

Phase

[Initial Written Assessment](#)[Definition Procedure](#)[Assessment Procedure](#)[Report Phase](#)[Implementation](#)

P342 'Change to Gate Closure for Energy Contract Volume Notifications'

This Modification would introduce a new deadline for the purpose of submitting ECVNs and MVRNs for each Settlement Period. This new contract notification deadline would be decoupled from Gate Closure, and would be set 60 minutes after the start of the relevant Settlement Period.

This Assessment Procedure Consultation for P342 closes:

5pm on Friday 7 October 2016

The Workgroup may not be able to consider late responses.



The P342 Workgroup initially recommends **approval** of P342

This Modification is expected to impact:

- BSC Trading Parties
- Energy Contract Volume Notification Agents (ECVNAs)
- Metered Volume Reallocation Notification Agents (MVRNAs)
- The Energy Contract Volume Allocation Agent (ECVAA)

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About This Document

The purpose of this P342 Assessment Procedure Consultation is to invite Balancing and Settlement Code (BSC) Parties and other interested parties to provide their views on the merits of P342. The P342 Workgroup will then discuss the consultation responses, before making a recommendation to the BSC Panel at its meeting on 8 December 2016 on whether or not to approve P342.

There are three parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, benefits/drawbacks and proposed implementation approach. It also summarises the Workgroup's key views on the areas set by the Panel in its Terms of Reference, and contains details of the Workgroup's membership and full Terms of Reference.
- Attachment A contains the draft redlined changes to the BSC for P342.
- Attachment B contains the specific questions on which the Workgroup seeks your views. Please use this form to provide your response to these questions, and to record any further views or comments you wish the Workgroup to consider.

P342
Assessment Procedure
Consultation

19 September 2016

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Why Change?

The Proposer believes that setting the Energy Contract Volume Notification (ECVN) and Metered Volume Reallocation Notification (MVRN) submission deadlines to Gate Closure is inefficient and reduces competition.

Solution

P342 proposes to introduce a separate notification deadline for the purposes of submitting ECVNs and MVRNs for each Settlement Period that is independent of Gate Closure. This submission deadline will be set to 60 minutes after the start of the relevant Settlement Period (30 minutes after the end of the Settlement Period). This change will only affect ECVNs and MVRNs; the definition of Gate Closure (the deadline for data submitted under other industry Codes, in particular the Grid Code), will be unaffected by P342.

Impacts & Costs

P342 is not expected to require any implementation effort for any participants. However, BSC Trading Parties will be able to submit ECVNs and MVRNs for a given Settlement Period up to 60 minutes after the start of the relevant Settlement Period, two hours later than currently.

P342 will impact the Energy Contract Volume Allocation Agent (ECVAA), with central costs of approximately £4,000.

Implementation

P342 is proposed for implementation on 2 November 2017 as part of the November 2017 BSC Systems Release.

Recommendation

The Workgroup initially unanimously believes that P342 would better facilitate Applicable BSC Objective (c) and potentially Applicable BSC Objective (e). Therefore, it initially believes that P342 should be approved.

What is Gate Closure?

Gate Closure is the point of time one hour prior to a Settlement Period by which all notifications relating to that Settlement Period must be submitted. This deadline is the point by which Trading Parties, mainly generators, must notify their Final Physical Notifications (FPNs) and Bids and Offers for that Settlement Period to National Grid, acting as the System Operator.

Following Gate Closure the System Operator will carry out its balancing responsibilities through the Balancing Mechanism (BM). It will use its forecast of demand for the Settlement Period and the physical data submitted by Trading Parties to determine whether there is likely to be a surplus or deficit of electricity in the Settlement Period. The System Operator will then accept Bids and Offers as necessary to ensure that generation matches demand throughout the Settlement Period.

After Gate Closure, Trading Parties are expected to adhere to the physical data submitted to the System Operator, in line with the Grid Code obligations. They should only deviate from this position at the instruction of the System Operator.

What are ECVNs and MVRNs?

Contract notifications are submitted by all Trading Parties to the ECVA. There are two varieties of notification under the BSC:

- **ECVNs** are used to notify the ECVA of the traded volumes from bilateral trades between two Trading Parties.
- **MVRNs** are used to notify that either a fixed volume or a percentage of the output of a given BM Unit should be reallocated to another Trading Party's Energy Account.

A Trading Party is required to submit its ECVNs and MVRNs for a particular Settlement Period by Gate Closure. This was reduced from 3.5 hours at NETA go-live to one hour in 2002, in order to permit bilateral contracting to continue as close to real time as possible.

What is the issue?

The Proposer believes explicit coupling of the time at which FPNs and other parameters relating to the dispatch of plant are locked in, and the time at which ECVNs are locked in is unnecessary, reduces competition, and requires Trading Parties to trade in a manner which is less efficient than might otherwise be the case.

[P305 'Electricity Balancing Significant Code Review Developments'](#) introduced a single, marginal imbalance price with the potential to rise to very high values in the event of scarcity of supply and the potential to fall to low or negative values in the event of extreme oversupply. In light of this, the Proposer believes there is a need to be able to transfer risk between Trading Parties, from willing buyers to willing sellers, at a fair market price. They believe that if trading could continue past the current definition of Gate Closure up until a point where an indicative imbalance price has been published, this would allow efficient and effective transfer of risk, promoting competition in the sale and purchase of electricity.

The P305 reforms, in the Proposer's view, increase the need to accurately predict the Net Imbalance Volume (NIV) and the marginal actions taken by the System Operator. The uncertainties associated with early hedging will likely result in wider spreads between Bids and Offers and lead to lower liquidity. As delivery approaches, greater certainty can be gained over the likely imbalance price. This is likely to result in a concentration of liquidity in the run up to market closure. The Proposer believes a later deadline for ECVN submission would improve this liquidity.

Furthermore, the Proposer considers that the single imbalance price allows Trading Parties to stimulate trading post-Gate Closure via another route. A financial deal could be struck between two Trading Parties where the difference between the strike price and the imbalance price is passed between the 'buyer' and the 'seller'. However, these deals would potentially be subject to more onerous regulation as a financial product, and more onerous BSC credit requirements due to increases in imbalance cash flows.

The Proposer also notes the explicit coupling of time between Gate Closure and the ECVN submission deadline may create difficulty for future developments in intra-day trading using coupled European Union auctions. Under these proposals, trading up to one hour before a traded period must be allowed, but results may not be known until after the current definition of Gate Closure.

[Issue 35 'Timing of Gate Closure and Related Matters'](#), raised in 2008, touched upon this area. The Issue 35 Group was, however, primarily focussed on modifying the timing of Gate Closure for FPNs as well as ECVNs. While the Issue 35 Group expressed concern that ex-post trading might not provide the correct incentives on Trading Parties to manage their trading/imbalance, the P342 Proposer notes that the subsequent implementation of P305 raises this possibility without a requirement to submit the relevant ECVNs.

This Modification has been raised following [Issue 61 'Changes to Gate Closure for Energy Contract Volume Notifications'](#). The Issue 61 Group, by majority, concluded that the ECVN submission deadline should be extended from its current time of one hour before the Settlement Period begins. However, the Group did not agree on by how much the ECVNs submission deadline should be extended.

Proposed solution

P342 'Change to Gate Closure for Energy Contract Volume Notifications' was raised by EDF Energy on 25 May 2016. It proposes to introduce into the BSC the concept of a separate deadline for ECVNs, MVRNs, Credit Check and Settlement Period accept-reject period. The time of the new submission deadline for contract notifications would be separate from the existing 'Gate Closure' time, and would be set to 60 minutes after the start of the relevant Settlement Period. This would permit energy trades to continue to be notified until the indicative imbalance price has been published on the Balancing Mechanism Reporting Service (BMRS) shortly after the end of the Settlement Period.

The existing definition of 'Gate Closure', which is the time 60 minutes before the start of the Settlement Period, would be retained as this term is directly referenced under other Codes, in particular the Grid Code. Any references to 'Gate Closure' under other Codes would therefore be unaffected by P342.

Legal text

The proposed changes to the BSC to deliver P342 can be found in Attachment A.

Assessment Consultation Question

Do you believe that the draft legal text delivers the intention of P342?

Please provide your rationale.

The Workgroup invites you to give your views using the response form in Attachment B

Self-Governance

At this stage, the Workgroup has not given an initial view on whether P342 should be treated as a Self-Governance Modification. We seek the views of respondents to this consultation on this area. The Workgroup will then provide a recommendation on this to the Panel as part of its Assessment Report.

Assessment Consultation Question

Do you believe that P342 would meet the Self-Governance Criteria and so should be progressed as a Self-Governance Modification?

Please provide your rationale with reference to the Self-Governance Criteria.

The Workgroup invites you to give your views using the response form in Attachment B

Are there any alternative solutions?

At this stage, the Workgroup has not formally raised an Alternative Modification. However, some Workgroup members consider there to be merit in setting the new submission deadline to be the start of the Settlement Period. The Workgroup's discussions on this can be found in Section 6, and it seeks your views on this potential Alternative Modification as part of this consultation. The Workgroup will then determine whether or not to raise this option as an Alternative Modification.

The Workgroup does not believe there are any other potential solutions that would better facilitate the Applicable BSC Objectives compared to the Proposer's Proposed Modification.

Assessment Consultation Question

Do you agree that there is no Alternative Modifications within the scope of P342 which would better facilitate the Applicable BSC Objectives compared to the Proposed Modification?

Please provide your rationale and if 'No' please provide full details of your Alternative Modification(s) and your rationale as to why it/they would better facilitate the Applicable BSC Objectives than the Proposed Modification.

The Workgroup invites you to give your views using the response form in Attachment B



Estimated central implementation costs of P342

The central implementation costs of P342 are approximately £4,289. These costs arise from the ECVAAs changing the value of the 'Gate Closure' parameter for ECVNs and MVRNs within the ECVAAs systems and testing that these changes have successfully taken effect. There will be no ongoing costs.

Indicative industry costs of P342

We expect P342 to indirectly impact the industry, as Trading Parties will be able to submit contract notifications up to 60 minutes after the start of the relevant Settlement Period.

However, we do not expect any industry implementation impacts or costs for P342, but we seek confirmation of this as part of this consultation.

The Workgroup is also keen to understand how Power Exchanges may change their behaviour in response to P342 (e.g. by staying open later in response to the new deadline). We ask Power Exchanges to provide information on this as part of their response on how P342 would impact them.

Assessment Consultation Questions

Will P342 impact your organisation?

If 'Yes' please provide a description of the impact(s) on your organisation and any activities which you will need to undertake between the approval of P342 and the P342 Implementation Date (including any necessary changes to your systems, documents and processes). Where applicable, please state which of the roles that you operate as will be impacted and any differences in the impacts between each role.

Will your organisation incur any costs in implementing P342?

If 'Yes' please provide details of these costs, how they arise and whether they are one-off or on-going costs.

The Workgroup invites you to give your views using the response form in Attachment B

P342 impacts

Impact on BSC Parties and Party Agents

Party/Party Agent	Impact
BSC Trading Parties	Trading Parties will be able to submit ECVNs and MVRNs up to 60 minutes after the start of the relevant Settlement Period.
ECVNAs	
MVRNAs	

Impact on Transmission Company

None anticipated

Impact on BSCCo	
None anticipated	

Impact on BSC Systems and process	
BSC System/Process	Impact
ECVAA	The ECVAA will receive ECVNs and MVRNs for a Settlement Period up to 60 minutes after the start of the relevant Settlement Period.

Impact on Code	
Code Section	Impact
Section H	Changes will be required as a result of this Modification. <i>You can find the proposed changes in Attachment A.</i>
Section M	
Section P	
Section X Annex X-1	

Impact on Code Subsidiary Documents	
CSD	Impact
ECVAA Service Description	Changes may be required to implement this Modification.
ECVAA User Requirements Specification	

Impact on Other Documents	
Document	Impact
Guidance Notes	Any guidance notes that reference Gate Closure will need to be amended in line with P342.

5 Implementation

Recommended Implementation Date

The P342 Workgroup is provisionally recommending an Implementation Date for P342 of **2 November 2017** (November 2017 Release).

The November 2017 Release is the earliest viable Release that P342 can target based on the current P342 progression timetable and the current view of changes targeted at or approved for each Release. Including P342 in the June 2017 Release would increase risk to the implementation of the large volume of system changes already approved for this Release. The Workgroup noted this and agreed it sensible that P342 should be targeted at the November 2017 Release.

Assessment Consultation Question

Do you agree with the Workgroup's recommended Implementation Date?

Please provide your rationale.

The Workgroup invites you to give your views using the response form in Attachment B

What is the impact of P342 on liquidity in the market?

Some Workgroup Members noted that if Trading Parties can trade after Gate Closure, they might wait until they know the indicative imbalance price and trade after that point. This will not increase the liquidity of the market, but will only move the time at which trades happen. The Workgroup agreed that it could not demonstrate that this proposed Modification will improve the liquidity of the market. However, it is possible to identify how much volume is left over in the market at Gate Closure which could potentially be traded during real time.

The Workgroup investigated the potential volumes available at Gate Closure that could be traded if the deadline was extended, and the results of this analysis can be found in Appendix 1.

The Workgroup noted that the sum of the net imbalance volume does not necessarily show what the tradable volume is. One Workgroup member noted that a Trading Party would only be able to trade if there is another Trading Party whose position is in the opposite direction. For example, if a Trading Party is long and has residual energy which is available to trade, it will trade only if there is a corresponding short volume with other Trading Parties. Indeed, if Trading Parties were all long or all short there would be no opportunity to trade.

The Workgroup agreed that is crucial for the rationale of P342 to identify the residual tradable volume left over at Gate Closure. The Workgroup was keen to see how much 'overlapping' volume there was in each Settlement Period between those Trading Parties who were long and those who were short (e.g. if there was 600MWh of imbalance across 'long' Trading Parties and 400MWh across 'short' Trading Parties then there is the potential for 400MWh of trading to be done). The analysis suggested that there could be around 300MWh-400MWh available on average in each Settlement Period that could be traded.

Based on the analysis results and on the experience of members, the Workgroup agreed that there is a significant chance that P342 will have a positive impact on liquidity in the market.

Should any changes be made to the Credit calculations?

Under the current arrangements, a Settlement Period is added to the Credit Cover Percentage (CCP) calculation at Gate Closure, when all ECVNs and MVRNs are final. The proposed solution would move the ECVN and MVRN submission deadlines back by two hours, just after the indicative imbalance price for the Settlement Period will become known.

The Workgroup discussed whether this proposal would have an impact on the Credit calculation. In particular, members noted that if the ECVN submission deadline was after the indicative imbalance price was calculated, there would be the possibility of using that specific price in the Credit calculation in place of the flat Credit Assessment Price (CAP). This would make the Credit calculation more accurate.

It was noted that, following the implementation of P305, the Credit calculation should be more responsive to price fluctuations. However, a Workgroup member considered that the CAP is not supposed to respond to prices changes. They added that the CAP is a proxy estimation of the credit market and therefore it can produce inaccurate results.

The Workgroup sought some analysis on the impacts of using the indicative imbalance price in place of the CAP in the Credit calculation. This analysis concluded that an overall reduction in the amount of Credit needing to be lodged could be realised from this change, with Suppliers realising the biggest potential reduction. The full results of this analysis can be found in Appendix 1.

The Workgroup noted these results, but also considered that the intent of P342 is to amend the deadline for submitting ECVNs. While this change to the Credit calculations would realise benefits, including it under P342 could unduly impact the progression of its core intent. The Workgroup also noted that this element would add around £45,000 to the central costs of P342, and could have a more notable implementation impact on participants.

The Proposer concluded that, based on the analysis and discussion, changes to the CCP calculation should not form part of the proposed solution of P342. The Workgroup agreed with this approach, but members encouraged this element to be investigated further separately. It was also noted that this change could be progressed irrespective of the outcome of P342 should the time at which the Credit calculation commences be decoupled from the ECVN submission deadline.

How could P342 impact on different types of participants and their behaviour?

The Workgroup discussed the impact of P342 on different participants. Some members noted that large embedded generation portfolios within Supplier BM Units are largely invisible to National Grid as they are not required to submit FPNs. Therefore, some Workgroup members felt that P342 could be detrimental to competition because it could be seen to favour some participants rather than others. If trading took place closer to real time, the embedded generators would have a chance to get more information, trade and re-dispatch, changing their initial position. In contrast, generation BM Units (which are obliged to send their FPNs at Gate Closure) will not be able to deviate from their notified physical output without any System Operator instructions (e.g. via a Bid or an Offer).

The Workgroup also noted that small generators are not required to submit FPNs. They can use demand side management, for instance for health and safety reasons, and decrease their generation.

The Proposer noted that some Trading Parties are not part of the Balancing Mechanism and they can already adjust their position after the Gate Closure independently from the outcomes of P342. They added that there are already potential disruptions in the system and incentives to deviate from the initial position. Some Trading Parties already have the ability to self-dispatch (such as embedded plants). Therefore, the Proposer believes P342 will not create a massive change in this sense, but it will allow Trading Parties to have price certainty, e.g. by trading volume at a set price rather than spilling and being paid at the imbalance price. In addition, on the retail side communication will be improved and Trading Parties will be able to better forecast their position.

Another Workgroup member queried how P342 may impact on the activities of Power Exchanges. Members felt that it was likely Power Exchanges would remain open longer in line with the new submission deadline, closing 15 minutes before the new deadline (e.g. under the Proposed Modification a Power Exchange may choose to stay open until 15 minutes after the end of the Settlement Period). The Workgroup encouraged Power

Exchanges to provide this information as part of their response to the question on how P342 would impact on Trading Parties (see Section 4).

Is P342 compatible with the draft European Network codes?

The Workgroup discussed whether the proposed solution would be compatible with the Draft European Network Codes. In particular, the Workgroup noted a potential interaction between P342 and the Trans-European Replacement Reserves Exchange (TERRE) Project under [P344 'Project TERRE implementation into GB market arrangements'](#). However, P344 is currently under assessment and we cannot make an assumption on their interaction before a decision on this Modification will be made. Overall, the Workgroup agreed that, at this stage, they cannot clearly understand the compatibility between Project TERRE and P342.

Should P342 also extend the deadline for MVRNs?

Members observed that MVRNs tend to be submitted once on an 'evergreen' basis and only updated should the relevant BM Unit change ownership. Therefore, the Issue 61 Group had felt it better to leave out MVRNs from the proposed solution, believing it would be more efficient the focus only on ECVNs under P342. However the central impact assessment responses indicated that it will be much cheaper to also include MVRNs under the P342 proposed solution.

One member noted that if the deadline for submitting MVRNs is moved to 60 minutes after the start of the relevant Settlement Period, there is a possibility that they could be applied retrospectively. In this case, there will be an increased risk of error due to a possible reallocation of the volume.

Assessment Consultation Question

Will setting the MVRN submission deadline to 60 minutes after the start of the relevant Settlement Period increase the risk of Settlement error?

Please provide your rationale.

The Workgroup invites you to give your views using the response form in Attachment B

What is the appropriate deadline to set?

The Workgroup discussed other potential timings for the contract notification deadline.

A Workgroup member proposed to set the contract notification deadline to 15 minutes after the end of the Settlement Period. They noted that the indicative imbalance price, which is generally accurate, is published about 22-23 minutes after the end of the Settlement Period¹. Once this price is set, there is no point to continue to trade. The Workgroup member added that 15 minutes would allow Trading Parties to send their contract notifications before the indicative imbalance price is published. However, the central impact assessment showed that, in order to avoid substantial ECVAAs changes and

¹ The indicative imbalance price is published within the Continual Acceptance Duration Limit (CADL) plus 15 minutes of the end of the Settlement Period. CADL is currently set to 15 minutes, meaning the indicative imbalance price is published within 30 minutes of the Settlement Period ending.

costs, the deadline would need to be on the hour or the half-hour. As a consequence, the Workgroup decided to no longer consider this option.

Some members noted that if Trading Parties are allowed to trade in the real time dispatch period, there could be unintended consequence. The Issue 61 Group had agreed that, if the existing Gate Closure is left in place for Grid Code notifications (such as FPNs or Bids and Offers) and only ECVNs were allowed to be submitted later, this should not cause any issues for National Grid in balancing the system. However, some Workgroup members raised a concern that the proposed solution may allow Parties to benefit through trading from the effects of their own imbalance. Additionally, they were concerned that trading within the Settlement Period could impact the security of supply. Therefore, a few Workgroup members proposed to set the final ECVNs and MVRNs submission deadline to the start of the Settlement Period. The Workgroup is currently considering this option as a potential Alternative Modification.

Assessment Consultation Question

Do you believe P342 will have an impact on security of supply?

Please provide your rationale.

The Workgroup invites you to give your views using the response form in Attachment B

Workgroup's conclusion

The Workgroup agreed with the Proposer that, by extending the ECVN and MVRN submission deadlines, there is an opportunity for Trading Parties to obtain more information on their position as more information becomes available closer to real time. This can help to reduce their balancing exposure. In addition, Half-Hourly (HH) metering could provide benefit further down the line if Trading Parties were able to obtain real time Meter reads. This could allow Trading Parties to monitor their positions in real time and better enable them to act accordingly.



Does P342 better facilitate the Applicable BSC Objectives?

The Workgroup unanimously agreed with the Proposer that P342 will better facilitate Applicable BSC objective (c) by allowing a more efficient and effective transfer of risk and providing the potential to increase market liquidity.

In addition the Workgroup unanimously agreed that P342 will potentially better facilitate Applicable BSC objective (e) if the European Regulations will require, in the future, a change to Gate Closure for contract notifications.

Due to the potential risk associated with security of supply, four members felt that the potential Alternative solution Modification would better facilitate Applicable objective (c) and (e) compared to the Proposed Modification, while six members felt that the Proposed Modification was the better option.

Assessment Consultation Questions

Do you believe that P342 would better facilitate the Applicable BSC Objectives compared to the current baseline and so should be approved?

Please provide your rationale with reference to the Applicable BSC Objectives.

Do you believe that the potential P342 Alternative Modification would better facilitate the Applicable BSC Objectives compared to the Proposed Modification and so should be raised?

Please provide your rationale with reference to the Applicable BSC Objectives.

The Workgroup invites you to give your views using the response form in Attachment B

What are the Applicable BSC Objectives?

(a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence

(b) The efficient, economic and co-ordinated operation of the National Electricity Transmission System

(c) Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity

(d) Promoting efficiency in the implementation of the balancing and settlement arrangements

(e) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency [for the Co-operation of Energy Regulators]

(f) Implementing and administrating the arrangements for the operation of contracts for difference and arrangements that facilitate the operation of a capacity market pursuant to EMR legislation

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Appendix 1: Workgroup Analysis

This Appendix summarises the results of the analysis undertaken by ELEXON on behalf of the Workgroup to assess the potential impacts of P342. The Workgroup asked ELEXON to undertake two distinct pieces of analysis:

1. Investigating Imbalance Volumes by Trading Control Group to understand level of potential liquidity; and
2. Investigating the impacts of changes to the Credit calculations on credit requirements of BSC Trading Parties.

Analysis Piece 1 – Imbalance Volume by Trading Control Group

Background

The Workgroup acknowledged trading liquidity as a key issue in order to confirm the rationale of the proposal. If there is insufficient liquidity, then extending the deadline for trading is unlikely to result in a material reduction in Imbalance Volumes, as Parties with residual volume to trade may be unable to find a counterparty. This situation may arise if for example, in a given Settlement Period, many Parties are long (and could sell this excess after Gate Closure) but few Parties are short.

The Workgroup asked ELEXON to investigate how much volume is left over at the Gate Closure that can have been traded by the Parties. These volumes should be net of Production and Consumption Energy Accounts and given that some organisations hold multiple BSC Party Ids.

Analysis requirements

The Workgroup confirmed the following requirements for this analysis:

- Imbalance volume (Production and Consumption Energy Accounts netted);
- For each Settlement Period;
- Split by sum of Long volumes and sum of Short volumes;
- Aggregated by Trading Control Group (groupings from P282 analysis); and
- Data to span from May 2015 to April 2016.

The results are not confidential, since the data used for the analysis appears in the SAA-I014 Settlement reports which are sent to all parties (and any Party could therefore recreate the results).

Further analysis

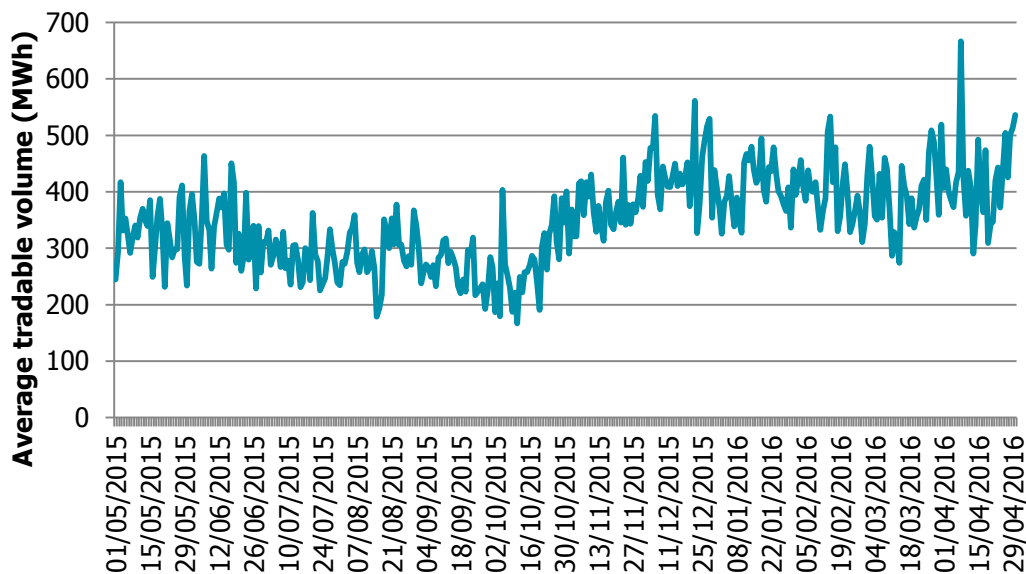
At the second Workgroup meeting, a member advised that a summation of long and short Imbalance Volumes does not provide a fair indicator of liquidity as trading will only realistically occur when there is both long and short volume (i.e. a seller and a buyer). Therefore taking the minimum of long and short Imbalance Volume for each Settlement Period instead would provide an indicator of what volume was tradable.

In addition, at the second Workgroup meeting a representative of EPEX Spot offered APX intra-day market exchange data for comparison with ELEXON's Imbalance Volume data.

As the Workgroup felt this analysis to be more relevant, the section covers the further analysis first, followed by the original analysis.

Further analysis - Daily average of tradable volume

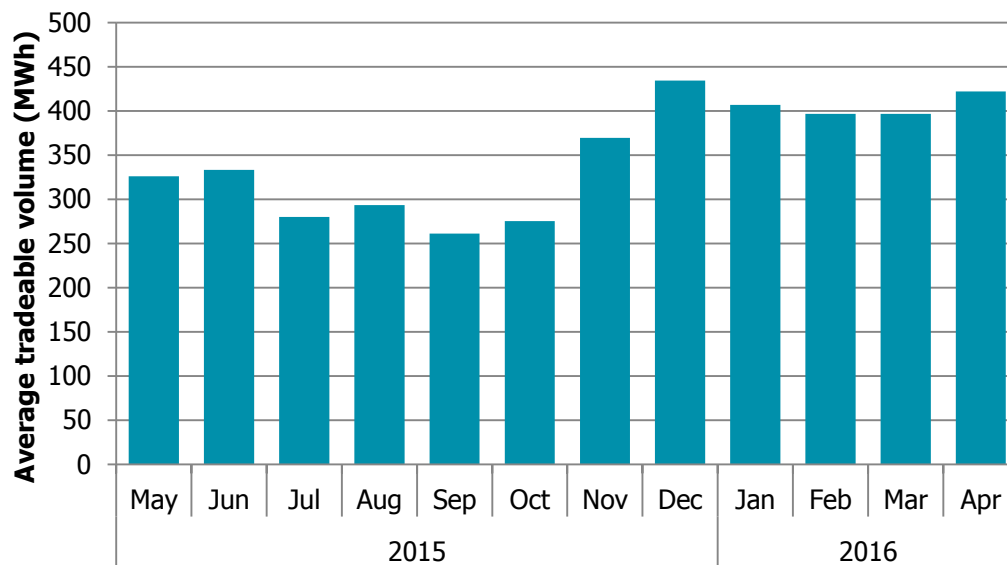
The graph below is the product of further analysis undertaken following feedback at the second Workgroup meeting. It shows the daily average of the absolute minimum of market-wide long and short Imbalance Volume in each Settlement Period. Due to the volume of data, and issues around allocating the impact of netting, this analysis does not provide a breakdown by Trading Control Group/Party Id.



The analysis shows an average tradable volume over the period of 349 MWh, ranging from 166 MWh on 11 October 2015 to 666 MWh on 8 April 2016. The Workgroup expressed an initial view that, provided Imbalance Volumes are a fair indicator, this represented a good level of liquidity.

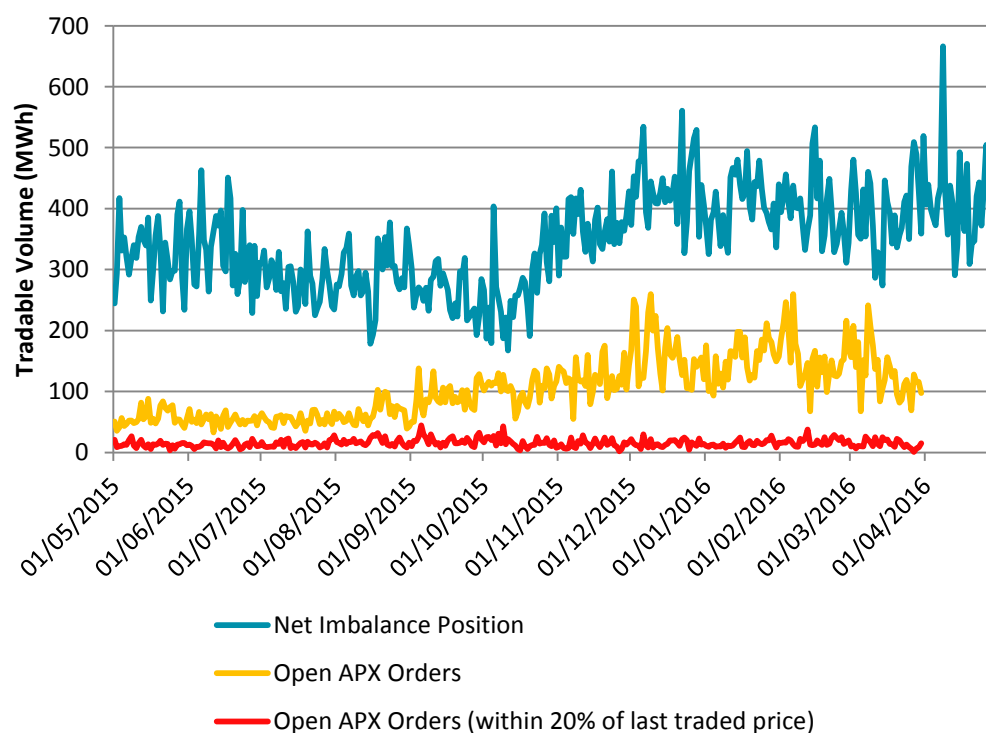
Further analysis - Monthly average of tradable volume

The graph below shows a monthly average of the data in the previous graph.



Further analysis – Daily average of tradable volume (Imbalance and APX data)

The graph below shows the Daily average of tradable volume (labelled 'Net Imbalance Position' below) alongside APX data from EPEX Spot. The APX dataset consists of buy and sell trade orders that were open as at Gate Closure for each Settlement Period. ELEXON have determined tradable volume based on the minimum of the summation of buy and sell order volumes for each Settlement Period. At the second Workgroup meeting EPEX Spot advised that it may be sensible to isolate orders with a price that are within a 20% threshold of the last traded price and thereby remove outliers from the analysis. These outliers represent orders that would unlikely be met due to the order price being unattractive to the market.



The analysis shows an average tradable volume (based on open APX orders) over the period of 103 MWh ranging from 33 MWh on 11 June 2015 to 260 MWh on 9 December 2016. For tradable volume based on open APX orders within 20% of last traded price, the average over the period was 15 MWh ranging from 1 MWh on 27 March 2016 to 44 MWh on 5 September 2015.

The rest of this section concerns analysis undertaken based on the requirements defined at the first Workgroup.

Trading Control Groups

The Workgroup agreed that the analysis should be aggregated by Trading Control Group to reflect the ability of organisations to coordinate trading across multiple Party Ids. The Workgroup noted that such grouping had been previously used in the analysis for [P282 'Allow MVRNs from Production to Consumption or Vice Versa'](#) and agreed the same aggregations should be used. These aggregations are listed below.

Trading Control Group	Party Id
_CENTRICA	ACCORD
	BRITGAS
	LINC SWFL
_DONG_STATKR	DEEM1000
	DONG001
	DONG003
	DONG005
	DONG006
	STATKRA1
_DRAX	DRAX
	HAVEN
_EDF	BEDL001
	BEPET001
	EDFETRNS
	EDFT
	LENCO
	LONDELEC
_EON	EONETRAD
	POWERGEN
_ESB	ESBIENI
	ESBIGT
_GDFSUEZ	DPDCOLTD
	ELECBEL
	FOUR

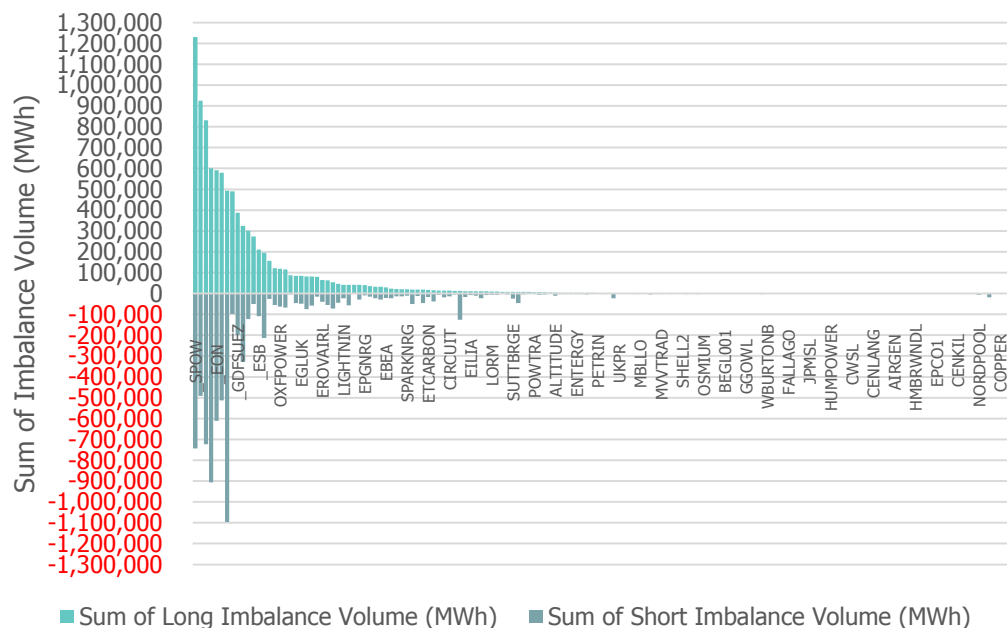
	FSTHYDRO
	GASELYS
	RWETDL
	TEESSIDE
_INTERGEN	CECL
	IPIPC
	RPCL
	SPAL
_KOCH	KCEL
	KOCH
_PHILLIPS	CUKL
	PH66
_RWE	INNOGY01
	NPOWER01
	RWE
_SPOW	IBERGEN
	SPCRE01
	SPOWER02
_SSE	SEABANK
	SSE
	SSEGEN
_VATTENFALL	TOW
	VTS

Trading Control Groups are made distinct from Party Ids using the `_' prefix. For Trading Parties not in a Trading Control Group, analysis would be aggregated under that Party Id alone.

Please note that Trading Control Groups `_KOCH' and `_PHILLIPS' do not feature in this analysis as there was no data for the related Party Ids over the period.

Ordered year totals of Imbalance Volume

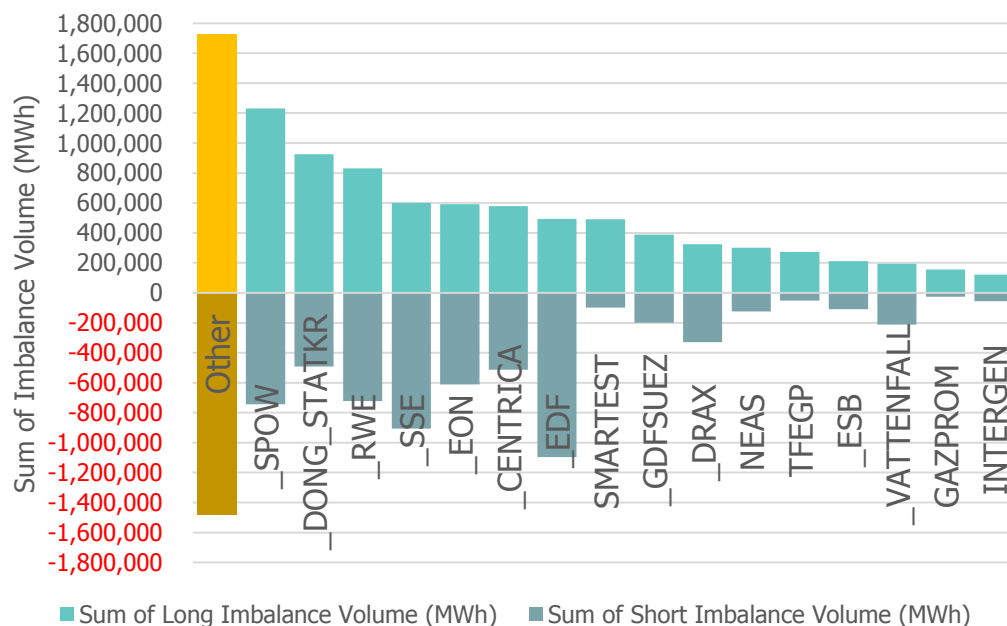
The graph below shows total long and short Imbalance Volumes for each Trading Control Group/Party over the period. The data is ordered by long Imbalance Volume.



This analysis showed that the Trading Control Groups had most of the highest Imbalance Volumes, with total long Imbalance Volume for the Trading Control Groups ranging from 1,230,737 MWh (_SPOW) to 120,971 MWh (_INTERGEN). Short Imbalance Volumes ranged from -1,479,216 MWh to -26,357 MWh however there wasn't a strong correlation between long and short.

Ordered year totals of Imbalance Volume ('Other' aggregated)

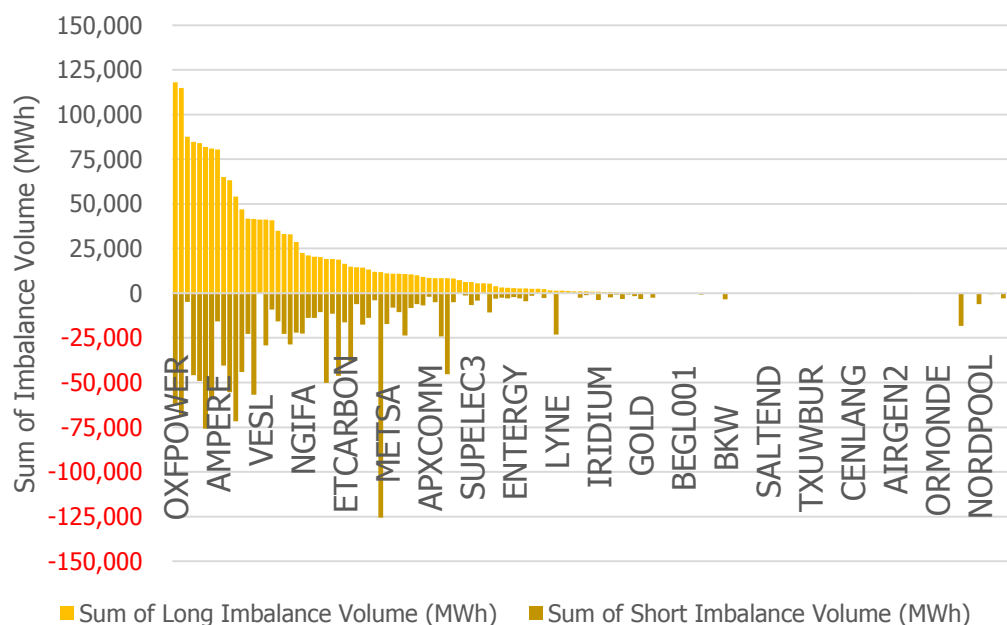
The graph below shows the same data as above, but we have aggregated Party Ids with long Imbalance volume less than the Trading Control Group with the smallest long Imbalance Volume (_INTERGEN at 120,971 MWh).



This analysis highlighted that the 12 Trading Control Groups and four Parties made up over 81% of the total long Volume (7.7m MWh of 9.4m MWh total) and over 80% of the total short volume (6.3m MWh of 7.8m MWh total).

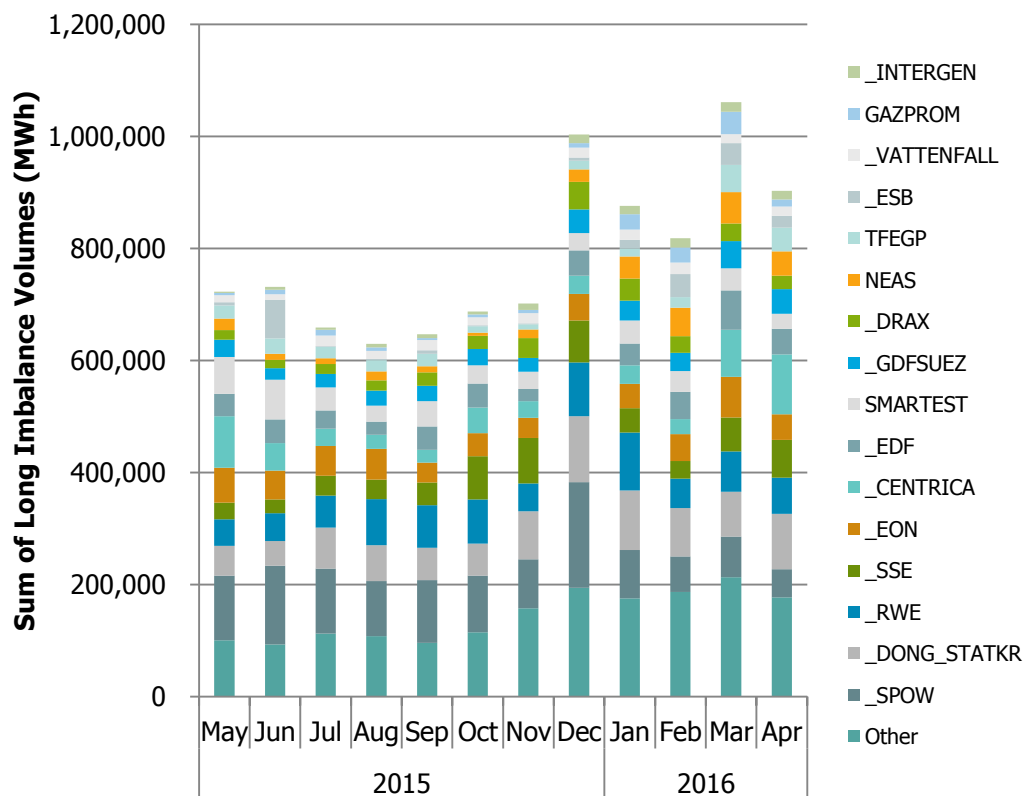
Ordered year totals of Imbalance Volume ('Other' only)

The graph below shows the same data as above but only for the Party Ids that were aggregated under 'Other'.



Long Imbalance Volumes by month

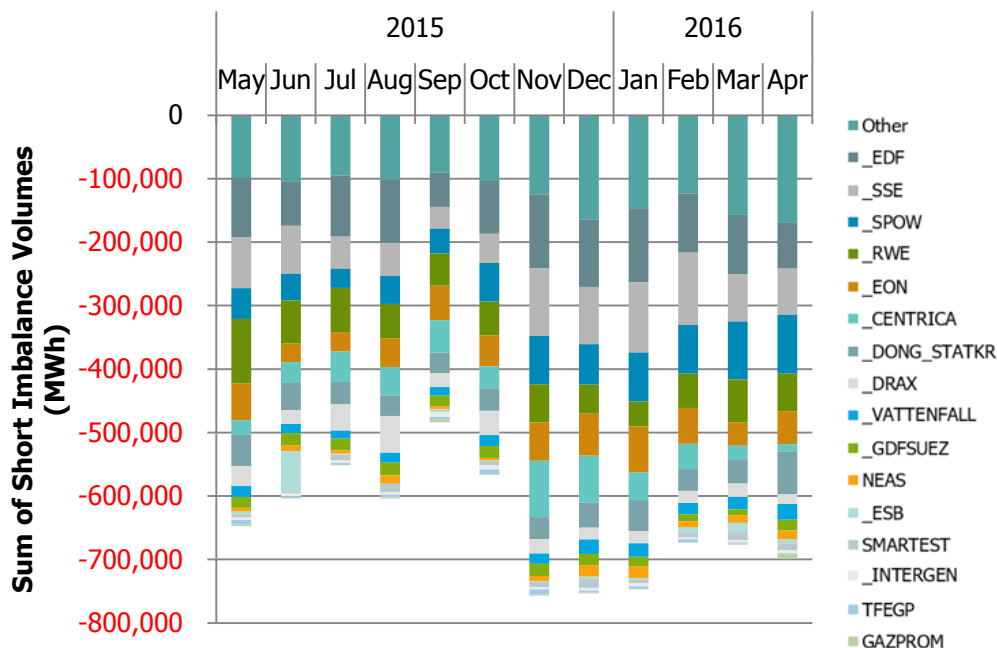
The graph below shows the summation of long Imbalance Volumes for each Trading Control Group/Party Id by month. Please note that this graph uses the same aggregation of Party Ids with long Imbalance volume less than the Trading Control Group with the smallest long Imbalance Volume.



This analysis shows that long Imbalance Volumes were higher in the winter period. This could be due to unexpected differences from anticipated seasonal variations (i.e. winter 2015 was warmer than expected) or it could be due to the introduction of P305 which had various impacts on trading and imbalance management.

Short Imbalance Volumes by month

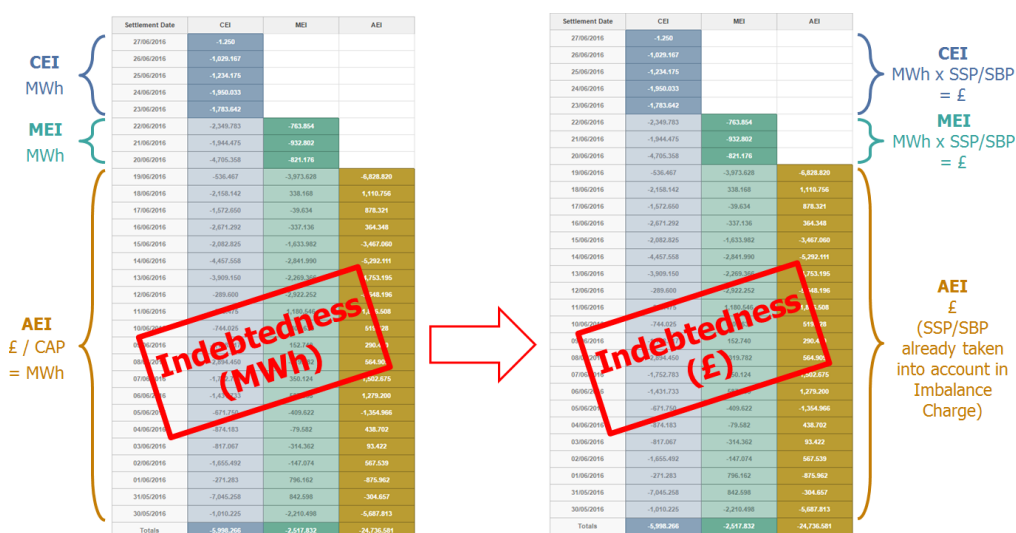
The graph below shows short Imbalance Volumes for each Trading Control Group/Party Id by month, with the same aggregation.



This analysis shows a positive correlation with the summation of long Imbalance Volumes, such that as Trading Control Groups/Party Ids had higher long Imbalance Volumes in the winter season, they also had higher short Imbalance Volumes. This may suggest that Trading Control Groups/Party Ids were less able to manage their imbalance in the winter, or it could be a product of the seasonal increase in overall generation/consumption.

Analysis Piece 2 – Imbalance prices instead of CAP

The Workgroup also discussed the possibility of changing the Credit calculation to utilise 'BM' indicative Imbalance Prices. These would be available if the Credit calculation took place 15-20 minutes after the end of the Settlement Period. The Credit calculation could then be changed to measure Indebtedness in £ rather than MWh, eliminating the need for a CAP and Credit Committee.



Although prompted by discussion of having a later ECVN deadline, this potential change is not dependent on the approval of P342 as a later change could look to delay the Credit calculation until 'BM' indicative Imbalance Prices are available. ELEXON presented market-wide and example Party (anonymised) analysis at the second workgroup meeting, which demonstrated net benefit across all Party categories. The Workgroup discussed the analysis but concluded that P342 should not make any changes to the credit arrangements and that such changes could be proposed under a separate Modification. This section therefore only includes some market-wide analysis rather than the detailed analysis presented to the Workgroup.

Analysis requirements

The analysis requirements are the followings:

- Credit requirement under current calculation;
- Credit requirement under new calculation;
- Aggregated by Trading Party category (e.g. Supplier, generator...); and
- Data to span from 5 November 2015 (introduction of single Imbalance Price) to April 2016.

Results are anonymised, since the data used for the analysis is not available to all parties. This analysis assumes a credit requirement to be the funds required to have an 80% CCP for a given level of Indebtedness (MWh).

Analysis approach

ELEXON only holds Total Energy Indebtedness (TEI) data as at Settlement Period 48 of each day, therefore the analysis calculations were done at day granularity rather than per Settlement Period. Furthermore ELEXON do not hold a breakdown of Credited Assessment Energy Indebtedness (CEI)/ Metered Energy Indebtedness (MEI) or Actual Energy Indebtedness (AEI), and therefore we calculated AEI by summing Trading Charges and dividing this by the CAP. We determined the applicable AEI amounts for each day and then subtracted this from TEI to determine the CEI/MEI for each day. This allowed us to then apply a daily average of Imbalance Prices to the CEI/MEI and based on this; calculate the credit requirement under the 'new' calculation. The current ('old') and 'new' credit requirements were calculated as follows:

$$\text{'Old' credit requirement} = (\text{'TEI'} / 0.8) \times \text{CAP}$$

$$\text{'New' credit requirement} = ((\text{'CEI/MEI'} \times \text{'Average SBP'}) - \text{'Trading Charges'}) / 0.8$$

The analysis did not use data on credit lodged by Trading parties or attempt to calculate CCP, as this was not necessary for determining the impact on credit requirement.

Monthly average of credit requirement

The graph below shows the monthly average of total credit requirement per Trading Party category under the 'old' and 'new' calculations.



This analysis shows that every Trading Party category would have seen some months with a lower credit requirement and some months where the requirement was higher. The 'Generator' Trading Party category had a consistently negative credit requirement, due to negative Indebtedness. In practice, negative TEI means that a Trading Party can have zero credit lodged and not enter credit default, and therefore a reduction in credit requirement (i.e. making the credit requirement more negative) would give no real benefit for the Trading Party. The analysis suggests therefore that there may be many Generators that would not benefit from this change in practical terms. The 'Supplier' Trading Party category on the other hand had positive TEI in most months and also saw the greatest % reduction in credit requirement.

Monthly average of total credit requirement summary

The table below summarises the monthly average of total credit requirement per Party category under the current ('old') and 'new' calculations, averaged over the analysis period.

Trading Party category	Average old req. (£)	Average new req. (£)	Additional req. (£)	% Reduction
Generator	-28,602,724	-29,235,589	-632,865	2.21%
Interconnector Administrator	93,572	91,556	-2,017	2.16%
Non-Physical Trader	4,890,329	4,628,219	-262,110	5.36%
Other	-75,008	-77,279	-2,271	3.03%
Supplier	6,437,568	4,996,730	-1,440,838	22.38%

This shows an overall reduction in credit requirement for every Trading Party category of around 2-5%, with the exception of the 'Supplier' Trading Party category which sees a much greater reduction of around 22%. The workgroup considered that this could be due to the differences between the CAP and Imbalance Prices since the 5 November 2015.

Key findings

The analysis highlighted that when the Imbalance Price is greater than the CAP then positive CEI/MEI becomes more costly under the new calculation and negative CEI/MEI becomes cheaper. This is because positive CEI/MEI represents a short position (from a credit perspective) and therefore moving to a greater price increases the credit requirement of this per MWh. Negative CEI/MEI represents a long position and therefore moving to a higher price makes the Party's long volume more 'valuable'. Conversely, when the Imbalance Price is less than the CAP then negative CEI/MEI becomes more costly under the new calculation and positive CEI/MEI becomes cheaper.

The analysis also found an overall reduction in credit requirement for every Trading Party category, with a total average reduction of £2,340,100.

Appendix 2: Workgroup Details

Workgroup's Terms of Reference

Specific areas set by the BSC Panel in the P342 Terms of Reference

What is the most appropriate deadline for ECVN submissions?

How may P342 impact liquidity in the market?

Should any changes be made to the Credit calculations?

- Should the Credit Cover Percentage calculation be moved in line with the new ECVN submission deadline?
- Should indicative imbalance prices be used in the Credit Cover Percentage calculation if these are available?

What impact may there be on different types of participant?

What effect may P342 have on embedded generation?

What potential changes in participants' behaviour may arise as a result of P342?

Will P342 impact the Contract for Difference arrangements?

Are these changes compatible with the draft European Network Codes?

Should P342 be progressed as a Self-Governance Modification?

What changes are needed to BSC documents, systems and processes to support P342 and what are the related costs and lead times?

Are there any Alternative Modifications?

Does P342 better facilitate the Applicable BSC Objectives than the current baseline?

Assessment Procedure timetable

P342 Assessment Timetable

Panel submits P342 to Assessment Procedure	19 Jun 16
Workgroup Meeting 1	28 Jun 16
Industry Impact Assessment	18 Jul 16 – 05 Jul 16
Workgroup Meeting 2	02 Sep 16
Assessment Procedure Consultation	19 Sep 16 – 07 Oct 16
Workgroup Meeting 3	11 Oct 16
Panel considers Workgroup's Assessment Report	10 Nov 16

Workgroup membership and attendance

P342 Workgroup Attendance			
Name	Organisation	28 Jun 16	02 Sep 16
Members			
David Kemp	ELEXON (<i>Chair</i>)	✓	✓
Giulia Barranu	ELEXON (<i>Lead Analyst</i>)	✓	✓
Richard Devenport	EDF Energy (<i>Proposer</i>)	✓	✓
Alan Okino	Gazprom Marketing and Trading	✓	✗
Andrew Colley	SSE plc	✓	✗
Andrew Russell	Engie	✓	✗
Bill Reed	RWE Supply & Trading GmbH	✓	✓
Chris Fisher	Energy Marketing and Trading	✓	✓
Esther Sutton	Uniper UK Limited	✓	✓
Helen Stack	Centrica EMT Regulatory Affairs	✓	✗
Howard Wright	EPEX SPOT SE	✓	✓
Joseph Underwood	Drax Power Limited	✓	✓
Kenneth Skou	Neas Energy A/S	✓	✓
Lisa Waters	Waters Wye Associates	✗	✗
Matthew Williams	Statkraft	✓	✓
Rhiannon Calado	National Grid	✓	✓
Scott Berrie	National Grid Interconnectors	✗	✓
Tom Edwards	Cornwall Energy	✓	✓
Attendees			
Matt McKeon	ELEXON (<i>Design Authority</i>)	✓	✓
Toby Godrich	ELEXON (<i>Lead Lawyer</i>)	✗	✗
Elliott Hall	ELEXON	✓	✓
David McCrone	Ofgem	✓	✓
Elizabeth Johnstone	National Grid Interconnectors	☎	✗
Damian Hudson	BritNed	✓	✓
Mauricio Cepeda	Gazprom Marketing and Trading	✓	✗

Appendix 3: Glossary & References

Acronyms

Acronyms used in this document are listed in the table below.

Acronyms	
Acronym	Definition
AEI	Actual Energy Indebtedness
BM	Balancing Mechanism
BMRS	Balancing Mechanism Reporting Service
BSC	Balancing Settlement Code (<i>industry Code</i>)
CADL	Continual Acceptance Duration Limit
CAP	Credit Assessment Price (<i>parameter</i>)
CCP	Credit Cover Percentage
CEI	Credited Assessment Energy Indebtedness
ECVAA	Energy Contract Volume Allocation Agent (<i>BSC Agent</i>)
ECVN	Energy Contract Volume Notification (<i>contract notification</i>)
ECVNA	Energy Contract Volume Notification Agent (<i>Party Agent</i>)
FPN	Final Physical Notification
HH	Half-Hourly
IWA	Initial Written Assessment
MEI	Metered Energy Indebtedness
MVRN	Metered Volume Reallocation Notification
MVRNA	Metered Volume Reallocation Notification Agent
NIV	Net Imbalance Volume
TEI	Total Energy Indebtedness
TERRE	Trans-European Replacement Reserves Exchange

External links

A summary of all hyperlinks used in this document are listed in the table below.

All external documents and URL links listed are correct as of the date of this document.

External Links		
Page(s)	Description	URL
4	P305 page on the ELEXON website	https://www.elexon.co.uk/mod-proposal/p305/
5	Issue 35 page on the ELEXON website	https://www.elexon.co.uk/smg-issue/issue-35-timing-of-gate-closure-and-related-matters/

External Links		
5	Issue 61 page on the ELEXON website	https://www.elexon.co.uk/smg-issue/issue-61/
6	P342 page on the ELEXON website	https://www.elexon.co.uk/mod-proposal/p342/
12	P344 page on the ELEXON website	https://www.elexon.co.uk/mod-proposal/p344/
19	P282 page on the ELEXON website	https://www.elexon.co.uk/mod-proposal/p282-allow-mvrns-from-production-to-consumption-or-vice-versa/