



## Asia's Contribution to Greening Transport

# Korea's Experience in Decarbonizing Transport

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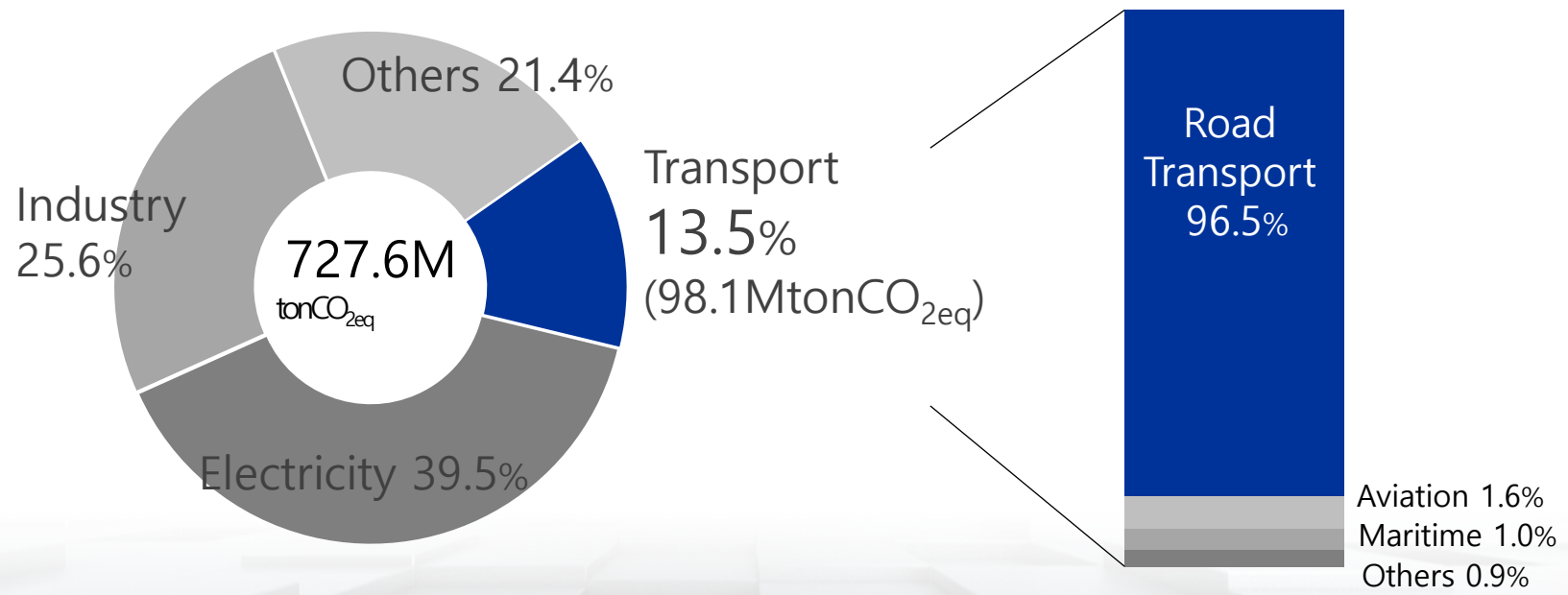


Transport GHG emissions reaching 98 million ton (as of 2018)

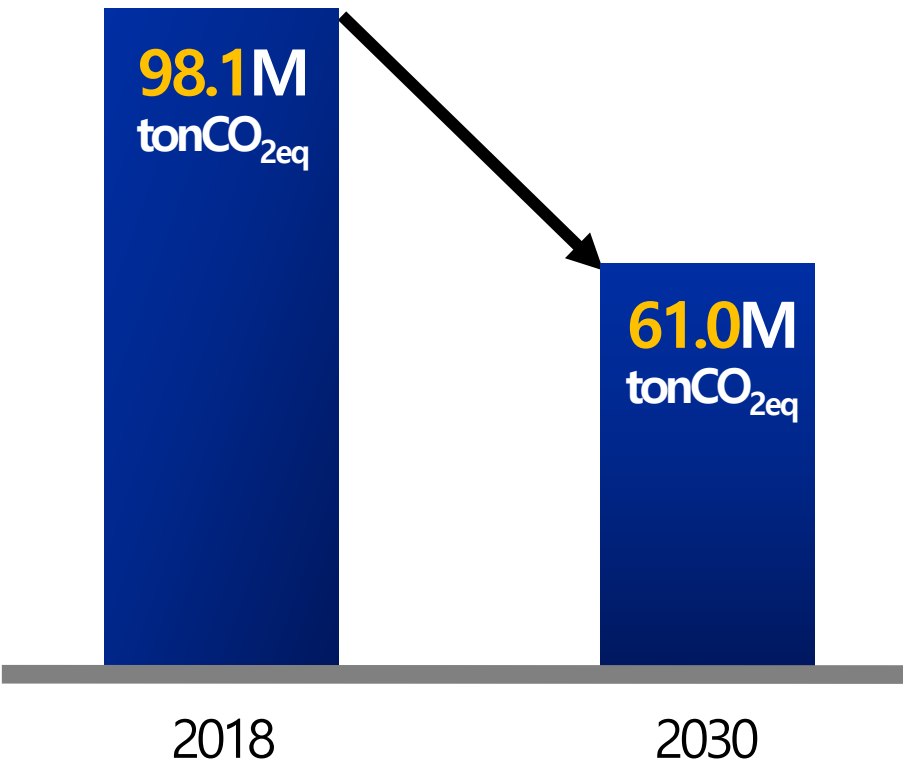
Transport is the 3<sup>rd</sup> largest contributor of emissions following electricity and industry

👉 13.5% of Korea's total carbon emissions

👉 Road transport accounts for 96.5% of total transport emissions



## Objective & Strategy



## Achieve carbon neutrality in all aspects of transport



✓ Introduction of EVs · hydrogen cars 🚗  
Electric double-decker buses

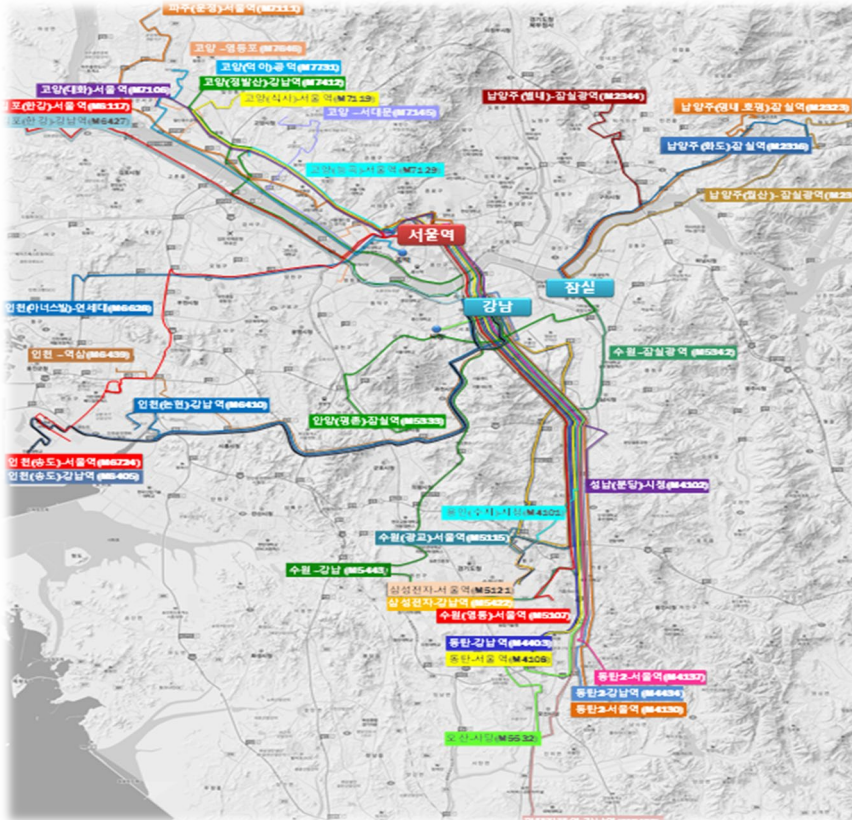
✓ Decarbonize railways 🚆 Trams

✓ Promote use of public transport 🚏 K-Pass

**Reduce 37.8% of carbon emissions by 2030**



## Metropolitan bus route map of the Seoul capital area



## Current status of metropolitan bus service in the Seoul capital area

- Number of routes : 283
- Number of Buses: 2,926 units
- Service frequency : 14,109 per day
- Number of users : 547,055



## Expansion of electric double-decker buses

- Progress status**  
 Developed large-capacity electric double-decker bus through national R&D in 2019
- Seating capacity**  
 72 passengers (1.6 times higher than a 44-seater single-decker bus)
- Introduction status**

Year	'20	'21	'22	'23	'24
Units	20	20	20	40	50

- Funding**  
 MOLIT 35.8% + MOE 14.8% + local governments 24.4% + bus companies 25.0% = 100% (KRW 800mil / unit)

## Electric double-decker bus



Transition to electric double-decker buses 📍 25% by 2030, 50% by 2040



## Past tram operations in Korea

- Korea operated tram services until 1968
- Criticized as contributing to urban traffic congestion due to the increase in automobiles



(1950s) Road sharing, wire powered

## Current status

- Re-emerging as eco-friendly transport
- 4 times higher transport capacity than buses, lower construction costs compared to urban railways
- Tram projects adopted by multiple local governments  
(7 projects in progress, 17 in planning phase)

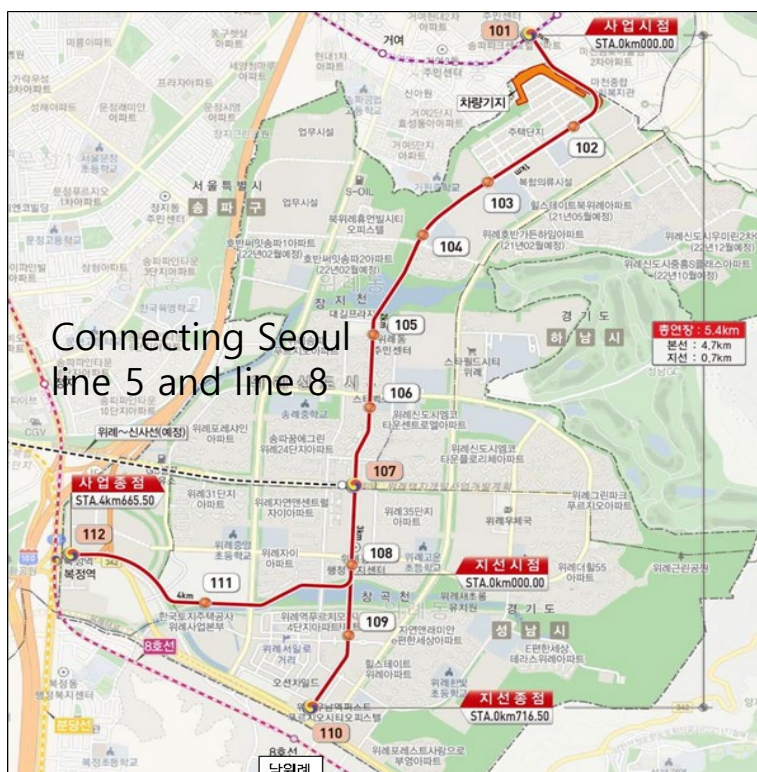


Digital illustration of a tram and tram station in Wirye, Seoul



## Tram promotion plan

- Total 24 tram projects (313km) have been included in the national plan
- Tram construction project in Wirye, Seoul commenced in April 2023, aiming to open in 2025



Map of Wirye Tram Route







## Tram as a green transport solution

### Wireless, Battery-powered Tram

- Utilizes onboard batteries, eliminating the need for charging facilities on the rails
- Currently preparing for demonstration after vehicle development through national R&D

### Expected performance of Battery-powered Tram

- Battery life is around 5 years when charged to 80%
- Charging times are 15 minutes for rapid charging and an hour for slow charging, with an expected daily driving range of 174km



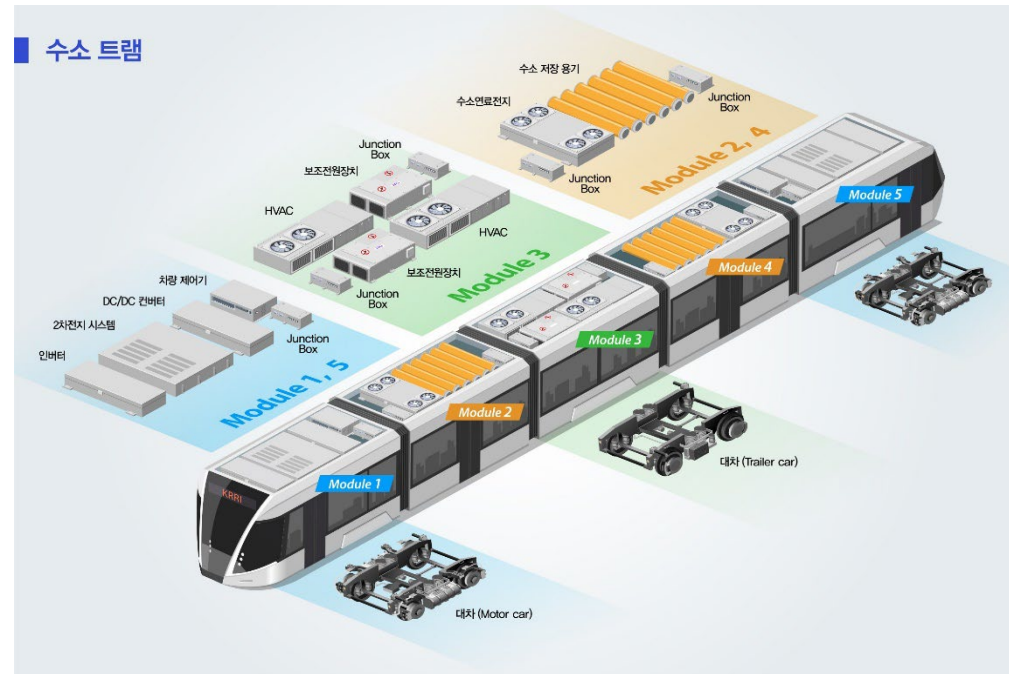
## Hydrogen-powered Tram

### Technology Development

- Ministry of Trade, Industry and Energy has been supporting core technology development for hydrogen trams (fuel cells, storage containers, etc.)

### Preparation

- Planning to upgrade charging stations for broader compatibility to accommodate hydrogen trams as well as other hydrogen-powered transport modes



Hydrogen tram vehicle concept



Hydrogen electric tram

**Nationwide Public Transport Card**

“**K-PASS**  
lets your  
transportation  
cost burden  
pass away”

Anytime and everywhere  
Enjoy **benefits** and gather **happiness**

### K-PASS fare reimbursement

- ✓ Different rates for each group

General public	Youth	Low-income
20%	30%	53%

### Reimbursement requirements

- ✓ Utilize public transport at least **15** times per month,  
with maximum reimbursement for **60** rides



## ● Altteul (Cost-saving) Transport Card

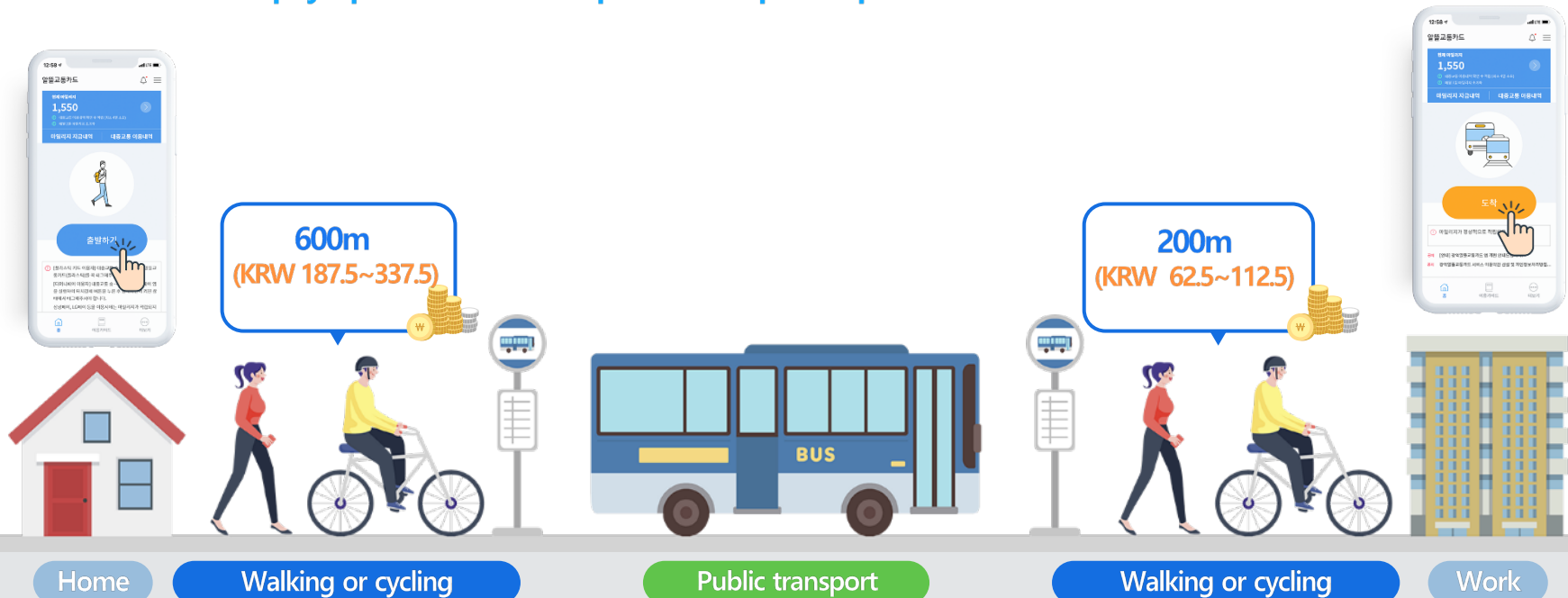
### Basic concept

When using public transport, the user can earn mileage in proportion to the distance traveled by walking or cycling (up to 20% discount through public finance) and get an additional discount from credit card companies (about 10%).

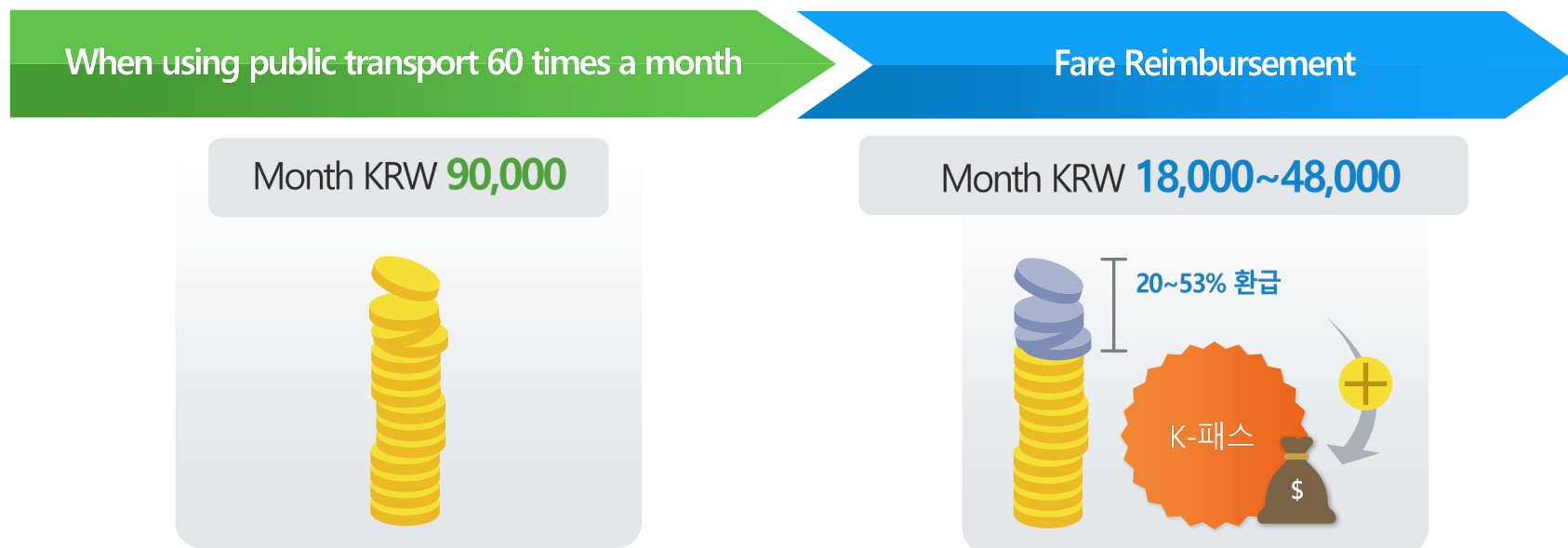
➔ It has the effect of reducing public transport cost by up to 30%, thus encouraging the use of public transport

### Mileage

Users can earn mileage in proportion to the distance traveled by walking or cycling and use it to pay up to 20% of their public transport expenses



- Reduce public transport cost by **20~53%**(+private finance 10%)
  - ▶ The basic intra-city bus fare of **KRW 1,500 x 60 times** per month = **KRW 90,000** per month  
Reducing the cost of using public transport by **KRW 18,000~48,000**
- Encourage the use of public transport
  - ▶ To increase the frequency of using public transport by at least once

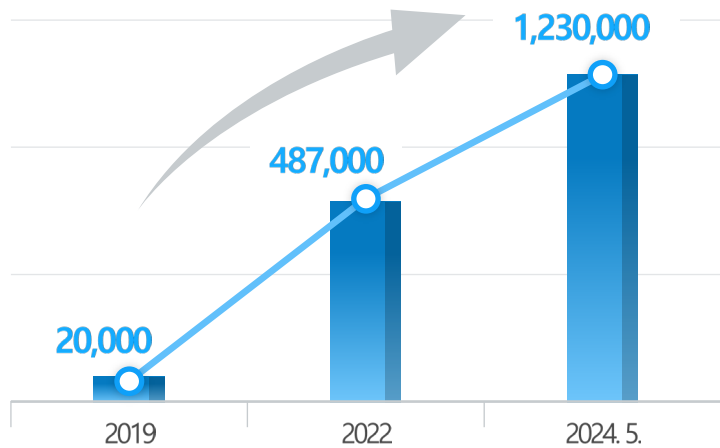


KRW 90,000 / month → KRW 18,000~48,000 / month

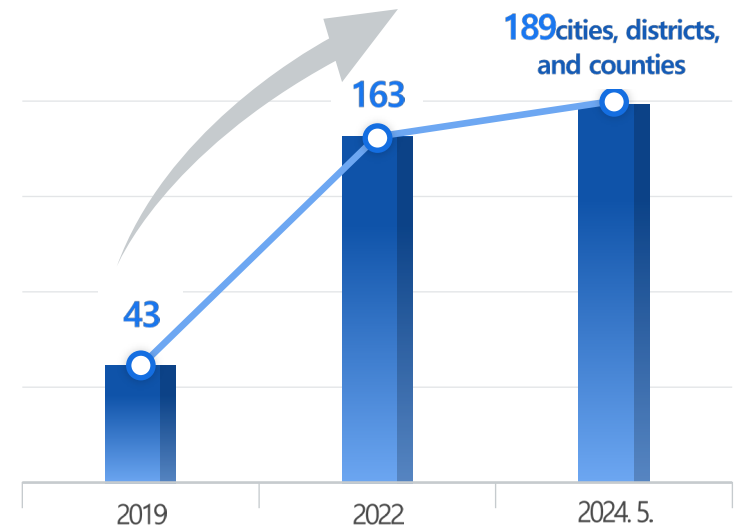
**20~53% reduction!**



## Number of users



## Number of participating local governments





# Thank you

