

Hare-Clark

What is the Hare-Clark electoral system?

Members of the ACT's Legislative Assembly are elected using a **proportional representation** electoral system known as the Hare-Clark system.

Hare-Clark is a type of proportional representation system known as the **single transferable vote** method.

Electors vote by showing **preferences** for individual candidates. To be elected, a candidate needs to receive a **quota** of votes. Each elector has a single vote, which can be transferred from candidate to candidate according to the preferences shown until all the vacancies are filled.

How did the Hare-Clark electoral system get its name?

It was named after the English lawyer, Sir Thomas Hare, who developed a proportional representation system in 1859, and Andrew Inglis Clark, who was the Tasmanian Attorney General between 1887 and 1892 and again from 1894 to 1897. Clark modified Hare's system and was responsible for its introduction in Tasmania. It was first used in Tasmania in 1897. It is still used in Tasmania today, to elect the Tasmanian House of Assembly.

In the ACT, the Hare-Clark system is used to elect 25 members from 5 multi-member electorates. Electors in the 5 electorates - **Brindabella, Ginninderra, Kurrajong, Murrumbidgee** and **Yerrabi** - each elect 5 members.

The Hare-Clark electoral system in brief

Step 1	Count the first preference votes for each candidate.
Step 2	Calculate the quota: $\frac{\text{total number of formal votes}}{\text{number of vacancies} + 1} + 1$
Step 3	Any candidate with votes equal to or greater than the quota is declared elected. <ul style="list-style-type: none"> ▪ If all vacancies have been filled, the election is completed. ▪ If all vacancies have not been filled, does any candidate have more votes than the quota? <ul style="list-style-type: none"> ▪ If yes then go to step 4. ▪ If no then go to step 5.
Step 4	Distribute the successful candidate's surplus votes to continuing candidates according to the further preferences shown on the ballot papers by those voters. (A 'continuing candidate' is one neither elected nor excluded.) Calculate each continuing candidate's new total votes, then go back to step 3.
Step 5	If there are more continuing candidates than there are vacancies remaining unfilled, exclude the candidate with the fewest votes and distribute this candidate's votes to continuing candidates according to the further preferences shown by those voters. Calculate each continuing candidate's new total votes then go back to step 3. Or, if the number of continuing candidates is equal to the number of vacancies remaining, all of those candidates are declared elected and the election is completed.



Voting

Voters mark preferences for candidates in the order of their choice by using the numbers 1, 2, 3, 4, 5 and so on. If there are 5 vacancies, voters are instructed to show a minimum of 5 preferences. Voters who wish to express preferences for more than five candidates may do so by putting numbers in as many squares as they wish.

If a voter does not fill in the minimum number of squares as instructed, the vote will be counted up to the point where preferences stop, so long as a single first preference is shown.

Getting elected

To be certain of election a candidate has to receive a quota of votes. A quota is a specific number of votes which is calculated using the number of formal votes cast and the number of vacancies.

A candidate may be elected without a quota. This can happen when the number of candidates remaining in the count who have not been already elected or excluded is equal to the number of vacancies that remain to be filled.

How the quota is calculated

The quota to be used in an election is calculated by using the formula:

$$\frac{\text{total number of valid votes}}{\text{number of vacancies} + 1} + 1$$

The quota in a 5-member electorate will be one-sixth, plus one, or roughly 16.67%.

Ballot papers

Candidates' names are listed on the ballot papers in columns. Candidates nominated by registered political parties are listed in party columns, with the name of the party shown at the top of the column. Non-party candidates are included in one or more "ungrouped" columns on the ballot papers.

Where a registered party nominates only one party candidate in an election, that candidate is also included in an ungrouped column.

See the fact sheet on *Ballot Papers* for more information.

How votes are counted

Counting the first preferences

The first step in counting votes using the Hare-Clark system is to count the number of first preference (or number "1") votes for each candidate. Ballot papers without a figure "1" or with more than one figure "1" are called informal and cannot be included in the count. Ticks and crosses are not counted.

After all the formal first preference votes are counted, the quota can be calculated. Any candidate who has votes equal to or greater than the quota is now elected.

Transferring surplus votes from elected candidates

If a candidate receives a total number of votes equal to or greater than the quota, the candidate is elected. If an elected candidate has received an exact quota of votes, all of those votes are set aside and not counted further.

If a candidate has received more votes than the quota, the number of votes over the quota is called the candidate's surplus.

The value of the surplus votes gained by an elected candidate is passed on to other candidates according to the preferences indicated on ballot papers by the voters.

If a candidate has received more than a quota of first preference votes, all the ballot papers received by the candidate are distributed at a reduced value called a fractional transfer value (see box). If a candidate has received more votes than the quota following a transfer of votes from another elected candidate or from an excluded candidate, only that "last parcel" of ballot papers that the candidate received are distributed to continuing candidates at a fractional transfer value.

How a fractional transfer value is calculated

The fractional transfer value is calculated using the following formula:

$$\frac{\text{number of surplus votes}}{\text{total number of ballot papers with further preferences shown}}$$

After the surplus votes from an elected candidate have been distributed, the total number of votes which each candidate has received is recalculated. Any further candidates that have votes equal to or greater than the quota are elected. Provided vacancies remain to be filled, the surplus votes of any other elected candidates are then also distributed one by one.

Excluded candidates

If vacancies remain to be filled after all surplus votes from elected candidates have been distributed, the process of excluding the lowest-scoring candidate begins. The candidate with the smallest number of votes is "excluded" and his or her ballot papers are distributed to continuing candidates according to the preferences shown by the voters. Ballot papers from excluded candidates are distributed at the value at which they were received by the excluded candidate. Ballot papers received by the candidate as first preference votes have a value of "1", while ballot papers received following the distribution of a surplus will have a fractional transfer value. This will vary depending on the group of surplus votes from which they were received.

At each stage after ballot papers have been distributed from an excluded candidate at a particular transfer value, the total votes received by each continuing candidate are recalculated to determine whether any candidate has received votes equal to or greater than the quota.

The process of distributing surplus votes from elected candidates and excluding the candidate with the fewest votes continues until all vacancies are filled.

How are casual vacancies filled?

Under the Hare-Clark system, any vacancies arising in the Assembly are filled (if possible) by recounting the ballot papers that were received by the vacating Member in order to determine which candidate was the next most favoured candidate chosen by the voters who elected the vacating Member. Only those candidates who contested the original election and who indicate that they wish to contest the casual vacancy will be considered in this process.

If it is not possible to fill a casual vacancy using this method (for example, if no candidates from the election come forward wishing to contest the vacancy), the Legislative Assembly will choose a person to fill the vacancy.

If the vacating Member was elected as a member of a registered political party, the new Member chosen to fill the vacancy must be a member of this party. If there is no member of the relevant party available to be chosen, or if the vacating Member was elected as an independent, the person chosen to fill the vacancy cannot be a person who has been a member of a registered political party within the 12 months preceding the filling of the vacancy.

For more information, see the *Casual Vacancy* fact sheet.

Sample Hare-Clark scrutiny sheet

Number of vacancies: 3

Number of formal ballot papers: 24000

Quota: $\frac{24000}{3 + 1} + 1 = 6001$

Ballot papers										Votes								
Count	Blue	Red	Brown	Pink	Grey	Green	total ballot papers	transfer value	votes transfd	Blue	Red	Brown	Pink	Grey	Green	loss by fraction	total votes	Comments
1	10000	750	4000	2750	1500	5000	24000	1	24000	10000	750	4000	2750	1500	5000		24000	Blue elected
2		6000			4000		10000	0.3999	3999	-3999	2399			1599		1		Blue's surplus distributed
										6001	3149	4000	2750	3099	5000	1	24000	
3		1750	500		500		2750	1	2750		1750	500	-2750	500				Pink excluded
										6001	4899	4500	0	3599	5000	1	24000	
4		1500	500				2000	1	2000		1500	500		-2000				Grey being excluded
										6001	6399	5000	0	1599	5000	1	24000	Red elected
5			1750			2250	4000	0.3999	1599			699		-1599	899	1		Grey excluded
										6001	6399	5699	0	0	5899	2	24000	
6			1250			250	1500	0.2653	398		-398	331			66	1		Red's surplus distributed
										6001	6001	6030	0	0	5965	3	24000	Brown elected

Sample surplus distribution
In our sample scrutiny sheet, candidate Blue has 10000 first preference votes, and the quota is 6001 votes. Blue therefore has a surplus of 3999 votes. The fractional transfer value applied to Blue's ballot papers is 0.3999 (3999/10000). All 10000 ballot papers are distributed to continuing candidates, with each ballot paper having a value of 0.3999 of a vote. In other words, all of Blue's 10000 ballot papers are distributed with a total value of 3999 votes (10000 x 0.3999), which is equal to Blue's surplus.

Sample exclusion of a candidate
In our example scrutiny, when candidate Pink is excluded all of the 2750 votes, which were received as full value votes, are passed on at this value to other candidates. However, when candidate Grey is excluded, while the 2000 votes which were received at full value are passed on at that value, a further 1599 votes which were received at a value of 0.3999 are passed on to other candidates at this value.