



## Elections to the Northern Ireland Assembly

### The Single Transferable Vote System

The Assembly consists of 90 MLAs (Members of the Legislative Assembly) representing 18 constituencies. Elections are usually held every 5 years. Voting at an Assembly election is by secret ballot using a system of Proportional Representation (PR), known as the Single Transferable Vote (STV).

#### What is Proportional Representation?

The term describes types of electoral systems where seats in a parliament are won more or less in proportion to votes cast. It aims to ensure that candidates are elected according to the preferences of the electorate, where the voter can indicate an order of preference for 1 or more candidates and more than one candidate is elected to represent a constituency. This differs from the First Past the Post system, used for electing MPs to Westminster, in which voters choose only 1 candidate and the candidate with the most votes wins the single seat.

#### What is STV?

STV is a type of PR system. In an election using STV, constituencies elect a set number of candidates. In Northern Ireland this is 5. A party standing in an election can put forward as many candidates as it likes per constituency.

Voters have as many preferences as there are candidates. They mark the candidates 1, 2, 3, etc in order of preference, with 1 for their first choice candidate, 2 for their second, and so on. Voters do not have to rank-order all candidates - they can choose as many or as few as they like. Lower preferences may influence who gets elected in later stages of the count, so your ballot paper is potentially more influential the more candidates you rank.

With STV, seats are awarded in proportion to votes cast, with later preferences expressed taken into account.

#### How does STV work?

Each voting paper is checked to see if it has been correctly filled in. Those that are not (spoilt papers) are removed from the count as only valid votes are used to calculate the quota

#### The First Stage

Voting papers are sorted into bundles according to **first preferences** and counted.

A **quota** is then calculated for the constituency. This is the number of votes needed by a candidate to get elected. The quota is calculated using the formula below:

$$\text{Quota} = \left[ \frac{\text{Total number of valid votes cast in constituency (V)}}{\text{Number of seats (S) + 1}} + 1 \right]$$

Since the election of 2 March 2017, all Northern Ireland constituencies are 5-member, i.e. the number of seats (S) is 5. This means the quota is **1/6<sup>th</sup> of the votes cast plus 1 vote**.

**Example:** In an election where 35,487 valid votes were cast in a constituency, the quota of votes required for a member to be elected is 5,975.

$$\left[ \frac{35487}{5 + 1} \right] + 1 = 5914 + 1 = 5915$$

*NB: The whole number is always used in calculating the quota. Should there be a fraction, the numbers after the decimal point are ignored, eg, in calculation above, 5914.5 becomes 5914.*

Any candidate who reaches or exceeds the quota is deemed to be elected at this stage of the count. If a candidate has more first preference votes than the quota then they have a surplus vote.

### What happens next?

At the second stage of the process, and at all subsequent stages, the count will be either the transfer of the surplus vote of a candidate deemed to be elected; or the exclusion of one or more candidates with the least number of votes and the transfer of their votes to other candidates.

If the total number of surplus votes could elect another candidate or change the ranking order of candidates after the first stage, then the second stage of the count will be the *transfer of the surplus vote*. The ballot papers of the elected candidate are redistributed, at a reduced value, to the next available preference on each ballot paper.

### Example:

The quota in constituency X is 4500 votes.

| The results of the election are: | Stage 2                                    | Stage 3 |
|----------------------------------|--|---------|
| Candidate A    5,000             | Elected (at first stage)                   |         |
| Candidate B    4,200             | + 357 = 4,557 (elected with surplus of 57) |         |
| Candidate C    3,900             | + 51 = 3,951                               |         |
| Candidate D    3,000             |  |         |
| Candidate E    2,500             |  |         |

|             |       |  |
|-------------|-------|--|
| Candidate F | 1,000 |  |
| Candidate G | 500   |  |
| Candidate H | 270   |  |
| Candidate I | 100   | - eliminated and votes transferred at full value |

Candidate A received 5000 first preference votes and is therefore elected on the first count, having exceeded the quota. Candidate A has a **surplus of 500** votes.

This surplus will be transferred to other candidates according to the second preferences indicated on the ballot papers. It would not be a fair system to transfer just 500 of Candidate A's surplus papers to other candidates, as there would be no way of ensuring that the 2<sup>nd</sup> preferences on these 500 papers were representative of all the 5000 ballot papers that candidate A had received: 4,500 people would not have their second preferences considered. For fairness, *all* the candidate's ballot papers which indicate a 2<sup>nd</sup> choice candidate are redistributed. These are called **transferable ballot papers**. In this example, there were 4,900 transferable ballot papers, as 100 of those who gave a 1<sup>st</sup> preference vote to Candidate A did not express a 2<sup>nd</sup> preference.

The transferable ballot papers are reallocated to the second choice candidates at a transfer value (a fractional percentage of one vote). This reduces the value of each vote transferred, so that the total redistributed vote is not worth more than the value of the candidate's surplus. The transfer value is worked out as follows:-

$$\left[ \frac{\text{Surplus of 500}}{4,900 \text{ transferable ballot papers}} \right] = 0.102$$

So, when we talk about transferring the surplus, we really mean **transferring the VALUE of the surplus** (across all the transferable papers) rather than transferring the actual surplus papers.

If Candidate B received 3500 of Candidate A's transfers, the total value of the votes received is:

$$(3,500 \times .102) = 357.$$

If candidate C received 500 transfers, the total value of votes received would be:

$$(500 \times .102) 51.$$

Candidate B would therefore be elected on the 2<sup>nd</sup> count, as their vote would increase from 4,200 to 4,557, which exceeds the quota of 4,500.

### What happens if no one reaches the quota?

If no candidate reaches the quota when the 1<sup>st</sup> preferences votes have been counted, then candidates with the lowest number of 1<sup>st</sup> preferences can be eliminated. Candidates will be eliminated if transferring their votes could make another candidate reach or exceed the quota, or change the ranking of the candidates. If

eliminated, their votes are redistributed to the other candidates, on the basis of 2<sup>nd</sup> preferences. The transfer value of each transferable paper is 1 as that candidate is eliminated.

In later stages, when those being eliminated may have received transfers - these votes will be transferred at the value received.

**The process of transferring votes of candidates who exceed the quota or eliminating candidates is repeated until all 5 seats have been filled.**

### How many stages are there?

There will be as many stages to the count as are needed to fill all 5 seats in the constituency. The first 5 candidates to reach or exceed the quota will be successful. A candidate may be elected without reaching the quota as all other candidates have been eliminated.

### Additional Information

For analysis of all Assembly elections, go to:

[http://education.niassembly.gov.uk/post\\_16/your\\_mlas\\_your\\_constituency/activity](http://education.niassembly.gov.uk/post_16/your_mlas_your_constituency/activity) and click on the Links icon.

Further information on elections is available from the websites of the Electoral Commission and the Electoral Office:

[www.electoralcommission.org/northernireland](http://www.electoralcommission.org/northernireland)  
[www.eoni.org.uk](http://www.eoni.org.uk)

Electoral Commission [www.electoralcommission.org/northernireland](http://www.electoralcommission.org/northernireland)  
Electoral Office: and [www.eoni.org.uk](http://www.eoni.org.uk)

The Northern Ireland Assembly Education Service Website  
<http://education.niassembly.gov.uk>