



Building a climate resilient decarbonized society with stakeholders*

Case of Gwangju Metropolitan City, Korea selected from CJK joint studies with NCSC-IGES-KEI 2020

Zero Carbon City International Forum
2021. 3. 18.

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azimuth of climate resilient decarbonized society

RECOGNITION OF NON-PARTY STAKEHOLDERS UNDER UNFCCC

(LOCAL GOVERNMENTS, CITIES, COMMUNITIES, NGOs, 2010~)



2010

recognition of local government

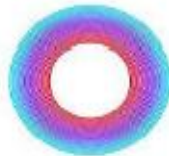
- UNFCCC에서 지방정부를 정부 이해당사자로 인정 [COP16, '10년 칸쿤]



2013

experience sharing of the best local climate actions

- 전 세계 도시·지방정부의 온실가스 감축 및 적응에 대한 우수사례와 경험 공유 강조 [COP19, '13년 바르샤바]



LIMA COP20 CMP10

2014

Lima-Paris Action Agenda for non-party stakeholders

- 도시, 지방정부, NGO 등의 기후행동 참여를 독려하기 위해

Lima-Paris Action Agenda(LPAA) 출범 [COP20, '14년 리마]



PARIS 2015
UN CLIMATE CHANGE CONFERENCE

2015

consensus on int'l cooperation of local actions and public participation (Article 12 of PA)

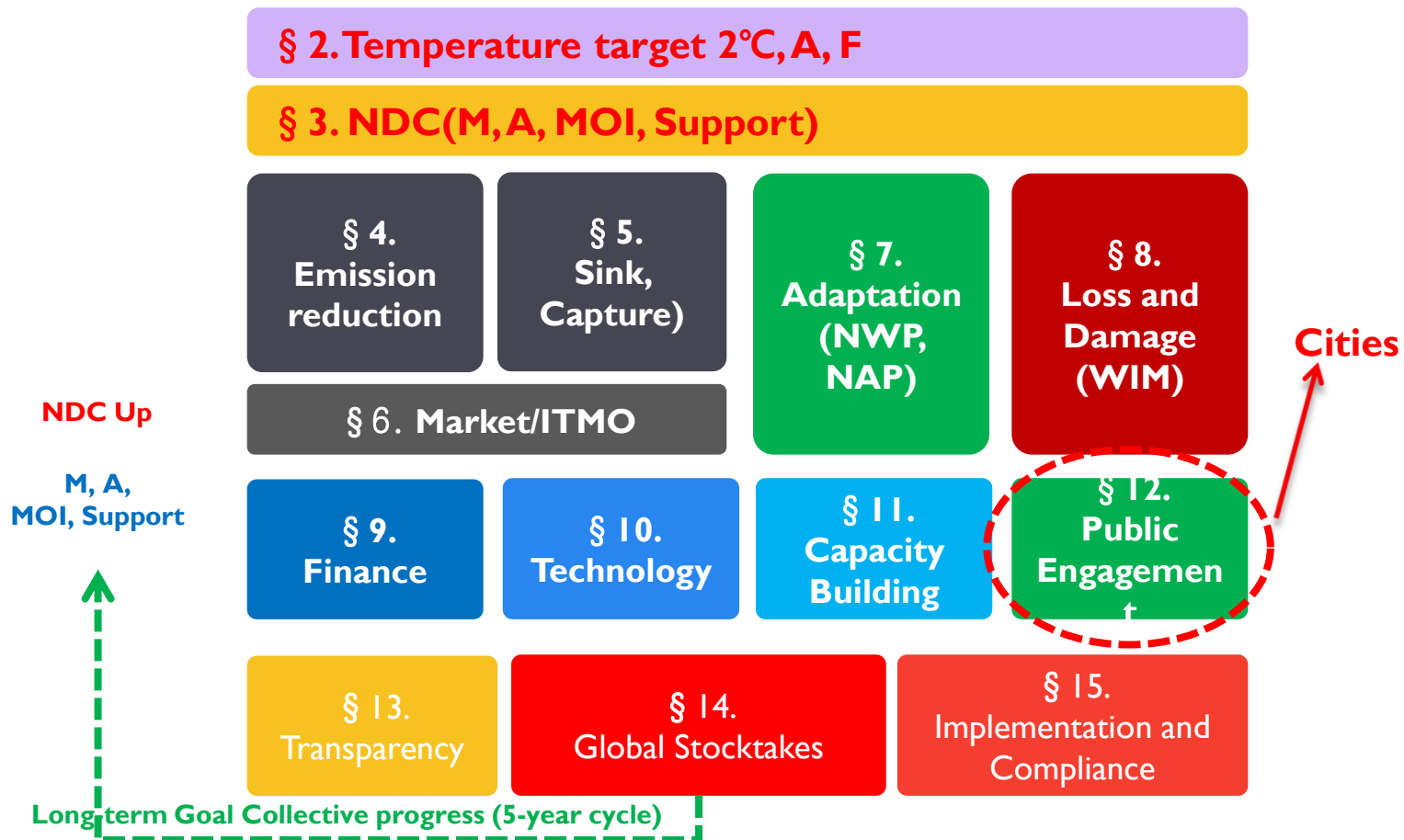
- 강력한 기후변화대응을 위해 지방정부, 지역사회가 참여하는 국제적 협력을 지속적으로 증진할 것을 합의[COP21, '15년 파리]

Article 12

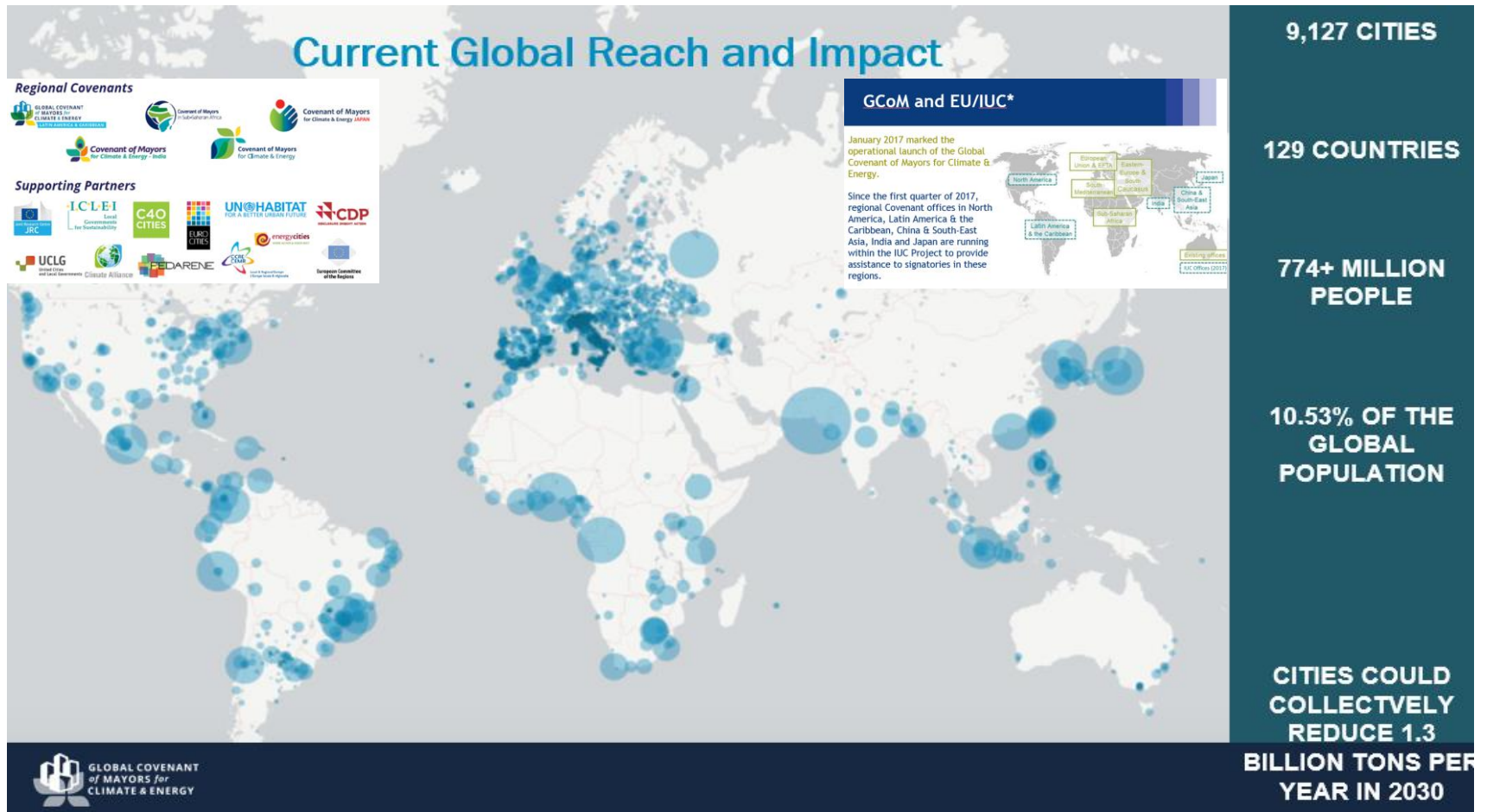
Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.

“ARTICLE 12: PUBLIC ENGAGEMENT” OF PARIS AGREEMENT

(LOCAL GOVERNMENTS, CITIES, COMMUNITIES, NGOs, AS NON-PARTY STAKEHOLDERS)



BUILDING A GLOBAL RESILIENT DECARBONIZED SOCIETY WITH NON-PARTY STAKEHOLDERS (GCoM)



WHAT IS THE GLOBAL COVENANT OF MAYORS?

Announced on June 22, 2016 and “live” since January 2017, The **Global Covenant of Mayors for Climate & Energy** is an international coalition of local and regional authorities with a shared long-term vision of promoting and supporting voluntary action to combat climate change and move to a low-carbon society, based on the following core principles:

- Local Governments are Key Contributors
- City Networks as Critical Partners
- A Robust Solution Agenda
- Reducing Greenhouse Gas Emissions, Fostering Local Climate Resilience and Access to Energy
- Standardizing measurement approaches and reporting for cities



sub-regional efforts through the CJK TEMM for LCSC

PREPARATORY WORK AMONG STAKEHOLDERS (SEPT. 2017)



Date: Two days during 6th-7th September 2017

Venue: China People's Palace, Beijing

Host: Ministry of the Environment, Japan (MOEJ)

Co-organizers: Institute for Global Environmental Strategies (IGES)

Energy Research Institute of the National Development and Reform Commission (ERI)

PREPARATORY WORK (SEPT. 2017)



Sun Zhen, NDRC

I expect that this opportunity gives many Chinese cities to learn about not only mitigation policy but adaptation.



Kwon Sei-joong,
MoFA, Korea

There are bilateral collaboration but this multi collaboration is quite new. City level is good starting point.



Hiroshi Ono
MoEJ

What is your research schedule?

YR1: Show Case/Analysis
YR2: Modeling/Prototype
YR3: Application to cities towards decarbonized and sustainable cities during 2018-2020

Junichi Fujino
IGES/NIES



4

We would like to bring our research output into COP24, based on our collaboration with cities + central government, business and others.



LAUNCHING CJK JOINT WORK (GGGI, IGES, KEI, JUNE 2018)

- City Climate Actions in collaboration of China, Japan, Korea
- Introduction to China-Japan-Korea Joint Research Project on Cities
 - towards decarbonization and sustainable development –

Joint Communiqué

The 20th Tripartite Environment Ministers Meeting

among China, Japan and Korea

23-24 June 2018, Suzhou, China



21. The Ministers welcomed the preparatory work done to date and agreed on launching the joint research on cities towards decarbonization and sustainable development in 2018.

<https://www.env.go.jp/press/files/jp/109425.pdf>

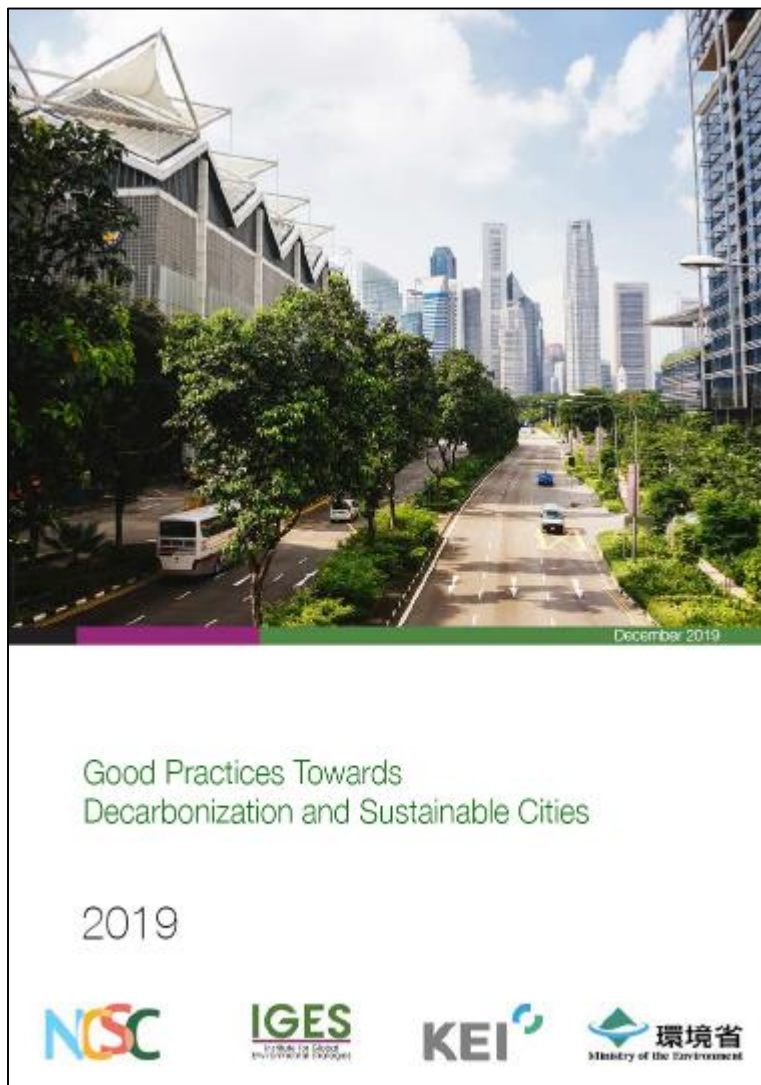
2ND JOINT WORKSHOP YOKOHAMA*, JULY 2019

(UNESCAP NEA (IN CHARGE OF NEASPEC INVITED))

* 1ST WORKSHOP HELD IN BEIJING OCTOBER 2018



GOOD PRACTICES TOWARD DE-CARBONIZATION AND SUSTAINABILITY



This publication presents major output from the joint research program in the 2018-2019.

Good practices towards decarbonization and sustainable development are quoted from case studies within and outside of CJK joint study

It is expected that the CJK joint study outcome could help officers in charge of local climate actions the Asia and Pacific cities and communities.

METHODOLOGICAL REVIEW ON GOOD PRACTICES (2020)

Methodologies for Cities towards Decarbonization and sustainable development

Four Focus Area :

1. Scientific/Quantitative approach (for target setting, etc.)
2. Stakeholder engagement
3. Horizontal collaboration within local government
4. Co-benefits (for enhancing 2. and 3.)

FUTURE WORKS FOR 2020+

1. Update and Extension of Good Practices

- Simple and easy to read version.
- Emphasis on graphics and visual aspect to increase its usability.
- Collection of good practices from CJK Cities (based on past years' work).

2. CJK Joint Research Workshop

- One day workshop before TEMM
- It might be physical (around 30 people) or virtual.
- Languages: Chinese, Japanese, and Korean. Need to explore the possibility of using also English.

3. Summary of methodology for long term vision and scenarion development in CJK.

- To analyse what kind of tools are they using.

**Net Zero 2045 with Citizens _ Gwangju Metropolitan City
Case from Korea**

GWANGJU METROPOLITAN CITY

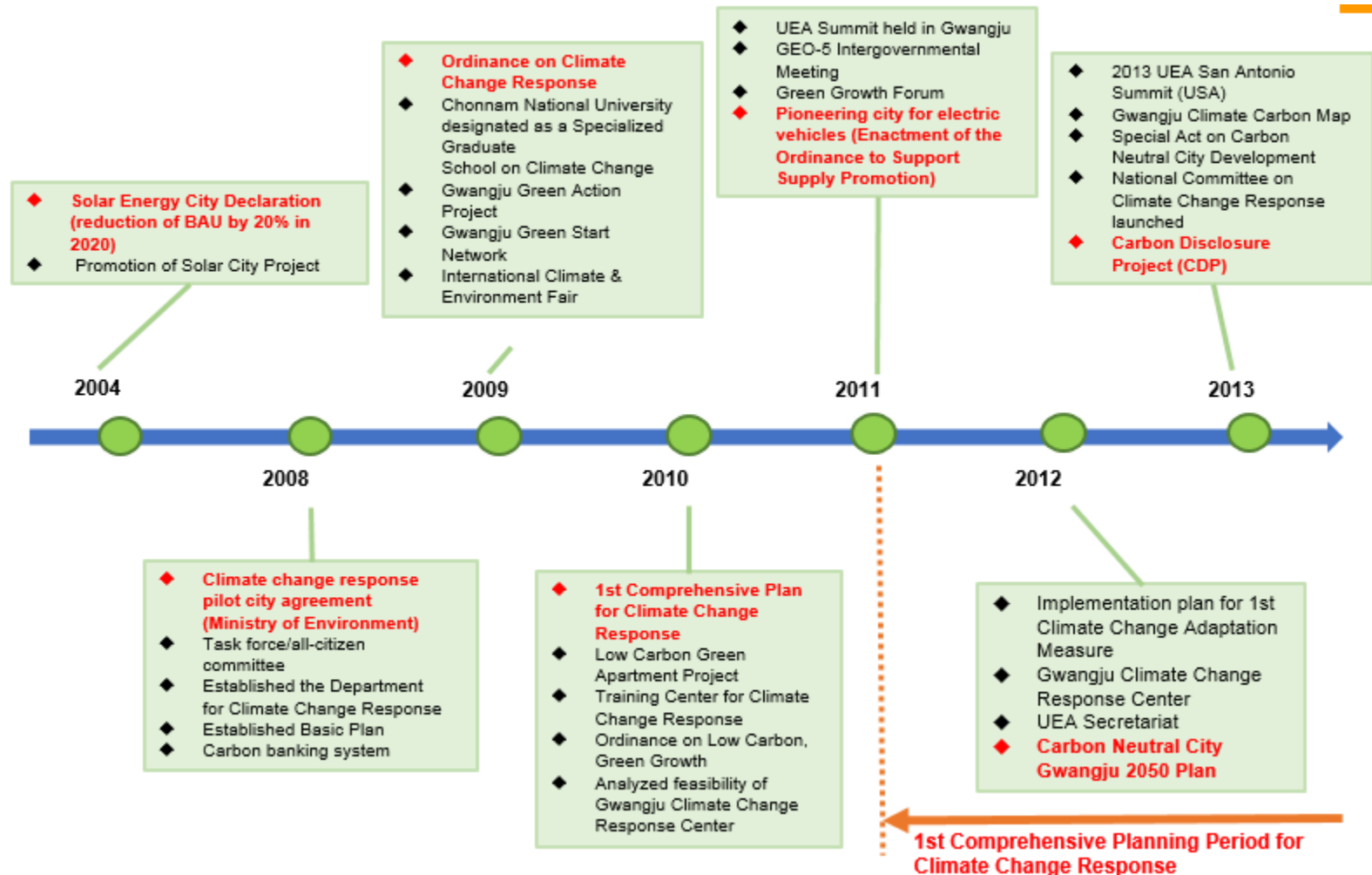


Gwangju Metropolitan City is the center of southwestern provinces in Korea, with its 1.5 million habitants.

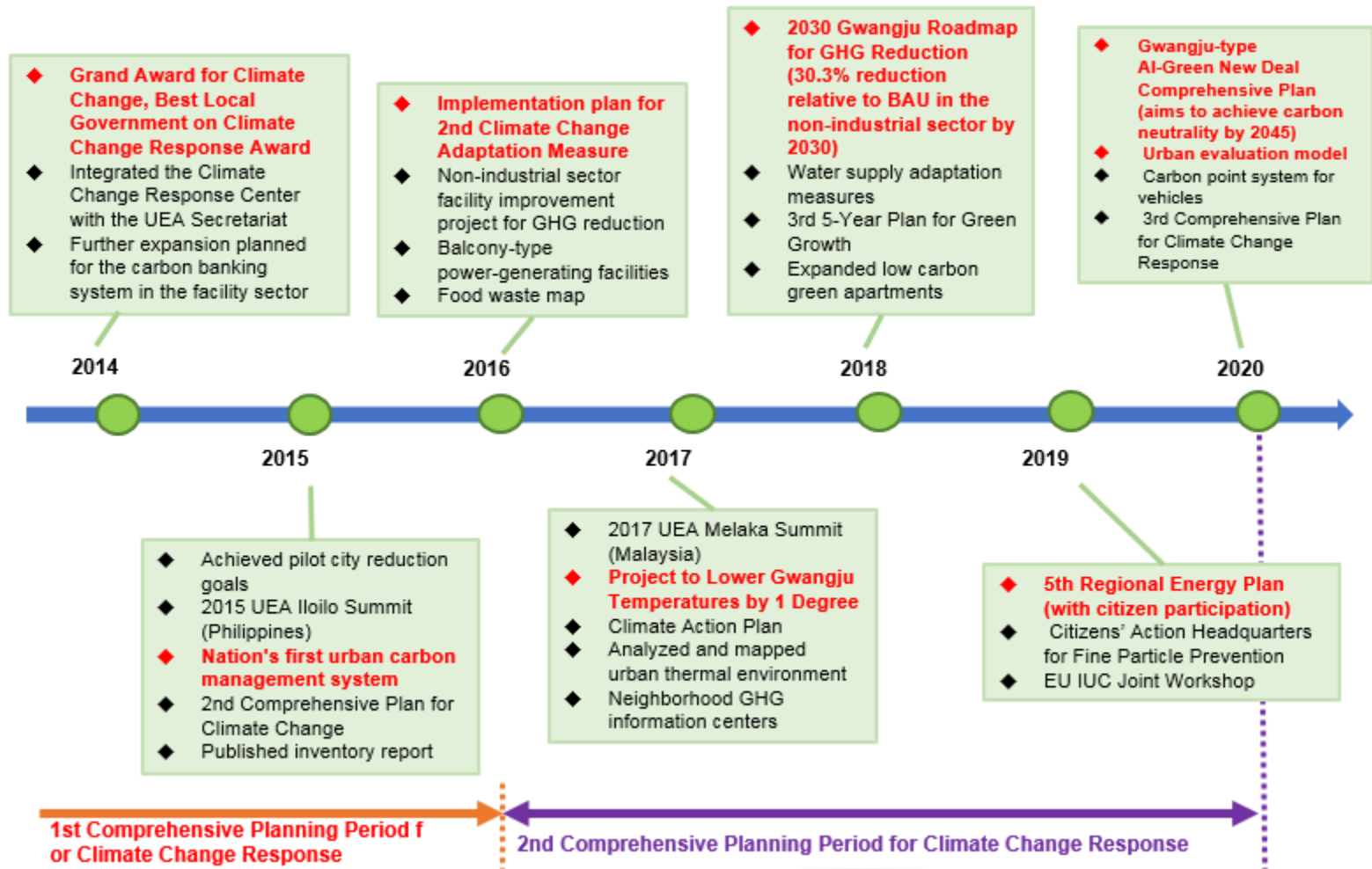
In 2004, Gwangju set the BAU 20% Cut Target by 2020 and became the first pilot city on local climate action in Korea (2008), followed by the installation of climate policy department in the city government supported by Taskforce/all citizen committee.

Gwangju Metropolitan declared "Net Zero 2045 with Citizens" in 2020, more ambitious target than the national one.

GWANGJU ON RESILIENT AND DECARBONIZED CITY DEVELOPMENT_1



GWANGJU ON RESILIENT AND DECARBONIZED CITY DEVELOPMENT_2

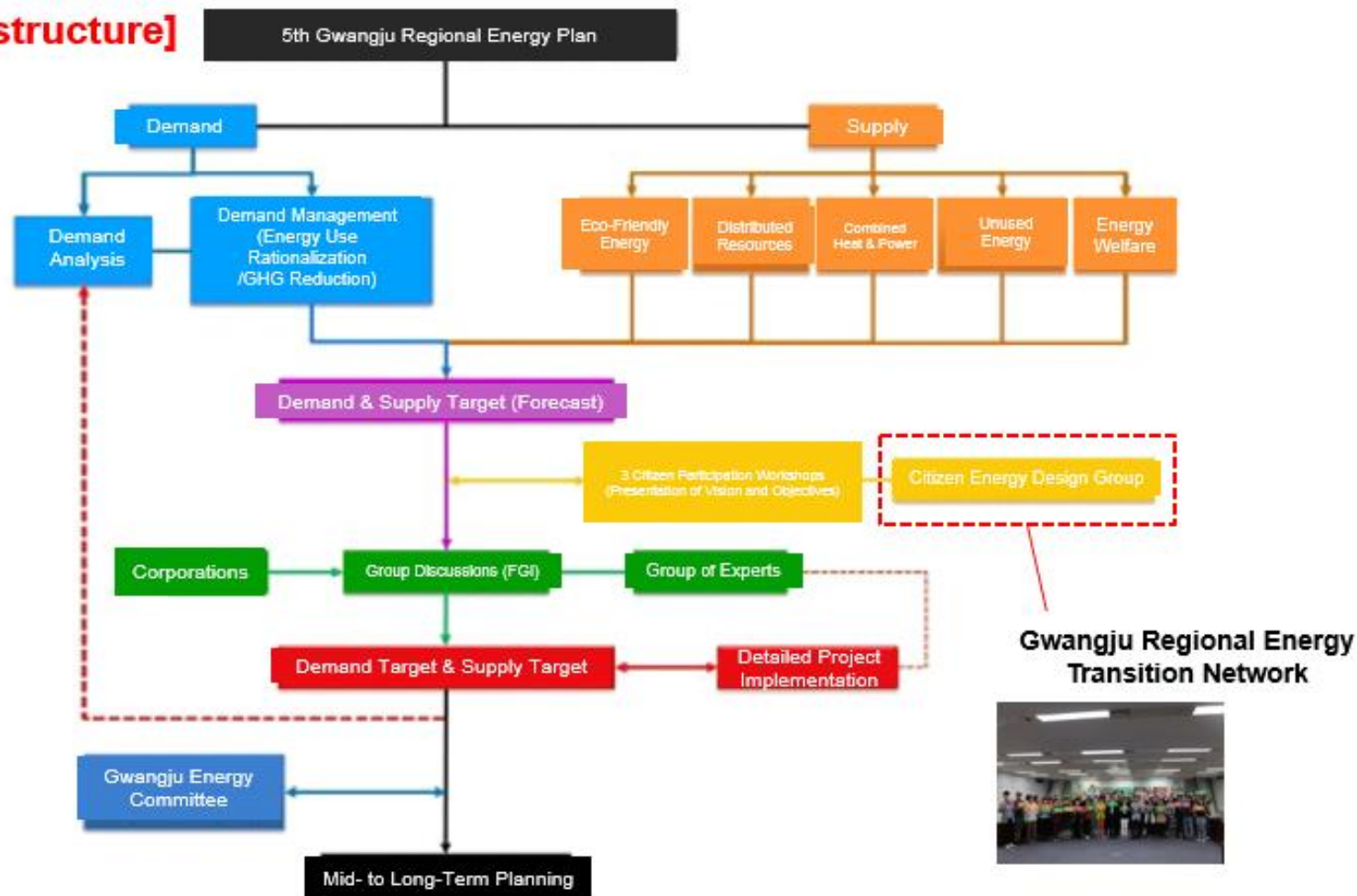




Gwangju in Energy Transition under Climate Emergency, Net Zero 2045

Establishing a Regional Energy Plan With Citizen Partition (1)

[planning structure]

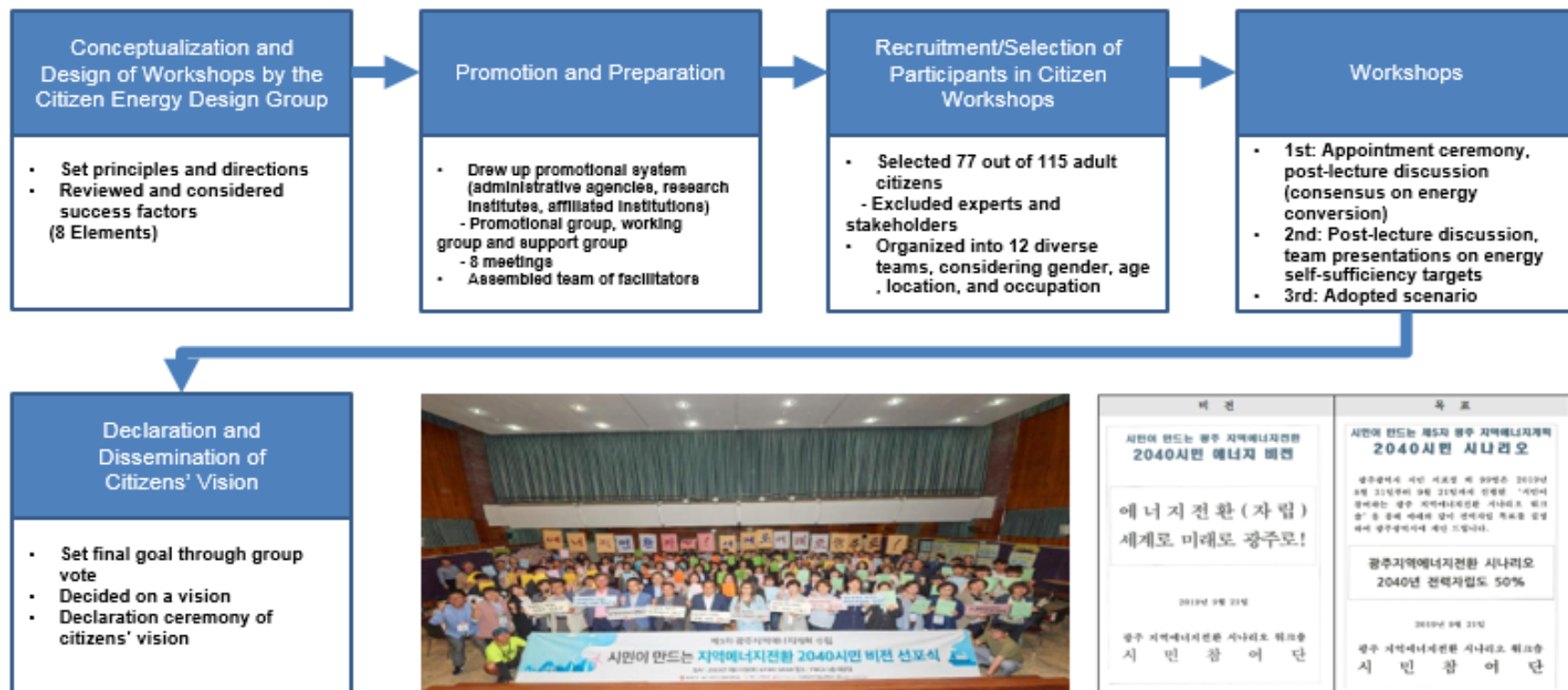


Establishing a Regional Energy Plan With Citizen Participation (2)

[Principle] Citizens Should Decide the Future of Energy in Gwangju 2040

- Select long-term energy scenario supported by social consensus, based on sufficient understanding and discussion of the vision, and incorporate ideas from citizens who participated in the workshops

[Process]



The Gwangju Community, With Citizen Participation, Declares Climate Crisis Emergency

"Gwangju Community Declaration Comprises 103 Civic Groups, Companies, and Administrative Agencies"

- Gwangju Metropolitan City, 5 Autonomous Districts, Gwangju City Council, Gwangju Metropolitan Office of Education, Gwangju Chamber of Commerce and Industry, Gwangju Climate Crisis Emergency Action (103)

- Joint Declaration by the Gwangju Community Regarding the Climate Crisis Emergency (Declaration of Emergency, Declaration of the Transition to a Carbon-Neutral Gwangju by 2045)

[Implementation Plan]

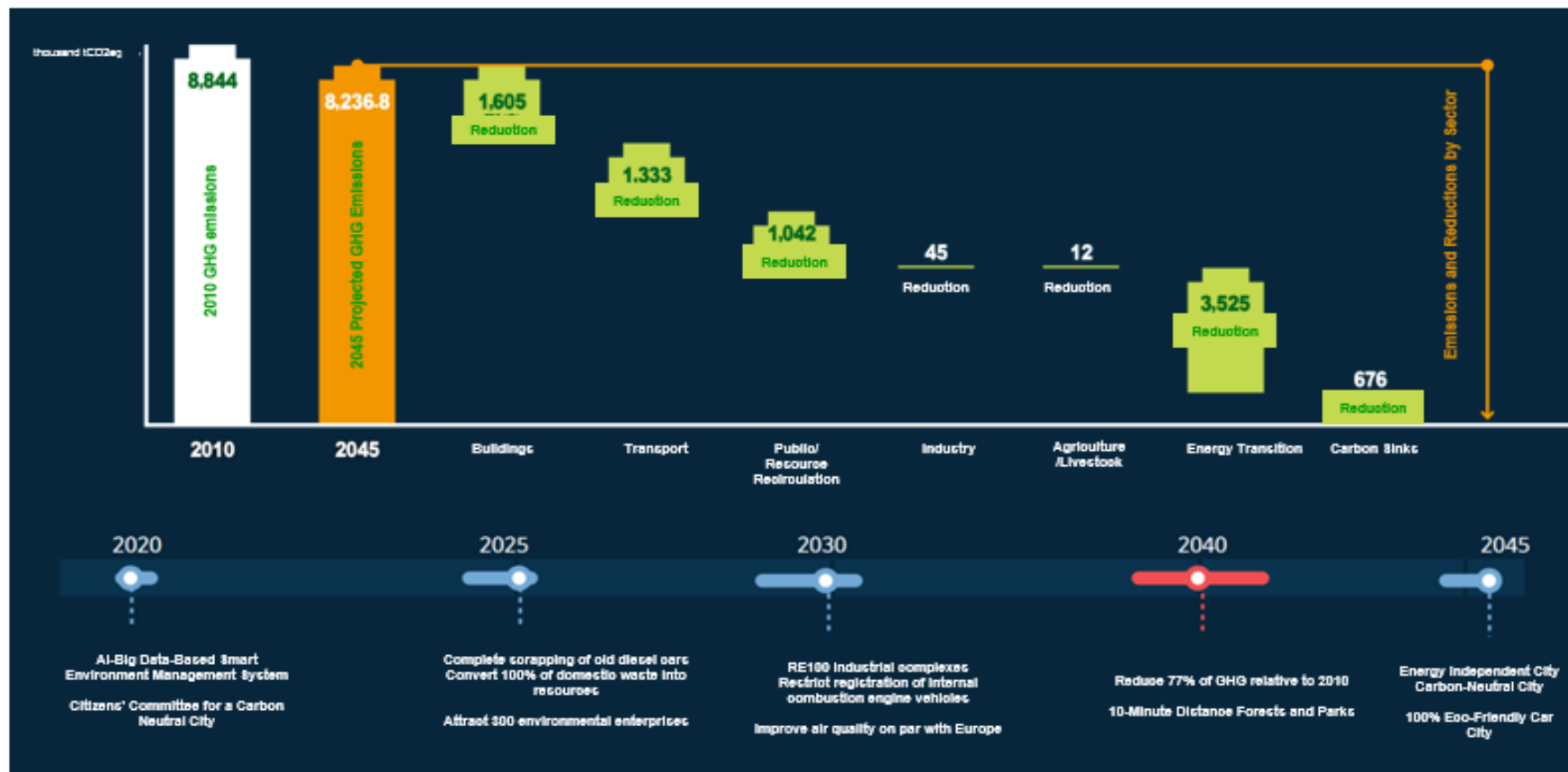
- Establish a foundation for a decarbonized industry and economy linked to the government's Green New Deal, and implement the Gwangju-type Green New Deal in a productive manner
- Promote policy change and civic compliance with decarbonization across all aspects of daily life
- Promote civic and academic education regarding decarbonization efforts, and guarantee the right to environmental learning for future generations
- Enact new and revised ordinances to aid the successful implementation of the Gwangju-type AI-Green New Deal project, and solicit the attention and support of the national government in doing so
- Appoint a joint public-private committee to ensure a democratic process of responsible implementation



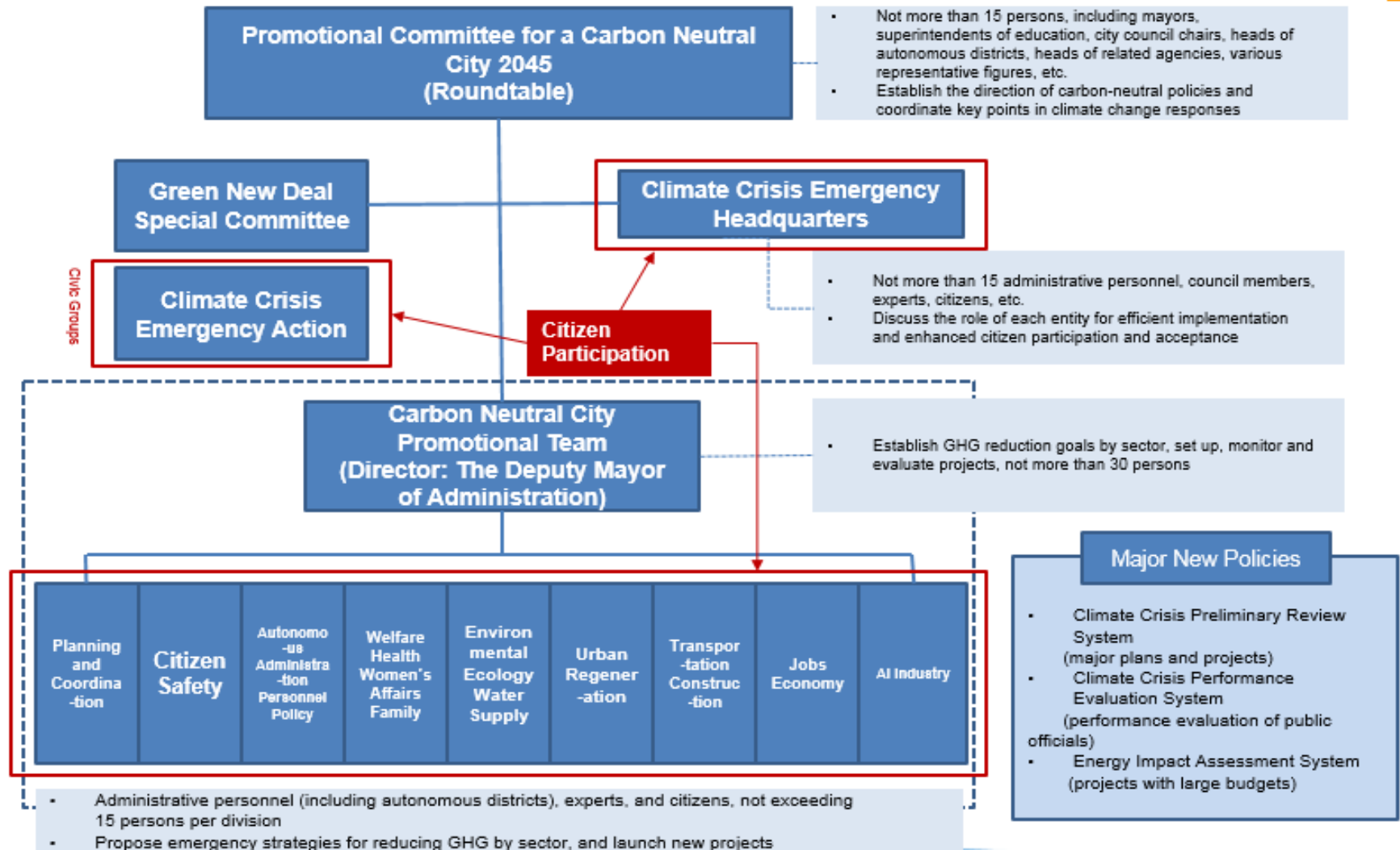
New Goals for Carbon Neutrality 2045

[Goal] Just 2045 Plan for a Carbon-Neutral and Energy-Independent City

- Reduction Targets: Achieve 45% production relative to 2010 in 2030, 77% production in 2040, and carbon neutrality in 2045.
- Three Major Strategies: Greener City, Green Industrial City, Climatically Safe City



Rebuilding Net Zero 2045 Policy Infrastructure with Citizens



Implementation supported by Local Thinktanks and Citizens

URBAN CARBON MANAGEMENT SYSTEM (UCMS) IN ICEC

Background

Monitoring and Evaluation of city's GHG emission by sector (building, transport, green area). It can help the city make decisions on the city's policy regarding carbon management

Characteristics

- Inventory categories fit for urban planning
- Detailed inventory by lot(block)
- Link building information(e.g. type of buildings) to emission resources and energy source.
- Link emission/energy information and spatial data
- Build city's carbon management evaluation system

Utilization(How to Use)

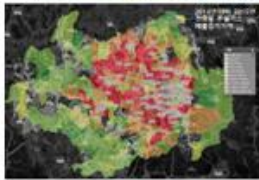
- Taylor-made policies (for each district)
- Taylor-made initiatives
- Background information for policy making
- Linkage between environmental info and climate vulnerability index



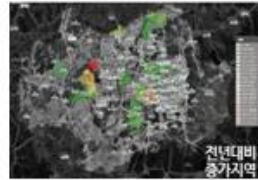
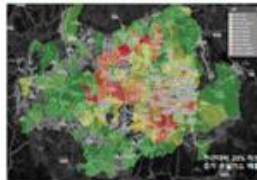
UCMS SUPPORTED LOW CARBON SPATIAL PLANNING (ANNUAL)



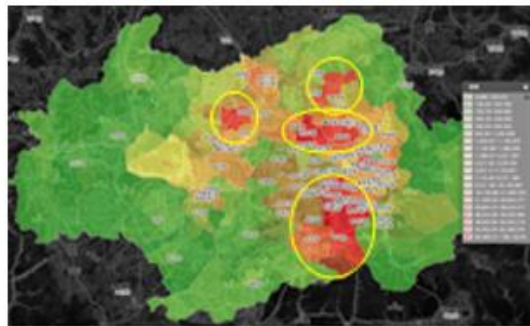
Applied analysis on climate Vulnerability-Resilience Index(VRI)



Current emissions and comparison (to last year) in building sector



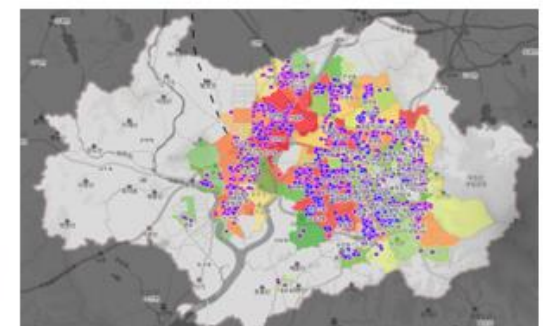
Current emissions and comparison (to last year) in transport sector



Co-relation between buildings' emission and VRI (Integrated approach between adaption and mitigation)

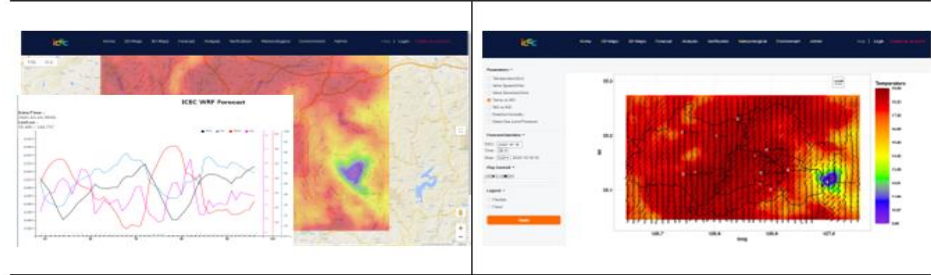
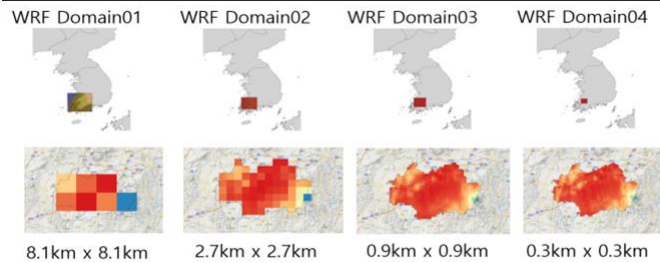


Applied analysis (heatwave+tropical nights+heat index+actual measurement)

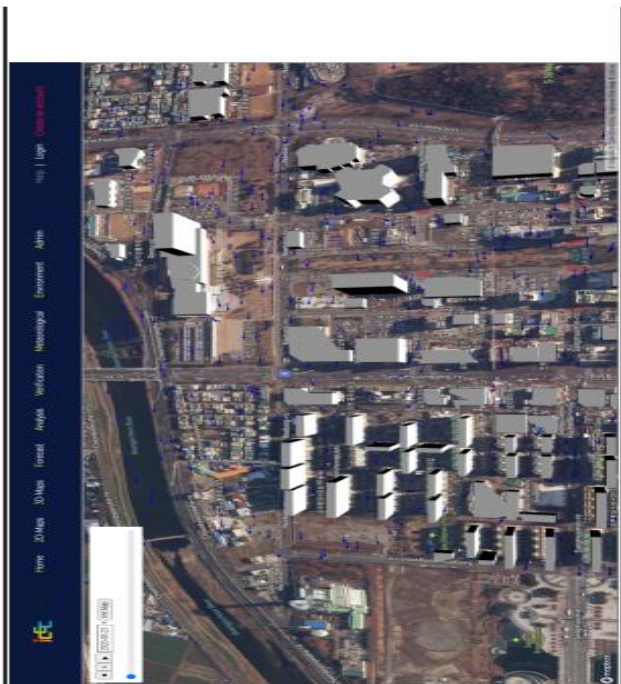


Foodwaste discharge in multi-unit residences

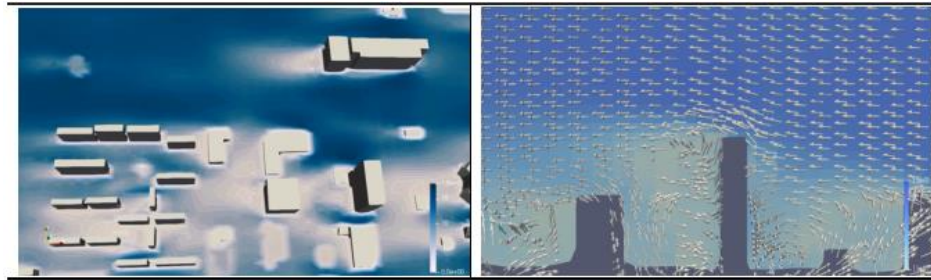
REAL TIME(HOURLY) URBAN ASSESSMENT MODELLING SYSTEM (UAMS)



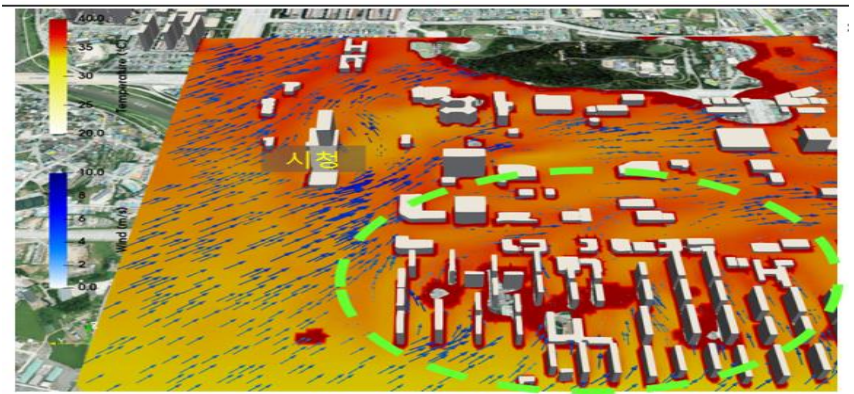
scaling down Global Forecast System (GFS) Data with WRF model up to 100m scale in Gwangju Metropolitan



Web-based UAMS

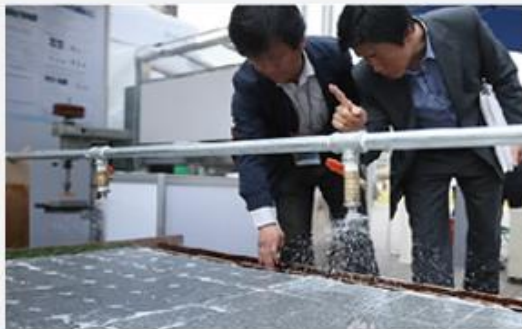


Topology analysis in 3D



Winds and Heat Island analysis and forecasting services

MAINSTREAMING RESILIENT & LOW CARBON INFRASTRUCTURE BUILDING



[Heat Wave Response]
Making cool green
city with citizens

**Making Gwangju
1°C Cooler Project**



[Energy Saving]
Incentives for energy
saving in household,
school, institution, etc.

Carbon Bank



[GHG Reduction]
Support reduction
activities in multi-
residence unit

**Low-Carbon Green
Apartment Project**

MAINSTREAMING RESILIENT & LOW CARBON INFRASTRUCTURE BUILDING



[Education for Children]
Play and learn from
hands-on experiences

**Climate Change
Experience Center**



[Training Program]
Training for teachers,
instructors, climate
consultants, etc.

**Expert Training
Program**



[Textbook, teaching aid]
Developed by Climate
Change Teachers' society

**Contents for Climate
Change Education**

