Research and Information Service
Briefing Note

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Single Transferable Vote

The following paper is in response to a request from the Environment Committee on information surrounding the Single Transferable Vote (STV) model.

Introduction

Part 3 (Cl10) of the Local Government Bill provides for the filling of positions of responsibility in the new councils; these are:

- chair of the council;
- deputy chair of the council;
- chair of any committee of the council;
- deputy chair of any committee of the council;
- member of a cabinet-style executive of the council; and
- external representative of the council.

When filling these posts, a council must decide on the method to use based on the options provided in Schedule 3, which are:

1. By nomination where the nominating officer of each party selects a position of responsibility (Part 1 of Sch 3)
2. By election using the Single Transferable Vote (Part 2 of Sch 3)

(Note: where a council appoints a committee, councillors are to be appointed by nomination through the nominating officer. This is detailed in Schedule 4)

The Single Transferable Vote (STV)[1] system of proportional representation is used to elect Members of the Assembly. This system is also used in the Northern Ireland Local Government and European Parliament elections and in elections in the Republic of Ireland.

The STV system works as follows:

1. Voters in each constituency vote for as many candidates as they wish in order of preference. Preferences are declared numerically, with '1' being written alongside the voter's first preference candidate, '2' alongside the second choice and so on.

2. Each voting paper is checked to see if it has been correctly filled in and any spoilt papers[2] are removed from the count to give a total valid count.

3. To be elected, a candidate must receive a minimum number of votes - the 'quota' - determined by a set formula. This is calculated by dividing the total number of valid voting papers cast by the number of seats to be filled plus one:

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

Example: In the 2011 Assembly Election, 35,487 valid votes were cast in the constituency of Lagan Valley. The quota of votes required therefore for a member to be elected was 5070

$$\left\{ \frac{35487}{6+1} \right\} + 1 = 5070$$

4. Voting papers are sorted according to first preferences. Any candidate attaining or exceeding the quota is deemed to be elected.

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[1] See R.A. Newland & F.S. Britton "How to Conduct an Election by the Single Transferable Vote", Electoral Reform Society, London: 1973 for a detailed description of STV. Available at http://www.cix.co.uk/~rosenstiel/stvrules/

[2] Spoilt ballots include those where the first preference candidate cannot clearly be determined e.g. due to the use of Xs instead of numbers. If an "X" has been placed against only one candidate, this will be taken as the first preference and the vote will be counted. Also, if a voter has left out a number (e.g. voting 1,2,3,5,6) their votes up to the missing number will be accepted and the remaining numbers will be ignored (votes 1,2 and 3 only are valid in this example).

Example: this can be seen below from the results of the 1994 European Parliament election.

Candidate	Party	1st Pref	2nd Pref transfer	2nd Pref total
Anderson, James	Nat Law	1,418	74.70	1,492.70
Boal, Myrtle	Con	5,583	523.95	6,106.95
Campion, June	Peace	1,088	39.15	1,127.15
Clark-Glass, Mary	Alliance	23,157	218.55	23,375.55
Cusack, Niall	Labour	2,464	54.90	2,518.90
Hartley, Tom	Sinn Fein	21,273	5.10	21,278.10
Hume, John	SDLP	161,992	n/a	161,992.00
Kennedy, Michael	Nat Law	419	24.90	443.90
Kerr, David	Ind for Ulst	571	306.15	877.15
Lowry, John	Workers	2,543	36.00	2,579.00
McGuinness, Dodie	Sinn Fein	17,195	43.95	1,723.95
Molloy, Francie	Sinn Fein	16,747	9.60	16,756.60
Mooney, Robert	Ind	400	55.95	455.95
Nicholson, James	UUP	133,459	16,082.25	149,541.25
Paisley, Ian	DUP	163,246	-23,279.00	139,967.00
Ross, Hugh	Ind	7,858	4,717.05	12,575.05
Thompson, Susanna	Nat Law	454	80.40	534.40

Source: ARK (Northern Ireland Social and Political Archive)[3]

The first step is to count the total number of votes cast in a constituency (559,867) and to arrive at the quota. With three seats to be filled this is 559,867÷(3+1) = 139,967.

John Hume and Ian Paisley were elected on the first count because the number of first preference votes they received took them above the quota.[4]

5. The next stage of the count transfers the surplus votes of the candidate with the largest number of votes (in the example above this is Ian Paisley) among the other candidates. The surplus is the number of votes received in excess of the number required to reach the quota, which in the case of the example is 163,246-139,967 = 23,279.

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[3] ARK, Northern Ireland Elections http://www.ark.ac.uk/elections/fe94.htm
[4] ibid

In the example all 163,246 first preference ballots cast for Paisley are examined again to determine the distribution of second preference votes among the other candidates.

Surplus votes are transferred at a fractional value to the remaining candidates, because it is only the surplus votes that are redistributed.[5]

> In the example using Ian Paisley's votes, eligible candidates receive only 23,279÷163,246 = 0.1426 of an additional vote for each recorded second preference.
>
> It transpired that 112,778 of Ian Paisley's supporters had cast a second preference for James Nicholson, who thus received 112,778 x 0.1426 = 16,082 extra votes. These, added to his own 133,459 first preference votes, were sufficient to put him over the quota and he too was deemed elected at the second stage.
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> If the transfer of Ian Paisley's votes had been insufficient to elect the third and final MEP, then John Hume's surplus would have been distributed in a similar way.[6]

6. If all seats are still not filled, candidates with the least number of votes are excluded and their votes are also transferred according to next available preference.

7. This process continues until all available seats have been filled. At the Northern Ireland Assembly elections in June 1998, counting in the Strangford constituency went through 18 stages before the required six of the total 22 candidates were elected.[7]

For the advantages and disadvantages of STV, see the Electoral Reform Society
http://www.electoral-reform.org.uk/?PageID=483

For an illustration of the STV process see the Assembly Education Service's short animation, available at:
http://education.niassembly.gov.uk/post_16/how_do_we_elect_mlas/video

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[5] All the most preferred candidate's voters have an equal right to decide how that candidate's surplus vote is transferred or re-distributed to second preferences, so all the elected candidate's transferable votes are transferred with a fractional transfer value (obtained by taking the surplus and dividing it by the total number of papers that were transferable - the result is calculated to two decimal places and the remainder ignored).

[6] Economic and Social Research Centre (Ark) Northern Ireland Elections http://www.ark.ac.uk/elections/fe94.htm
[7] ARK, Strangford http://www.ark.ac.uk/elections/98str.htm