

**Proportional Representation
Member Calculation Method
for the 21st National
Assembly Elections**



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Overview

- Members of the National Assembly of the Republic of Korea is elected using a Supplementary Member System. There are 300 members, with 253 elected in single-member constituencies using first-past-the-post. 47 members are elected in a single nationwide constituency using proportional representation (PR).
- Each voter is therefore given two ballot papers. One to vote for their constituency member, one to vote for a political party for the PR member elections.
- For the 21st National Assembly elections the way the 47 PR seats are distributed to parties has changed.



Overview

- Previously, the 47 PR seats were allocated in a parallel system. This meant the 47 seats were simply allocated according to the proportion of votes they received (47 x PR vote share).
- For the 21st National Assembly elections, the 30 of the seats will be allocated in a semi-compensatory system. This means the number of constituency seats the party won will be taken into account when calculating PR seats. The other 17 seats will continue to use the parallel system.
- As before, PR seats will only be distributed to parties that received 3% or more of the PR vote or over 5 constituency member seats
- For the next National Assembly elections, all PR seats will be allocated in a semi-compensatory system.



Overview: NEC Issue Cards

The Way Proportional Representation Member Seats are Calculated has Changed!



Previously!

47 Parallel Seats



Now!

30 Semi-Compensatory Seats
+ 17 Parallel Seats

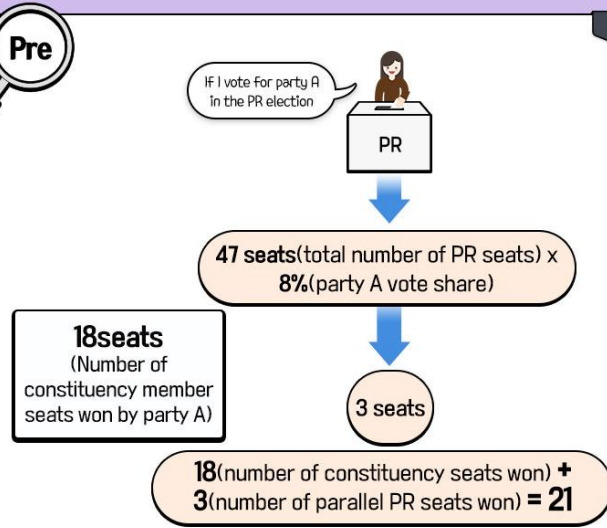
There is no change to the way voters cast their ballot (1 person 2 ballots)
One vote for a candidate in their constituency and
one vote for a party (proportional)
※ The total number of National Assembly seats is 300
(253 constituency members, 47 proportional representation members)



Overview: NEC Issue Cards (System Comparison)

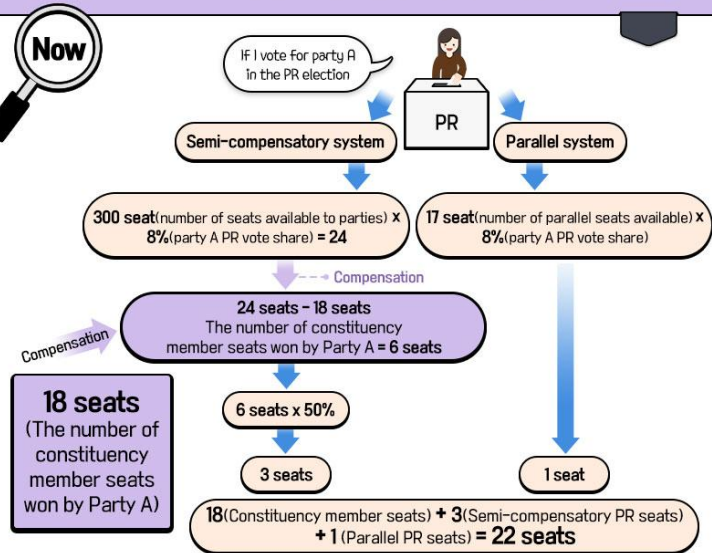
Parallel Supplementary Member Proportional Representation System

(Example: Party A receives 8% of the PR vote)



Semi-Compensatory Supplementary Proportional Representation System

(Example: Party A receives 8% of the PR vote)





Overview: NEC Issue Cards (Calculation Comparison)

What was the Previous System?

Parallel Supplementary Member Proportional Representation (PR) System

(Parallel: The proportional representation seats are distributed independently of the election results of the constituency member seats)

Pre

Parallel System(47 Seats)

Party	Number of Constituency Seats Won (①)	Proportional Representatives			Total Number of NA Seats by Party (① + ④)
		% of Votes in PR Election (②)	Total Number of PR Seats (③)	Number of PR Seats by Party (④ = ② X ③)	
A	18	8%	x 47	3	21
B	10	12%		5	15
⋮	⋮	⋮		⋮	⋮
total	253			47	300

Parallel system calculation method:

Total number of PR seats x Party's PR vote share

For These Elections, the System will Change in the Following Way!

Semi-Compensatory Supplementary Proportional Representation System

(Semi-Compensatory: The proportional representation seats a party wins is linked to the number of constituency seats it wins and the vote share it receives in PR elections)

Now

Semi-Compensatory(30 seats) + Parallel(17 seats)

Party	Number of Constituency Seats Won (①)	% of Votes in PR Election (②)	Total Number of NA Seats Available to Parties (③)	Proportional Representatives				Total Number of NA Seats by Party (①+⑥+⑦)
				Calculated Seats by Party (④=②X③)	Preliminary Number of PR Seats by Party (⑤=④-①)	Number of Semi-compensatory Seats by Party (⑥=⑤/2)	Number of Parallel Seats by Party (⑦)	
A	18	8%	X 300	24	6	3	1	22
B	10	12%		36	26	13	2	25
⋮	⋮	⋮		⋮	⋮	⋮	⋮	⋮
total	253						30	17

※ Semi-compensatory system calculation method:

(Total number of NA seats available to parties x Party's PR vote share - Number of constituency seats won by the party) ÷ 2

1. This assumes that all parties are parties that can be allocated proportional representation seats.
2. When calculating the total number of seats allocated to each party, this example does not consider any seats to be allocated remain or any readjustment is needed.



Overview

- How the seats are distributed and calculated will now be explained in detail.
- In general, the new semi-compensatory PR system (used for 30 of the 47 PR seats in this election, but scheduled to be used for all PR seats in future elections) has two steps.
- The first step uses a compensatory formula. The second step then adjusts the number of seats by part depending on if the total number of calculated seats in step one was either less or more than the total number of 30 PR seats available.
- Then for this election only, the last 17 PR seats will be allocated using the previous system.

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**Step One: Calculating the
Semi-Compensatory PR Seats
Allotted to Each Political
Party (Total 30 seats)**



Formula for Calculating the 30 Semi-compensatory PR Seats

The new basic formula for calculating proportional representation seats is as follows. For this election, 30 of the 47 proportional representation seats will be chosen this way:

$$\text{Number of Seats Allocated to Political Parties} = \frac{\left(\text{Total Number of National Assembly Seats} - \text{Number of Seats Won by Independents} \right) \times \text{Percentage of Vote for the Party in PR Ballots} - \text{Number of Constituency Member Seats the Party Received}}{2}$$

NOTE: When rounding, if the number is less than 1 it is counted as 0



Example

Example of an Election Result

<i>Seat Type</i>	<i>Party A</i>	<i>Party B</i>	<i>Party C</i>	<i>Party D</i>	<i>Independents</i>	<i>Total</i>
<i>Constituency Members</i>	100 Seats	80 Seats	40 Seats	30 Seats	3 Seats	253 Seats
<i>% Proportional Votes</i>	40%	30%	10%	20%	N/A	100%
<i>PR Seats</i>	9 Seats	5 Seats	0 Seats	15 Seats	N/A	29 Seats



Example – Party A Proportional Representation Seats Calculation

Party A's proportional representation seats in this example were calculated as follows:

$$\begin{array}{l} \text{Number of PR} \\ \text{Seats} \\ \text{Allocated to} \\ \text{Party A} \end{array} = \frac{\left(\begin{array}{l} \text{Total Number of} \\ \text{National Assembly} \\ \text{Seats (300)} \end{array} - \begin{array}{l} \text{Number of Seats} \\ \text{Won by} \\ \text{Independents (3)} \end{array} \right) \times \begin{array}{l} \text{Percentage of Vote for} \\ \text{Party A in PR Ballots} \\ \text{(0.40)} \end{array} - \begin{array}{l} \text{Number of Constituency} \\ \text{Member Seats Party A} \\ \text{Received (100)} \end{array}}{2}$$

9.4 (Results in 9 Seats)

2-1

Step Two - If the total number of seats allocated in step one is less than the total number of Semi-Compensatory PR seats available (30)



Formula for Calculating Additional Proportional Representation Seats

If additional proportional representation seats need to be allocated to parties (for this election, if less than 30 have been allocated in step one), the following formula is used:

$$\begin{array}{l} \text{Number of} \\ \text{Additional PR} \\ \text{Seats} \\ \text{Allocated to a} \\ \text{Political Party} \end{array} = \left(\begin{array}{l} \text{Total Number of PR} \\ \text{National Assembly Seats} \end{array} - \begin{array}{l} \text{Number of Seats} \\ \text{Allocated in Step} \\ \text{One to all Parties} \end{array} \right) \times \begin{array}{l} \text{Percentage of Vote for} \\ \text{the Party in PR Ballots} \end{array}$$

NOTE: For decimal points, firstly round numbers are allocated. Then the party with the highest decimal point will receive any left over seats



Example

Example of an Election Result

<i>Seat Type</i>	<i>Party A</i>	<i>Party B</i>	<i>Party C</i>	<i>Party D</i>	<i>Independents</i>	<i>Total</i>
<i>% Proportional Votes</i>	40%	30%	10%	20%	N/A	100%
<i>PR Seats Allocated from Step One</i>	9 Seats	5 Seats	0 Seats	15 Seats	N/A	29 Seats (Under the available 30 seats)
<i>Additional PR Seats to be Allocated</i>	1 Seat	0 Seats	0 Seats	0 Seats	N/A	1 Seat



Example – Party A Additional Seats Calculation

Party A's additional seats in this example were calculated as follows:

$$\begin{array}{l} \text{Number of} \\ \text{Additional PR} \\ \text{Seats Allocated to} \\ \text{Party A} \end{array} = \left(\begin{array}{l} \text{Total Number of PR} \\ \text{National Assembly Seats} \\ (30) \end{array} - \begin{array}{l} \text{Number of Seats} \\ \text{Allocated in Step} \\ \text{One to all Parties} \\ (29) \end{array} \right) \times \begin{array}{l} \text{Percentage of Vote for} \\ \text{Party A in PR Ballots} \\ (0.40) \end{array}$$

**0.4 (Results in 1
Seats as it is the
highest decimal
point)**

NOTE: For decimal points, firstly round numbers are allocated. Then the party with the highest decimal point will receive any left over seats

2-2

Step Two - If the total number of seats allocated in step one is more than the total number of Semi-Compensatory PR seats available (30)



Formula for Recalculating Proportional Representation Seats

If more seats are distributed in step one than are actually available, then the seats need to be recalculated, the following formula is used:

$$\text{Recalculated PR Member Seats} = \frac{\text{Total Number of PR National Assembly Seats} \times \text{Number of PR Seats Allocated in Step One to the Political Party}}{\text{Total Number of PR Seats Allocated in Step One to All Parties}}$$

NOTE: For decimal points, firstly round numbers are allocated. Then the party with the highest decimal point will receive any left over seats



Example

Example of an Election Result

<i>Seat Type</i>	<i>Party A</i>	<i>Party B</i>	<i>Party C</i>	<i>Party D</i>	<i>Independents</i>	<i>Total</i>
<i>PR Seats Allocated from Step One</i>	23 Seats	12 Seats	8 Seats	10 Seats	N/A	43 Seats (Over the available 30 seats)
<i>Recalculated PR Seats</i>	9 Seats	8 Seats	6 Seats	7 Seats	N/A	30 Seats



Example – Party A Proportional Representation Seats Recalculation

Party A's seats in this example were recalculated as follows:

$$\begin{array}{l} \text{Recalculated PR} \\ \text{Member Seats} \\ \text{for Party A} \end{array} = \frac{\begin{array}{l} \text{Total Number of PR} \\ \text{National Assembly Seats} \\ (30) \end{array} \times \begin{array}{l} \text{Number of PR Seats Allocated in} \\ \text{Step One to Party A} \\ (13) \end{array}}{\begin{array}{l} \text{Total Number of PR} \\ \text{Seats Allocated in} \\ \text{Step One (43)} \end{array}}$$

9.07 (Results in 9 Seats)

NOTE: For decimal points, firstly round numbers are allocated. Then the party with the highest decimal point will receive any left over seats

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**Step Three: Calculating
Parallel PR Seats (Only to be
used in this election, 17 Seats)**



Last 17 Seats Using Previous Method

For the last 17 proportional seats, the previous system is used:

$$\begin{array}{l} \text{Remaining} \\ \text{Proportional} \\ \text{Representation} \\ \text{Member Seats} \\ \text{for a Political} \\ \text{Party} \end{array} = 17 \times \begin{array}{l} \text{Percentage of Vote for} \\ \text{the Party in PR Ballots} \end{array}$$

NOTE: For decimal points, firstly round numbers are all allocated. Then the party with the highest decimal point will receive any left over seats



Example

Example of an Election Result

<i>Seat Type</i>	<i>Party A</i>	<i>Party B</i>	<i>Party C</i>	<i>Party D</i>	<i>Independents</i>	<i>Total</i>
<i>% Proportional Votes</i>	40%	30%	10%	20%	N/A	100%
<i>Remaining PR Seats</i>	7 Seats	5 Seats	2 Seats	3 Seats	N/A	17 Seats



Example – Party A Remaining Proportional Representation Seats

Party A's remaining seats in this example were calculated as follows: :

$$\begin{array}{l} \text{Remaining} \\ \text{Proportional} \\ \text{Representation} \\ \text{Member Seats} \\ \text{for Party A} \end{array} = 17 \times \begin{array}{l} \text{Percentage of Vote for} \\ \text{Party A in PR Ballots} \\ (0.40) \end{array}$$

6.8 (Results in 7 seats)

NOTE: For decimal points, firstly round numbers are all allocated. Then the party with the highest decimal point will receive any left over seats



THANKS!

Any questions?

You can email necvote@gmail.com



CREDITS

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](#)