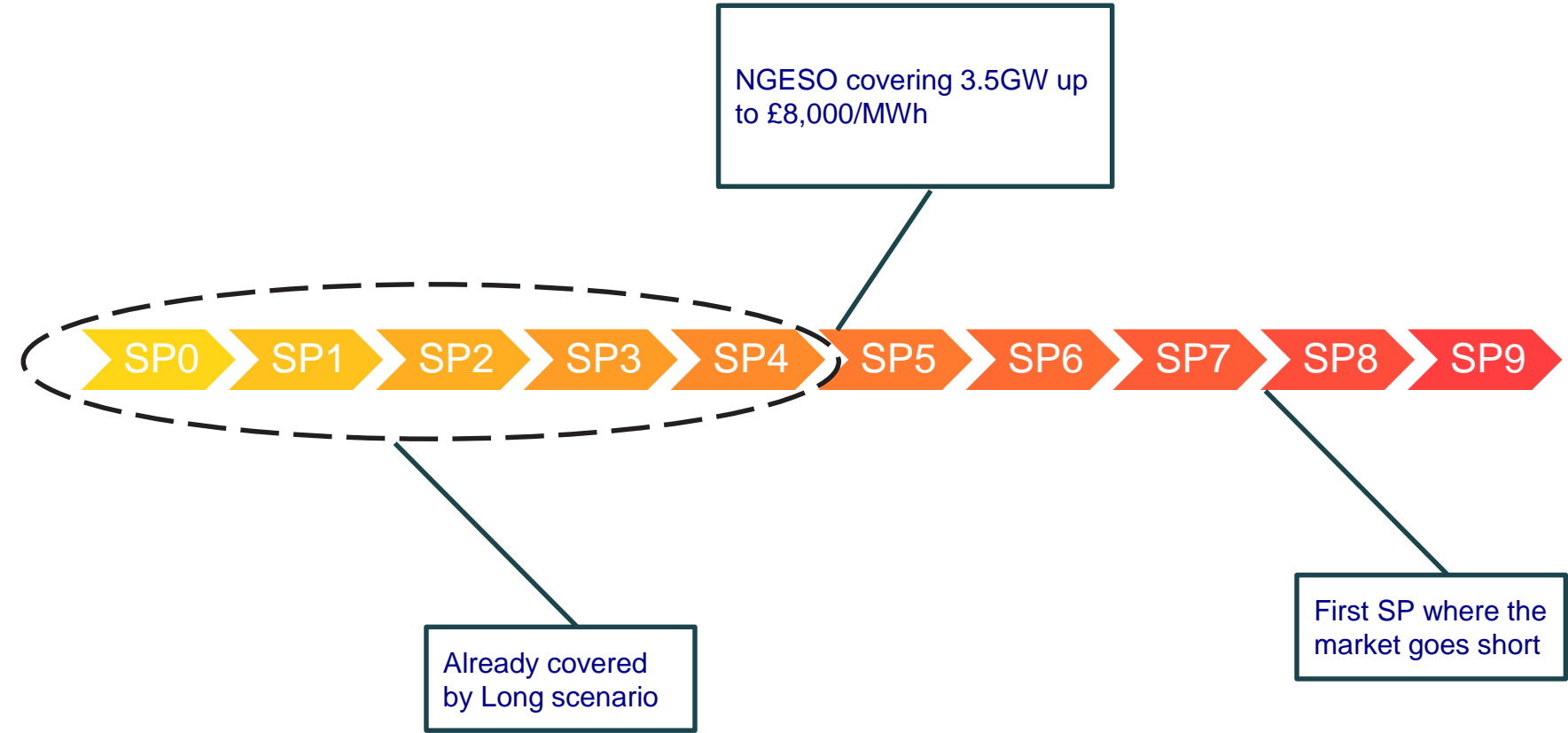
Cashout will stay at normal levels during a long market as it is taken from the sell stack. There may be a shortage of buyers as the cashout price is at an acceptable level and generation may not come online due to the signals being sent out during a long market. P448 supresses the price in this scenario and due to this the market may be unable to correct itself.

- P448 Bids in stack – Cashout supressed at normal levels as the cashout price is taken from the Sell stack in a long market
- P448 bids removed from Stack – Cashout will be high as per the examples from the short scenarios

Issue 105 Cash Out Price – Long Market flips to short

Long Market flipping to Short – An issue on the Gas network but the Power market remains long before going short

This possible scenario looks at what *might* happen when there is an incident on the GB Gas network and the market starts Long, but as the event progresses it flips to Short.



Issue 105 Cash Out Price – Long Market flips to short

SP5 – SP8

Party	Incentive with P448 bids	Incentive without P448 bids
BM generators	Already incentivised to bid into the WM and BM due to high power prices, but now incentivised to increase further	Already incentivised to bid into the WM and BM due to high cashout and power prices, but now incentivised to increase further
Party with short position	They will look to trade out from SP4 onwards at any price lower than their expectation of the cashout price	They will look to trade out from SP4 onwards at any price lower than their expectation of the cashout price
Party with Long position	Stay long as cashout will go higher as NGESO attempt to cover the curtailment from SP4 onwards	Stay long as cashout will go high as NGESO attempt to cover the curtailment from SP4 onwards
Non BM Generator	Should already be active in the WM as cashout is high before load shedding. Incentivised to increase prices	Should already be active in the WM as cashout is high before load shedding. Incentivised to increase prices
Curtailed Gas generator	May buy power if it is profitable for SP4 onwards	May buy power if it is profitable for SP4 onwards
Interconnector users	Prepare to import if available	Will be in use already due to high power prices if available to NGESO, but risk of providing nothing
NGESO	Balance the market, prepared for Demand disconnection	Balance the market, prepared for Demand disconnection

- Renewable generation forecasted to reduce in availability
- Offer prices will be attempting to target the price that NGESO will pay to keep the market going. This is likely to fluctuate for a few settlement periods
- Gas and Power prices start to settle
- The market is long, but without the bids, it will go short
- NGESO will look at importing via interconnectors
- Without the bids included, the market goes short

- P448 Bids in stack – Cashout suppressed at normal levels as the cashout price is taken from the Sell stack in a long market
- P448 bids removed from Stack – Cashout is already high as per the examples in the short scenarios

Issue 105 Cash Out Price – Long Market flips to short

SP8 – SP?

Party	Incentive with P448 bids	Incentive without P448 bids
BM generators	Already incentivised to bid into the WM and BM due to high cashout and power prices.	Already incentivised to bid into the WM and BM due to high cashout and power prices.
Party with short position	They will look to trade out at any price lower than their expectation of the cashout price	They will look to trade out at any price lower than their expectation of the cashout price
Party with Long position	Stay long and take the high cashout price as NGESO attempt to cover the curtailment	Stay long and take the high cashout price as NGESO attempt to cover the curtailment
Non BM Generator	Should already be active in the WM and incentivised to trade at the high power price	Should already be active in the WM and incentivised to trade at the high power price
Curtailed Gas generator	May buy power if it is profitable	May buy power if it is profitable
Interconnector users	Will be in use already due to high gas prices if available to NGESO, but risk of providing nothing	Will be in use already due to high gas prices if available to NGESO, but risk of providing nothing
NGESO	Balance the market, prepare to instruct Demand disconnection	Balance the market, prepare to instruct Demand disconnection

- The market is likely to be Short and without the bids, it goes even shorter
- Offer prices will be attempting to target the price that NGESO will pay to keep the market going. This is likely to fluctuate for a few settlement periods
- Gas and Power prices start to settle
- NGESO will look at importing via interconnectors
- NGESO may start to employ Demand Disconnection

- P448 Bids in stack – Cashout is high, but not up to £8,000 as it is suppressed, maybe £6,000
- P448 bids removed from Stack – Cashout moves towards £8,000

Issue 105 Cash Out Price – Long Market flips to short

A few hours after the Stage 2 Emergency

Party	Incentive with P448 bids	Incentive without P448 bids
BM generators	Already incentivised to bid into the WM and BM due to high cashout and power prices.	Already incentivised to bid into the WM and BM due to high cashout and power prices.
Party with short position	They will look to trade out at any price lower than their expectation of the cashout price	They will look to trade out at any price lower than their expectation of the cashout price
Party with Long position	Stay long and take the high cashout price as NGESO attempt to cover the curtailment	Stay long and take the high cashout price as NGESO attempt to cover the curtailment
Non BM Generator	Should already be active in the WM and incentivised to trade at the high power price	Should already be active in the WM and incentivised to trade at the high power price
Curtailed Gas generator	Protected from Cashout	Protected from Cashout
Interconnector users	Will be in use already due to high gas prices if available to NGESO, but risk of providing nothing	Will be in use already due to high gas prices if available to NGESO, but risk of providing nothing
NGESO	Balance the market, prepare to instruct Demand disconnection	Balance the market, prepare to instruct Demand disconnection

- Offer prices will be more consistent targeting the price that NGESO will pay to keep the market going
- Gas and Power prices are settled
- The market is likely to be Short and without the bids, it goes even shorter
- NIV tagging will make little difference as all Offers are around the same price
- High chance that NGESO use Demand Disconnection

Cashout will be suppressed initially due to being a Long market to start with
From SP8 onwards the cashout price will start to rise although not as fast as if there we not the P448 bids in the stack.
This will only have a limited effect and at a certain point, parties will be aligned in their Offer prices, so NIV tagging and hence P448 will not be very consequential in impacting the cashout price.

- P448 Bids in stack – Cashout not impacted by P448 bids, will settle at a consistent level, maybe £6,000
- P448 bids removed from Stack – Cashout settles around £6,000

Issue 105 Cash Out Price

Short

The impact of P448 on the cashout price is not as significant as we may have thought as offer prices become more accurate in regards to the price that NGESO will pay to balance during the gas curtailment

Long

The P448 bids suppress the cashout price by keeping the market Long throughout. This may lead to the market being unable to correct itself due to the signals being sent and short parties prepared to pay the suppressed cashout price than trade out of their position.

In the scenario where the market starts Long but then flips to Short, it will likely end up the same as the short market with a high cashout price and little difference between P448 bids being present or not.

Questions

Given that the impact of P448 on the cashout price is not as significant as we may have thought when the market is Short. Is a change to P448 needed if in a Long market the cashout is suppressed?

Does the workgroup think that a persistent Long market is a viable scenario and if so, should a change be made to P448?

Issue 105 Cash Out Price

Options

There are two aspects that P448 was designed to address

- Removing Imbalance charges from Curtailed Gas generators
- Recovering reasonable costs

Any change to P448 will need to make sure that it accounts for both of these aspects

If a change is recommended to the P448 solution, it will not be possible for Elexon systems to be changed in time for this winter, so a workaround will be required before an enduring solution can be implemented.

Option	Winter 23/24	Enduring
Use ABSVD volumes instead of Bids to prevent imbalance charges. This will not impact the stacks, so cashout will give the right signals in all market scenarios.	NGESO to provide volumes in ABSVD files, to cover all impacted BMUs by the ii run	NGESO to provide volumes in ABSVD files, to cover all impacted BMUs by the ii run
Cashflows to account for the reasonable costs will also need to be looked at as they will no longer automatically calculated via existing system processes	Manual processing of Cashflows to recover costs. Use of adhoc trading charge process with legal text change	An automated system to process cashflows. Curtailed generators to provide their costs in a way that Elexon can process them.
Keep the P448 bids as they are, but do not include them in the stack. This option will still include them in the imbalance calculation and the reasonable cost recovery will be covered	Not possible to implement for this winter, but could do 1 year of ABSVD and adhoc trading charge as above.	System change to remove the bids from the stack and hence cashout price calculation, but process as normal in all other calculations. As the bids are being used, we will still need to go via the manual BSCP18 process No change needed to cashflow calculations



TIME LIMITING THE P448 SOLUTION

Should the P448 solution be time limited? If yes, what should the time limit be?

- Discussed at WG1 – It was agreed that P448 should be active for Winter 2023/24
- The general consensus was that the P448 solution should be enduring
- The WG requested that this be discussed at the end of the Issue process before confirming this view

7:42 am Tue 13 Dec

THE TIMES

Tuesday December 13 2022

Business

‘Prepare for a gas crisis next winter’

Europe plans €100bn measures to curb shortage

Emily Gosden, Energy Editor

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Ursula von der Leyen, the commission president, declared yesterday that European energy supplies were “safe for this winter”, and added: “Russia’s black-mail has failed.” However, “preparing for winter 2023-24 starts now”, she said, citing IEA analysis that the coming winter would be “even more challenging”, with a potential shortfall of up to 27 billion cubic metres of gas, or almost 8 per cent of potential demand.

Europe relied on Moscow for



Homes that rely on gas central heating could potentially feel the chill

TOBY MELVILLE/REUTERS

lion cubic metres estimated for this year.

It proposed a €100 billion programme of measures including: an energy efficiency drive to renovate buildings and switch to LED street lighting; faster deployment of renewables; encouraging the switch to electric heat pumps; and encouraging behavioural change from consumers. Supplies could be helped by encouraging countries including Algeria, Angola and Nigeria to capture gas that is burnt off, vented or leaked into the atmosphere. Joint procurement would stop different EU members driving up prices in a bidding war. ■

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New supplies of LNG coming onstream globally next year are at a record low and China, the top consumer of the fuel, is expected to increase demand and thus eat up much of the new capacity. Next winter could be less mild.

The IEA said that without further action, Europe “faces a serious supply-demand gap opening up in 2023”. Demand would be about 352 billion cubic metres next year and supply about 325 billion cubic metres, a shortfall that would have to be balanced through soaring prices, demand destruction as industry is unable to operate and more use of polluting coal power.

The agency is urging European Union members to act to “close this gap” by reducing demand to 330 billion cubic metres, which would be 16 per cent below the five-year average of 393 billion cubic metres and 8 per cent less than the 360 bil-

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TERMS OF REFERENCE

Is further guidance documentation required for P448?

- This was addressed at WG 3
- The WG recommends that a CP be raised to update BSC Procedure (BSCP) 18 ‘Corrections to Bid-Offer Acceptance Related Data’
- This will be raised by Elexon
- The Network Gas Supply Emergencies Guidance Note will also need to be updated but no change is required to do this

Indicative Timetable	
Event	Date
Send CP Proposal form to Issue 105 WG for review	May 2023
CP Progression Paper presented to ISG for information and CP raised	6 June 2023
CP Consultation	12 June 2023 – 7 July 2023
CP Assessment Report presented to ISG for decision	1 August 2023
Proposed Implementation Date	2 Nov 2023 (Nov 23 Release)

Is there an increased risk of generator behavior not in line with ‘Good Industry Practice’?

If yes, should further action be taken?

- This was addressed at WG 2
- The BSC Panel asked the Issue Group to consider whether there should be incentives on Generators to trade out their positions where possible
- The majority of Workgroup members felt strongly that no further action was required
- Existing legal and regulatory framework, such as the Competition Act, covers this and adding further requirements to guidance would be problematic and unnecessary
- This topic is based on an assumption that Generators need to be incentivised to act in a way that benefits customers
- The P448 solution permits Physical Notifications (PNs) to be changed if a Generator trades out their position

How does the P448 solution interacts with Gas Operating Margins contracts?

- This was addressed at WG 2
- This asked the Workgroup to seek confirmation of how the GSO would treat OM contracts under a Stage 2+ Network Gas Supply Emergency (NGSE). This is to ensure that P448 protections should not be restricted if gas generators are offering OM services
- A representative from National Gas attended WG 2
- The representative confirmed that once a generator is instructed to reduce gas offtake (pre-Emergency and under their OM contract), if an emergency is declared and Load Shedding at Stage 2 or higher begins, they will still receive a Load Shedding instruction making them eligible for protection under P448
- Further, where a site is nominated down to 0 through contractual means, they will still be contacted when Stage 2 load shedding is taking place and told not to return to take gas until a stage 4 NGSE (restoration) has been declared and the legal instruction to cease taking gas is revoked
- The Issue 105 Workgroup agreed that no further action is required relating to the BSC

Do any other topics need to be considered as part of Issue 105?

- This was addressed at WG 1 and 3
- A Workgroup member presented a potential extension to the Issue 105 Terms of Reference. This related to the appropriate course of action for Generators when managing D+2 gas positions during an interruption
- The Workgroup agreed that this topic was outside of the scope of Issue 105 and that any solution to the issue sits within the gas market
- No other topics were raised for consideration



NEXT STEPS

Progression plan

Event	Date
Issue raised	22 December 2022
Workgroup Meeting 1	24 January 2023
Workgroup meeting 2	16 February 2023
Workgroup meeting 3	6 March 2023
Workgroup meeting 4	11 April 2023
Workgroup 5	31 May 2023
Distribution of Workgroup 5 summary and actions	8 June 2023
Draft Issue Report sent to Workgroup for feedback	W/C 19 June 2023
Present Issue Report to Panel	13 July 2023 (6 July paper day)

AOB

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THANK YOU

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31 May 2023

Appendix A: Issue 105 Cash Out Price Assumptions (Short Market)

Sudden curtailment	Rising market Curtailment
After a catastrophe on the gas network, it will be almost immediate before a stage 2 emergency is triggered	Prices may be high as gas prices rise pre stage 2, but we do not expect parties to plan for a curtailment. So power prices will reflect a high gas price but below VoLL. E.g. 3k (1 workgroup member questioned this, we welcome further feedback on the question of power prices rising above VoLL before the emergency)
After the load shedding instruction has been issued, within day gas prices will rise sharply and power prices will lag behind by 1-2 hours (until they can react to the gate closure) for wholesale and bid/offer prices	Markets will be driven by high gas prices rather than preempting a stage 2 and the impact of P448. (This is not a unanimous assumption as 1 work group member questioned it)
Gas generators will raise their within day power prices in line with gas prices regardless of the price they paid for the gas	Once a stage 2 curtailment is activated, the behavior of parties may be driven by the P448 solution (i.e. parties' expectations of whether cash-out prices will be suppressed by P448)
Interconnectors will be available if the gas catastrophe is a GB issue only. They will be able to respond to a GB need, but at a high price.	Most generation may already be bought as prices will become favorable to produce power, so therefore unavailable in the BM
SP1 will be classed as the SP during which the first load shedding occurs and subsequently where the bids first come into play	SP1 will be classed as the SP during which the first load shedding occurs and subsequently where the bids first come into play
Gas curtailments are likely to last for several hours to days	Demand control prices are set at 6k (VoLL), but it is possible for NGESO to purchase at a higher price before enacting Demand Control
	Demand control will not necessarily dominate the stack so the cashout price may still be higher
	Suppliers will try to go long in the face of high cashout
	Interconnectors will not be available to the ESO due to actions in Europe dealing with their own Gas shortage