Stage 03: Assessment Consultation

What stage is this document in the process?

01 Initial Written Assessment

02 Definition Procedure

03 Assessment Procedure

04 Report Phase

P251

Revision of the election process for BSC Panel Industry Members

The Proposer wishes to improve the current Panel election process, which involves non-transferable preference votes. Arguably, the current process may incentivise tactical voting and can lead to results which are not reflective of voters' choices.

Modification P251 seeks to improve the procedure for electing the Industry Members of the BSC Panel, through adopting a standard Single Transferable Voting system.

Modification Group initially remains neutral on the modification P251 'Revision of the election process for BSC Panel Industry Members'

High Impact:
The BSC Panel and participants in Panel elections

Low Impact:
ELEXON

Contents

About this document:

The purpose of this Assessment Consultation is to obtain views or further evidence from BSC Parties and other interested parties on matters discussed in this document. The P251 Modification Group will then discuss the consultation responses before making its recommendations to the Panel on 08 April 2010.

There are 3 parts to this document. This is Part 1. Part 1 provides details of the solution, impacts, costs, benefits and the potential implementation activities associated with this change.

Part 2 (Attachment A) sets out the additional background information including examples of voting results using current method and STV method.

Part 3 (Attachment B) is the Assessment Consultation Questions response form, which includes all the questions highlighted in Part 1 of the Assessment Consultation document.

1 Summary

Why Change?

The Proposer of Modification P251 believes that the voting system currently used for the election of Industry Panel has various shortcomings, and could be improved.

The Issue

The P251 Modification Group acknowledged three areas of concerns under the current system:

- The calculation currently used to determine the 'quota' of votes required for a candidate to be elected means that all places cannot be filled in the first round of voting. A second, third and fourth (or 'further') round are always required, and any tie in first and second preference votes in that further round will be decided by chance, ignoring third preference votes cast.;
- Voting forms are discarded through each round rather than all preferences being taken into account. This means that votes are wasted and it can lead to a minority of voting papers determining the majority of seats; and
- The complexity of the system potentially limits parties' participation

Solution

Improve the procedure for electing the Industry Members of the BSC Panel through adopting a standard **Single Transferable Voting** (STV) system, which is a preferential voting system designed to minimise 'wasted' votes, provide proportional representation, and ensure that votes are explicitly cast for individual candidates rather than party lists.

Impacts & Costs

All Trading Parties (generators, Suppliers, non-physical traders, Interconnector Error Administrators and Interconnector Users) are eligible to vote in Panel elections and will be impacted by this Modification Proposal.

Implementation

The Group agreed that the implementation date should be 5 WDs after an Authority decision if a decision is made before 14th June 2010; otherwise, P251 will be implemented in the next available release.

The majority of the Group remained to be convinced that the implementation of P251 would better facilitate the Applicable BSC Objectives. The minority of the Group members believed P251 would have merits under Objective (c) and/or (d).

Recommendations

The Group noted the issues under the current Panel election process, but were keen to seek advice from the Electoral Reform Society (ERS) in terms of the calculation of the quota and would consider raising an alternative solution based on the suggestions from ERS and assessment consultation responses.

2 Why Change?

The BSC Panel exercises judgement on proposed amendments to the Code and makes direct recommendations to the Authority. The Proposer notes that it is thus highly influential, and its decisions can affect BSC Parties profoundly. As such, and in line with overall good governance principles, the election of candidates to the Panel should be an objective and transparent process. With the prospect of a greater degree of self-governance possible in the future, Parties must be confident that governance arrangements, including the election of members to the Panel itself, are robust.

Current Panel Election Process

a) Nomination

The process for the election of the five Industry Panel Members is set out in Annex B-2 of the Code. Each **Trading Party** may nominate one candidate, and each trading party group (a Trading Party and every Affiliate of that Party) may submit one set of voting papers for each Energy Account held by the voting Trading Party in that trading party group (i.e. two sets - one for the Production Energy Account and one for the Consumption Energy Account). The Panel elections are carried out using a preference voting system.

Trading Parties

The following roles fall within the participation capacity of Trading Party:

- Suppliers
- Generators
- Interconnector Users
- Interconnector Error Administrators
- Non-Physical Traders

b) Voting Papers

Each submitted voting paper must indicate a first preference among the candidates. A voting paper may, but does not need to, indicate a second or third preference. However, the same candidate may not receive more than one preference in the same voting paper. Voting proceeds in a number of rounds.

Annex B-2, Paragraph 3.2.5, of Section B of the Code currently states that ELEXON will not disclose the preference votes cast by individual Trading Parties. Proposed Modification P251 does not seek to remove this limitation.

c) Voting Rounds

i) First Round

In the first voting round, the number of first preference votes allocated to each candidate is determined. The **qualifying total** for this round of the election is **(T/N) + 1**, where T is the total number of first preference votes in all voting papers and N is the number of Industry Panel Members to be elected. Any candidate who receives equal to or greater than the qualifying total is elected to the Panel.

ii) Second Round

In the second voting round, the remaining candidates are those not elected in the first round. The voting papers with first preference votes for candidates elected in the first round are discounted. The total number of first and second preference votes allocated to each other candidate on the remaining voting papers is determined. The **qualifying total** for this round of the election is now **(T'/N') + 1**, where T' is the number of first and second preference votes in all remaining voting papers and N' is the number of Panel Members remaining to be elected. Any candidate who receives equal to or greater than the qualifying total is elected to the Panel.

iii) Third Round

In the third voting round, the remaining candidates are those not elected in the first or second rounds. The voting papers with first or second preference votes for candidates elected in the first or second rounds are discounted. The total number of first, second and third preference votes allocated to each other candidate on the remaining voting papers is determined. The **qualifying total** for this round of the election is now **(T''/N'') + 1**, where T'' is the number of first, second and third preference votes in all remaining voting

papers and N" is the number of Panel Members remaining to be elected. Any candidate who receives equal to or greater than the qualifying total is elected to the Panel.

iv) Further Round(s)

A further round is necessary if any Panel Members remain to be elected after the third round which will always be the case under the current quota calculation. In this round, all voting papers are counted (i.e. including all those discarded in previous rounds), and the remaining candidates are ranked in order of the number of first preference votes allocated to them. The candidate(s) with the greatest number of such votes is elected. If there is a tie in the number of first preference votes between two or more candidates, the tied candidate(s) with the greatest number of second preference votes is elected. If there is a tie in the number of second preference votes between two or more candidates, ELEXON draws lots to select the candidate(s) to be elected from among those tied.

A worked example has been included in Attachment A of this document.

d) Replacement of Panel Members

In the event that a Panel Member ceases to hold office not less than six months before the end of their term of office, a replacement is elected for the remainder of the term using the process described above. However, only Trading Parties that voted for the resigning Panel Member (with a first, second or third preference vote), or who did not vote for (and who are not an Affiliate of a Trading Party who voted for) any elected Panel Member still serving, may participate in the election by nominating candidates or voting. As in the full election process, each of these eligible Trading Parties may nominate one candidate and only one Trading Party may submit voting papers per eligible trading party group.

If a Panel Member ceases to hold office less than six months before the end of his term of office, the Trading Party which nominated the resigning Panel Member is entitled to appoint a replacement Panel Member for the remainder of the term. If the Trading Party does not appoint a replacement, the position remains vacant until the next full election.

Panel Members

More information about the BSC Panel Members can be found here.

Defects

Modification P206 led to publication on the ELEXON website of certain aggregated voting data,[1] without divulging the votes of individual Trading Parties. The Proposer of Modification P251 considers that, while such transparency was a step forward, the voting system currently used for the election of Industry Panel Members could itself be improved. They suggest that the method now in place, constituting a multi-winner system involving **non-transferable** preferential votes and a different 'quota' calculation to that recommended by the Electoral Reform Society can lead to an unsatisfactory outcome for voting Parties.

Currently Trading Parties elect the Industry Panel Members (no more than five in accordance with B Section 1.1.2(b)), via three standard voting rounds and a further voting round if required. The Proposer has provided analysis of the 2008 Panel election results, which is included in the Attachment A to this document.

It is the view of the Proposer that, crucially, the BSC arrangements result in various shortcomings. For instance, a further round is always going to be required for all five Industry members to be elected, as the calculation used sets a high quota that makes it impossible for all the places remaining to be filled in former rounds; potentially all five might have to be decided by the further round. However:

[1] The total number of voting papers received and not discarded, the total number of first, second and third preference votes for each candidate across all voting papers, the total number of remaining voting papers in each voting round, the number of remaining Panel Member vacancies in each voting round, the qualifying total in each round, and the total number of qualifying preference votes allocated to the remaining candidates in all remaining voting papers in each round (Annex B-2 1.3).

- A further round can result in place(s) being decided by chance, even when it is clear that candidate(s) have more support than other(s), as where candidates have matching numbers of first and second preference votes, third preferences are ignored; instead lots are drawn by ELEXON. Even if one of these candidates has a clear majority of third preference and thus total votes, it will be down to chance whether they are elected or not.
- This also means that third preference votes for these candidates, and all preference votes for unsuccessful candidates, will have been cast in vain.
- Candidates with a majority of second/third preference votes can be elected instead of candidates with a majority of first/second preference votes.
- A minority of papers can select the majority of positions.
- The process is likely to encourage tactical voting.

3 Solution

How will P251 resolve the issues?

The Proposer seeks to improve the procedure for electing the Industry Members of the BSC Panel, through adopting a standard **Single Transferable Voting** (STV) system, which is a preferential voting system designed to minimise "wasted" votes and provide proportional representation. The Proposer believes that STV achieves this by transferring votes that would otherwise be wasted on sure losers or winners to other eligible candidates.

How does STV system work?

Each voter gets one vote, which can transfer from their first preference to their second preference and so on, as necessary. Candidates do not need a majority of votes to be elected, just a 'quota' (i.e. a defined share of the votes) determined by the size of the electorate and number of positions to be filled. P251 proposes to use the quota recommended by the ERS (**Q= T/(N+1)**) where T is the total number of valid votes cast and N is the number of Industry Panel Members to be elected. Any candidate who receives equal to or greater than the qualifying total is elected to the Panel.

If a voting Party's preferred candidate has no chance of being elected or has enough votes already, their vote is transferred to another candidate in accordance with their preferences. STV thus ensures that very few votes are wasted. A worked example has been included in the Attachment A.

What happens if there is a tie?

In the event of a tied vote, usual practice is to break the tie according to which of the candidates scored most first preferences, then second preferences (if tied on first preferences), third preferences (if tied on first and second preferences) and so on until the tie is broken.

Benefits of adopting STV

The Proposer believes that this Modification Proposal is a straightforward governance improvement: the election process itself shapes wider BSC governance and a clearer more robust election process is important.

The Proposer believes that the adoption of a standard Single Transferable Voting system would have the following benefits:

- A standard system should be more accessible for Parties and encourage participation in elections (and potentially in the Modification Process);
- Tactical voting would not be encouraged in the way that it may be by the present system; and
- Results would better reflect the votes cast, also encouraging participation and engagement.

Single Transferable Voting system

Also known as proportional representation through the single transferable vote (PR-STV).

Click here for 'How to conduct an election by the STV'.

Click here for an STV worked example.

eSTV is a program to facilitate the counting of an STV election. You can download the software here.

4 Potential Alternative Solutions

Potential alternative 1: adopt STV system with a different value of quota

The alternative adopts the same mechanism as the proposed STV solution, but uses another value for the quota: **Q= (T/(N+1))+x**. This differs from the one recommended by the ERS by the additional '+x'. The alternative gives a higher threshold of votes that a candidate must normally reach in order to win a seat, which is the number of valid votes divided by the number of seats plus one, with one being added to the outcome of this calculation and any fractional values being ignored.

In the single-seat situation the quota is half the votes plus one. A quick look at the formula shows that this principle can be easily extended to: in a five-seat constituency it is one- sixth (16.7%) plus one. The additional '+x' means candidate needs to get higher number of votes in order to be elected. More detailed logic of using this quota can be found here.

If we consider the scenario indicated in the table below, 60 votes, 6 candidates and 5 seats to be filled, it is possible that all candidates receive 1/6 of the total votes (Q=60/(5+1)). In this case, all six candidates receive an equal numbers of votes (10 votes). This is equal to the Q value derived using the Proposed solution. Therefore, six candidates all qualify to be elected to the five available seats. The Group considered alternative ways to increase the quota to avoid such situation.

The **first suggestion** is to add a small fraction (e.g. x=0.1) in the quota calculation. This keeps the hurdle relatively low, while avoiding the scenario outlined above. The Group considered that this might be all that is needed given that fractions of votes are transferred in proportion to preferences expressed under an STV methodology.

The **second suggestion** is to adopt the Droop Quota, which adds an additional 1 (i.e. x=1) in the quota calculation. This will give a higher hurdle than the other solutions, but again, avoids the scenario outline above.

Number of votes	Q=T/(N+1)	Q'= (T/(N+1))+0.1	Q"= (T/(N+1))+1
60	10	10.1	11
70	11.67	11.77	12.67
80	13.33	13.43	14.33
90	15	15.1	16

The Group considered that this potential alternative solution shared the advantages and disadvantages of the Proposed solution with the additional benefit of avoiding a situation where in certain, very limited, circumstances the number of candidates meeting the quota exceeds the number of available seats. The table below summarises the Group's initial views on the pros and cons of this potential alternative solution:

Pros and Cons		
Area of discussion	Benefits	Disadvantages
Determine the way to calculate the quota	- STV system recommended by the ERS, a more recognised method than the baseline - Less incentive to vote	- More complex administration mechanism than the baseline

Ways to determine the 'quota'

Current process adopts **Q= (T/N) +1** as the qualifying total.

P251 proposes to use the quota recommended by the ERS as: **Q= T/(N+1)**

The Group also considered an alternative, derived from the Droop quota: **Q= (T/(N+1))+1**

	tactically - Never run out of options - Better reflect voters' views - Avoids the situation where in certain, very limited, circumstances the number of candidates meeting the quota can exceed the number of available seats	

Potential alternative 2: reduced election mechanism

One Group member suggested a potential alternative which adopts the simplified election mechanism of the First Past Post (FPP) methodology. Instead of voting up to 3 preferences, electors just vote for a single preference, and the top 5 (for 5 vacancies) will be elected.

Pros and Cons		
Area of discussion	Benefits	Disadvantages
The appropriateness to adopt the FPP system and the way to resolve tie	- Simple system, easier to administrate and understand - High transparency, may encourage more participation - Fix all perceived defects under the current process - Used for political elections - Better value of election costs (reduced administration effort from ELEXON))	

Potential alternative 3: compulsory 3 preferences on each vote

One Group member suggests utilising the STV election process, but making all the 3 preferences compulsory to reduce potential for tactical voting. The Group felt that some trading parties might just want to vote for a particular candidate, and knowing that their voting papers will be classified invalid, they might choose not to vote. Hence, this potential alternative will not encourage participation in the panel election.

Pros and Cons		
Area of discussion	Benefits	Disadvantages
How to encourage election participation	- May reduce tactical voting, fairer outcome - Adopt STV system recommended by the ERS	- Forcing candidates to fulfil all the preferences, may discourage voter participation

5 Potential New Modification

When P251 was raised at the Panel in February 2010, other elements of the Panel election process were discussed. One question raised was why, under the current Panel election voting process, **Trading Parties** are entitled to submit one vote for each Energy Account (Production and Consumption) that they hold?

Since each Trading Party will always have a Production and Consumption account it means that they will always have two votes.

This question was again raised at the P251 Modification Group meeting, and it was queried whether changing the elections process so that each Trading Party only receives one vote could form an Alternative to P251.

Modification Proposal P251 concerns the manner in which the preferences expressed in the votes that are cast are counted and the quota that is required to be reached for candidates to be elected. It does seek to change who can vote or how many votes may be cast. The number of votes that Parties have was therefore deemed out of scope of P251.

Since the P251 meeting, a new Modification Proposal (P252) has been raised to address this issue. P252 is due to be presented to the Panel on 11 March. Like P251, P252 will need to be submitted to the Authority in May in order to impact the Panel elections process for this year. To meet these timescales a short 5 Working Day Assessment Consultation will be required.

Following the Panel meeting on 11 March the P252 Modification Group will meet on 12 March to discuss the solution, confirm consultation questions and provide views on the Applicable BSC objectives. P252 will then be issued for assessment consultation between 12 -19 March 2010.

We appreciate that this is a tight turn around and suggest that Parties begin to consider the new Modification P252 prior to the assessment consultation being issued.

6 Impacts & Costs

Costs

ELEXON Cost (one-off implementation cost)		ELEXON Service Provider cost	**Total Cost**
Man days	Cost		
5 Man days	£1.2K	0	**£1.2K**

Indicative industry costs
None

Impact on BSC Systems and process	
BSC System/Process	Potential impact
BSC Systems	None

Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Potential impact
BSC Agent/service providers	None

Impact on BSC Parties and Party Agents
All Trading Parties (generators, Suppliers, non-physical traders, Interconnector Error Administrators and Interconnector Users) are eligible to vote in Panel elections and will be impacted by this Modification Proposal.

Impact on Transmission Company
None. The Transmission Company is not eligible to vote for Industry Panel Members, as it appoints its own member of the Panel.

Impact on ELEXON	
Area of ELEXON's business	Potential impact
Panel administration	ELEXON would need to adopt the proposed solution for future Panel elections following the approval of this proposal.

Impact on Code	
Code section	Potential impact
Section B	Annex B-2 will be impacted as a result of updating the election process.

Impact on Code Subsidiary Documents
None

Impact on Core Industry Documents and other documents
None

Other Impacts
None

Recommendation

Modification Group recommended the implementation date to be 5 WD after an Authority decision.

7 Implementation

The Group noted the preliminary work carried out by ELEXON before the Panel Election, for example drafting educational paperwork to enable participants to understand the election process prior to 21st June biennially. ELEXON agreed to draft guidelines including the pending proposed and alternative solution in advance.

The Group agreed that the implementation date should be 5 WD after an Authority decision if a decision is made before 14th June 2010; otherwise, P251 will be implemented in the next available release.

8 The Case for Change

Concerns of current process

The Group commented on using 'proprietary' electoral methods in the circumstances for a Panel election, because they are designed for an electorate of hundreds of thousands rather than a hundred. In those circumstances, T is always much greater than N and bigger numbers behave in a more statistical manner.

The Group noted the comments made by a Panel Member, who was involved in the design of the current election process. A number of different voting methods had been considered at the time and the current election mechanism was developed. The intention had been to ensure that every participant who was entitled to cast a vote ended up with an elected member that they could communicate with, which was seen as a benefit.

The Group agreed that there are three aspects of defects under the current voting of Panel election process.

1. Discarding votes

The Proposer iterates that a valid electoral system should protect minority rights while maintaining the majority's right to a majority of seats. The Group considered the current mechanism for counting the preferences in the voting forms and submitted by Trading Parties. The Group observed that the way in which voting forms are discarded (without preferences being transferred) could give outcomes where a minority of votes determine the majority of seats. This may be considered to be unrepresentative of the preferences of the Parties that had voted. Because STV ensures very few votes are wasted, most voters can identify a representative that they helped to elect.

E.g. Currently if one candidate was elected with a strong majority in round 1, papers with the candidate as 1st choice are excluded from rounds 2 & 3. Those making it through the 1st round have more chance of electing one of their choices as both/all their preferences are taken into account – they effectively have 2 or 3 votes, whereas voters whose 1st choice was elected in round 1 do not get their other preferences counted. Three candidates could be determined by the minority of papers counted in which rounds, as well as potentially the last seat in the further round.

2. Calculation of the 'quota'

The Group considered the current quota used in each round of the election and the suggestion that this results in very few candidates being elected in Round 1.

Annex B-2 has the formula **(T/N)+1**, with no prescription as to what to do with any fraction in the answer. It could be argued that, with vacancies (N) = 5, if one candidate polls one fifth (i.e. 20%) of the votes (T), then the candidate is elected. In this case, the formula should give the result as '20%' not 'more than 20%', because if 5 candidates polled an equal number (i.e. 20% each) (and one candidate received zero votes), then they are clearly the five to elect. (If it is 'more than 20%', then none would be elected in the first round, which doesn't make sense in this situation)

When the total votes cast (T) is not wholly divisible by N, then the answer needs to be rounded up to achieve 20%, not have 1 added. So formula should be **ROUNDUP** (T/N), not (T/N)+1.

When applied to the last election, where 59 votes were cast, then under the ROUNDUP

rule the qualifying number of votes is 12, so 3 Panel Members should have been elected in the first round.

The Group observed that the lower quota in the STV system accords with this principle and will ensure more candidates are elected in the first round so that the surplus votes can be transferred proportionally to 2nd and 3rd preferences.

3. Complexity of the system

The Group felt that the complexity of the current election process could discourage participation in the election. The Group observed that in the 2008 Panel election, only 59 of 154 votes were cast. There was a view that adopting a standard mechanism of counting up votes, such as STV, which ensures that very few votes are wasted, would encourage more candidates to stand and hence a better turn-out. Different results of recalculating the 2008 election can be found in Attachment A of this document.

Views from the Electoral Reform Society

We sought views from the ERS, however, the society could not comment on the Panel elections. They would only issue advice on technical queries about the STV system:

> *'…In terms of the advantages of STV, we feel it offers voter the best and most effective choice. If your preferred candidate has no chance of being elected or has enough votes already, your vote is transferred to another candidate in accordance with your instructions. STV thus ensures that very few votes are wasted, unlike other systems where only a small number of votes actually contribute to the result. This means that most voters can identity a representative that they personally helped to elect…'*

ERS also suggested that if we are using STV for your election, they would recommend that the T/(N+1) formula is used for the reason below:

> *'… both the Hare quota (T/N) and the Droop quota ((T/(N+1))+1) cannot guarantee that a group of candidates supported by a solid majority of voters would receive a majority of seats whereas the Hagenbach-Bischoff quota (T/(N+1)) recommended by the Electoral Reform Society prevents such anomalies from occurring and could therefore be considered more democratic.*
>
> *Admittedly this is arguably more relevant to public elections where the party system is more commonplace but, as I stressed before, our work is primarily focused on those elections rather than non-public elections like yours where candidate groupings are less common.'*

Considerations on the previous Modifications

The Group reviewed the intention and solution of the related Modifications P129 (which proposed to enable the BSC Panel, where there is a substantial majority agreement, to make decisions to implement or reject Modification Proposals) and P206 (which proposed that Annex B-2 of Section B of the Code should be amended to require ELEXON to disclose the number of preference votes received in each voting round by candidates standing for election to the BSC Panel) and concluded they are not relevant to P251 and noted the suggestion in P129 decision that having a Panel elected by different constituencies of Trading Parties would not be in keeping with the Panel's obligations to act impartially as industry experts.

Group's initial views of P251 benefits

The majority of the Group felt neutral in terms of whether the implementation of P251 would better facilitate all Applicable BSC Objectives. Two members of the Group believed P251 would have merits under Objective (c) and/or (d).

Further details are given in the table below.

Group's view of benefits of P251 against the Applicable BSC Objectives	
Description of Objective	Identified benefit
a) Efficient discharge of the obligations of the Transmission Licence.	None identified.
b) Efficient, economic and co-ordinated operation of the GB transmission system.	None identified.
c) Promoting effective competition in the generation and supply of electricity and in the sale and purchase of electricity.	A minority of the Group believed the proposed solution is a robust process which should encourage confidence and engagement with the BSC, promoting effective competition
d) Promoting efficiency in the implementation and administration of the balancing and settlement arrangements.	The Group believed the proposed solution is marginally more complex to count up and transfer preferences but the impact is so small as to be neutral against Objective (d). A minority felt greater engagement in the election would make the administration costs better value for money, therefore there is a marginal gain in efficiency.

9 Further Information

More information is available in

Attachment **A**: Additional Information

This information includes:

- Modification Group membership
- Terms of References
- Analysis of the 2008 election
- Worked examples

Attachment **B**: Assessment Consultation Questions

A complete version of the consultation and impact assessment responses received are available on the P251 page of the ELEXON website.