

# Proportional Representation Voting System

## Proportional Representation

This is a voting system used in multi-member electorates which is designed to ensure that the number of successful candidates from each party and independents reflects as closely as possible the total vote received as a proportion of all the valid votes cast in an election. To be successful, a candidate is required to receive enough votes to reach a quota (not an absolute majority) which is based on the number of formal votes and the number of candidates to be elected. The Legislative Council of the parliament of Western Australia is elected using a proportional representation system.

In very general terms, under the notion of proportional representation, if a party or candidate received 40% of the formal vote, that party or candidate will gain 40% of the seats in the parliament. Thus if a political party received 40% of the vote in the Mining and Pastoral Region, it could expect to gain 2 of the 5 seats allocated to this region.

The quota required is calculated using the following formula:

$$\frac{\text{Number of formal votes per region}}{(\text{Number of MLCs to be elected per region} + 1)} + 1 = \text{quota required}$$

For example:

Mining and Pastoral Region

$$\frac{50,104}{(5 + 1)} + 1 = 8,351$$

In this example for the Mining and Pastoral Region, a candidate would need at least 8,351 votes to be elected. Note: the fraction obtained by dividing the number of formal votes (50,104) by the number of MLCs plus 1 (6), is rounded down before the 1 is added to obtain the quota required i.e. 8,351.

## Surplus Votes

Candidates who receive a number of votes equal to or greater than the quota, are elected immediately. Any votes of these elected candidates which are surplus to the quota are transferred to the remaining candidates at a reduced value known as a transfer value. The transfer value is calculated as follows:

$$\frac{\text{Candidate's number of surplus votes}}{\text{Total number of ballot papers the candidate received}} = \text{transfer value}$$

## Excluding Candidates

If at any stage there are no candidates with a surplus of votes and not all Council seats have been filled, the candidate with the fewest votes is excluded from the count.

The excluded candidate's ballot papers are distributed to the remaining candidates at the same vote value as they were received. In some counts this will mean ballot papers are transferred at the value of 1 while others will have various transfer values.

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