



# ISUS

International School of Urban Sciences

## ESG(, ESG Bubble,) and Smart city development

---

16<sup>th</sup> March 2022

Ryan Kwangbok Lee

Director of Policy advisory & Consulting

Korea Overseas Infrastructure & Urban Development Corporation (KIND)

# Key Takeaways

ESG was emerged because of

- growing necessity to deal with accelerated global warming (E),
- further development of CSR, CSV concepts (S),
- structurally changed global finance sector where investors are bigger than lenders.

It is all so good a concept, but

- Rating agencies and consultancies made it too big, while Greenflation, Greenwashing appear.
- We may have to admit that drastic change is not possible and take more realistic approaches.

Smart city is still valid because

- it will be environmentally, socially, and democratically good if it is truly smart.

Cities can get smart by

- adopting smart solutions (for both tackling old cities' problems and developing new cities)
- To finance it, incentivization for private sector (providing strong BM and tax benefits) is the key.



# ISUS

International School of Urban Sciences

## **Act I. ESG and ESG Bubble**

---

# 1. How ESG emerged

Environmentally, studies and reports were showing horrible future of global warming.



## World Energy Outlook 2019

Paris, 13 November

- Energy policies are adjusting to new pressures and imperatives, but the overall response is still far from adequate to meet the energy security and environmental threats the world now faces



## Emissions Gap Report 2019

November 2019

**Clean energy must be rolled out six times faster**

To have any hope of restricting global heating to a maximum of 1.5 degrees Celsius, the renewables success story which saw 108 GW of solar deployed last year needs to be cranked up to the next level – and fast.

# 1. How ESG emerged

Environmentally, studies and reports were showing horrible future of global warming.

Word of the Year 2019

Nov. 2019

Oxford  
Dictionary

*Climate  
Emergency*

Collins  
Dictionary

*Climate  
Strike*

*Youthquake (2017), Toxic (2018)*

The New York Times

Alarming new study

## Rising Seas Will Erase More Cities by 2050, New Research Shows

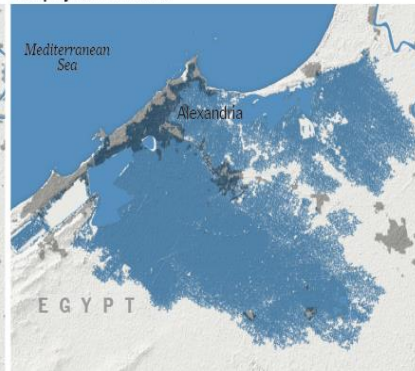
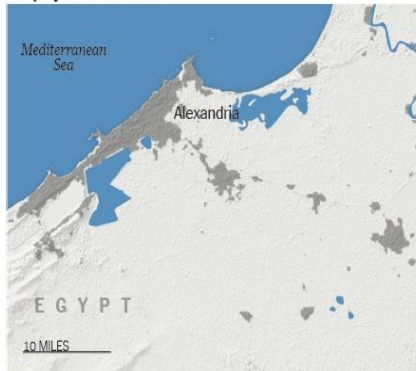
By Denise Lu and Christopher Flavelle Oct. 29, 2019

The authors of a paper published Tuesday developed a more accurate way of calculating land elevation based on satellite readings, a standard way of estimating the effects of sea level rise over large areas, and found that the previous numbers were far too optimistic. The new research shows that some 150 million people are now living on land that will be below the high-tide line by midcentury.

“So this is far more than an environmental problem,” he said. “It’s a humanitarian, security and possibly military problem too.”

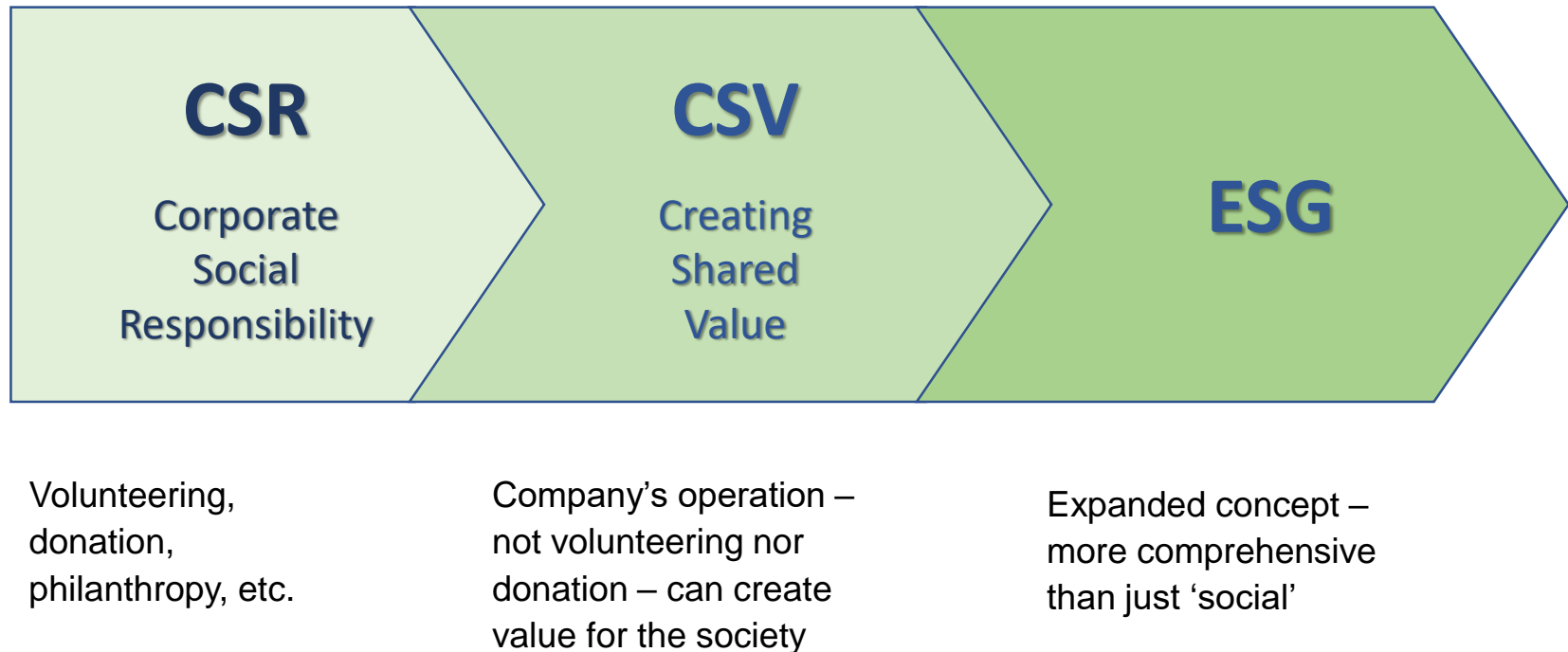
Old projection for 2050

New projection for 2050



# 1. How ESG emerged

Socially, corporate's social responsibility has been emphasized for decades.



# 1. How ESG emerged

Governance-wise, there were cases of the management's mismanagement.

Rule of thumb for governance –  
**stakeholders' interests should be protected**



ARTHUR ANDERSEN

SIEMENS

## 2. How ESG influences

Now, to keep your shareholder, you have to prove that your company is ESG friendly.

**BlackRock**

About Us

Newsroom

Insights

Investor Relations

Corporate sustainability

Careers

LARRY FINK'S 2020 LETTER TO CEOs

### A Fundamental Reshaping of Finance

BLACKROCK'S 2020 LETTER TO CLIENTS

### Sustainability as BlackRock's New Standard for Investing

World's biggest asset  
Manager

- AUM (Asset Under  
Management)  
: 9.5 Trillion USD (2021 2Q)

**"Climate risk is investment risk."**

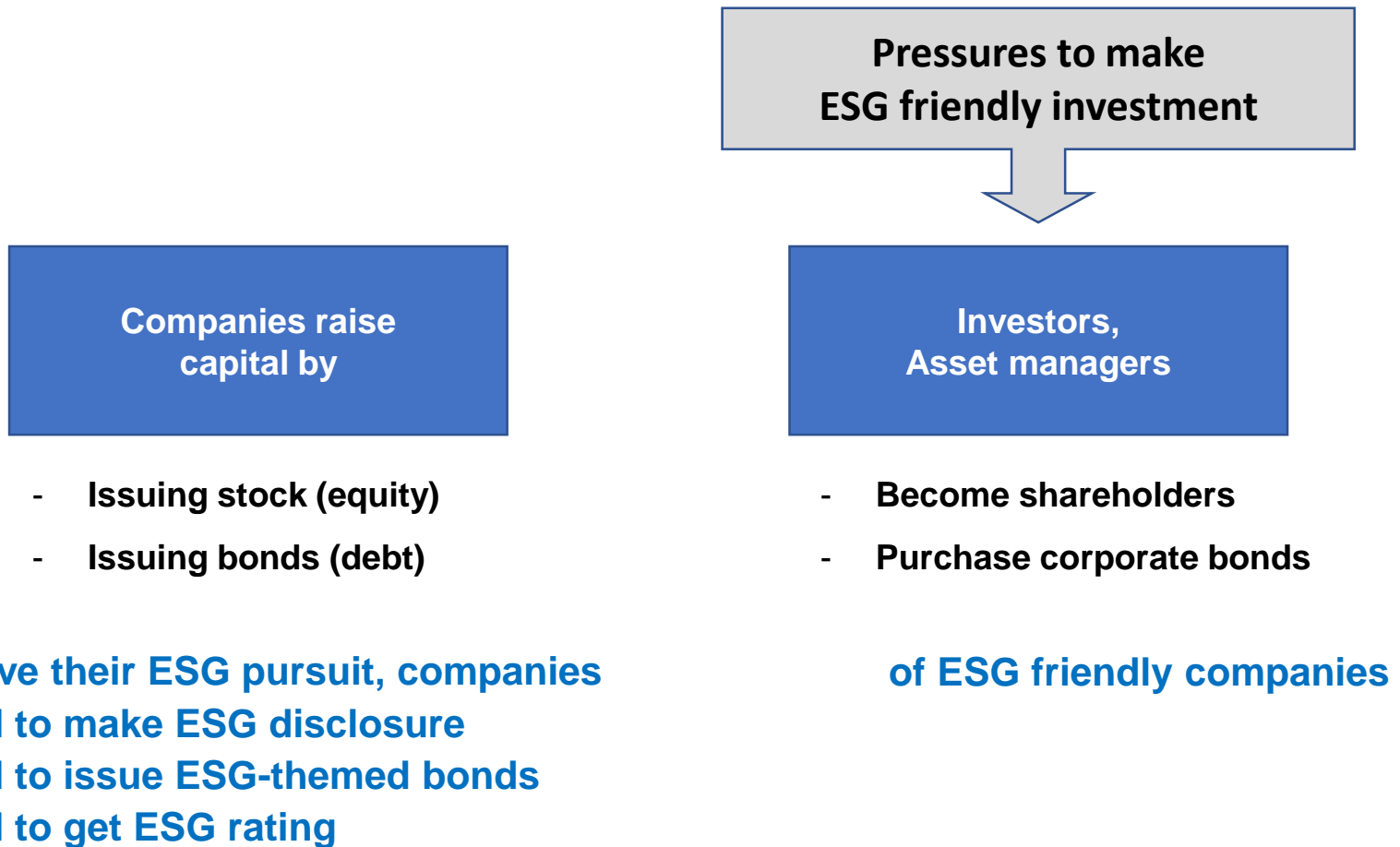
"Last year BlackRock **voted against or withheld votes** from 4,800 directors at 2,700 different companies... Where we feel companies and boards are **not producing effective sustainability disclosures**..., we will hold board members accountable."

"... we are in the process of **removing from our investment portfolios** of companies that generate more than **25% of their revenues from thermal coal production**..."



## 2. How ESG influences

Even to raise debt, you have to get ESG assessment and rating.



## 2. How ESG influences

Consultancies and rating agencies are enjoying the business, but reality is almost chaotic.

**If a company has an ESG rating for itself or its bonds,  
it can raise investments from ESG-sensitive investors  
(which are majority in the market now).**

**In order to make investment portfolios,  
investors also need indices such as ESG ratings.**

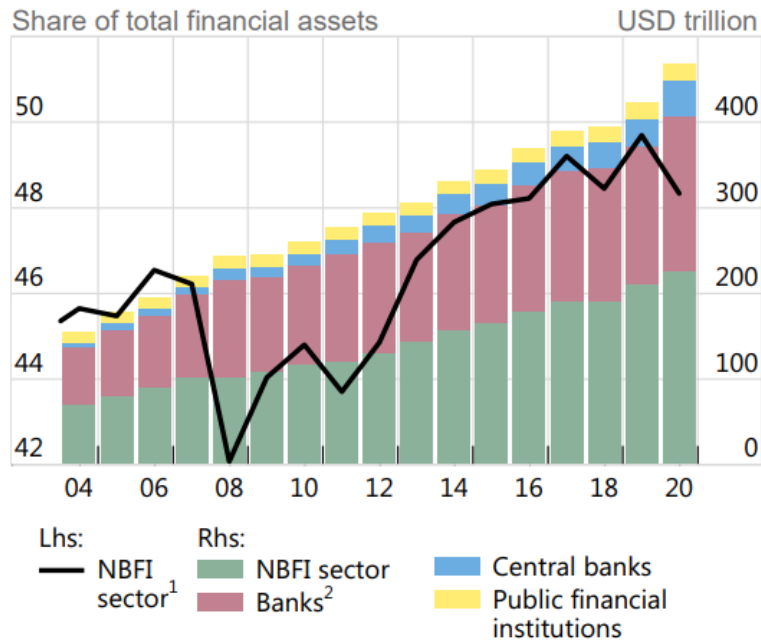
**So both companies and investors need ratings and consulting.**

**But because ESG are all non-financial values,  
there are over 1,000 ESG rating standards, and numerous ESG disclosure guidelines.  
Most of ESG rating standards are not disclosed in public.**

## 2. How ESG influences

Partially it is accountable that investment is outweighing lending in global finance.

Total global financial assets



Composition of the global financial system

	Total global financial assets	Central banks	Banks <sup>2</sup>	PFI <sup>3</sup>	NBFI sector
<b>Size at end-2020</b> (USD trillion)	468.7	41.9	180.4	19.9	226.6
<b>Share of total global financial assets (%)</b>	100.0	8.9	38.5	4.2	48.3
<b>Growth in 2020</b> (year-over-year, %)	10.9	32.3	11.1	7.7	7.9
<b>Growth 2014-19</b> (annualised growth, %)	5.0	6.9	3.7	4.5	5.9

<sup>1</sup> NBFI includes insurance corporations, pension funds, OFIs and financial auxiliaries. <sup>2</sup> All deposit-taking corporations. <sup>3</sup> Public financial institutions.

Source: Jurisdictions' 2021 submissions (national sector balance sheet and other data); FSB calculations.

- **Lenders' rules were simpler (e.g., Equator Principles, credit ratings, collaterals)**
- **Investors and asset managers should deal with much more diverse appetites**

### 3. ESG's problems

Companies' increased burdens lead to 'greenwashing' and 'greenflation'.

#### Companies' burdens

- [ESG] Legal and consulting fees for disclosure
- Direct costs for
  - [E] less carbon operation;
  - [E] substituting raw material with recycled;
  - [S] better employer package, safety measure;

#### Greenwashing

*Can we call it a green bond when the bond is for building plants, because they will manufacture batteries?*

#### Greenflation

*Will all these costs be borne by companies themselves, or, will they be passed through and added on consumer prices?*

### 3. ESG's problems

Going green either costs you or drives the company less profitable.



친환경 소재

나이키 에어맥스 테라스케이프  
90

남성 신발

3 컬러

179,000 원

나이키 에어맥스 90 SE

남성 신발

1 컬러

159,000 원

F12 DRAGNET

MESSENGER MEDIUM ₩346,000



Same kind, but the one made of sustainable materials costs more

“Upcycled” bags made of used parachutes or tents also have steep price tags



Though the company was dubbed ‘Textbook of ESG management’, the CEO was held responsible for recently worsened performance.

### 3. ESG's problems

We have to give it a thought whether what we are doing is truly ESG friendly.

As per their nature, solar and wind do not produce consistent power. If they 'always' need supplementary power, should they be considered legitimate power sources?

While ideal energy policy should be to supply enough energy whenever it is needed, are solar, wind and hydro qualified to substitute all conventional thermal power?

Renewable energy itself is unlimited. But are materials for the facilities, equipment, infrastructure unlimited?

- Lithium, nickel for batteries
- Balsa tree for wind turbine blade: Ecuador is being deforested and polluted
- Carbon emission in the manufacturing process

### 3. ESG's problems

We have to give it a thought whether what we are doing is truly ESG friendly.

Aug 2, 2020, 10:40pm EDT | 928,665 views

## The Dirty Secrets Of 'Clean' Electric Vehicles



**Tilak Doshi** Contributor

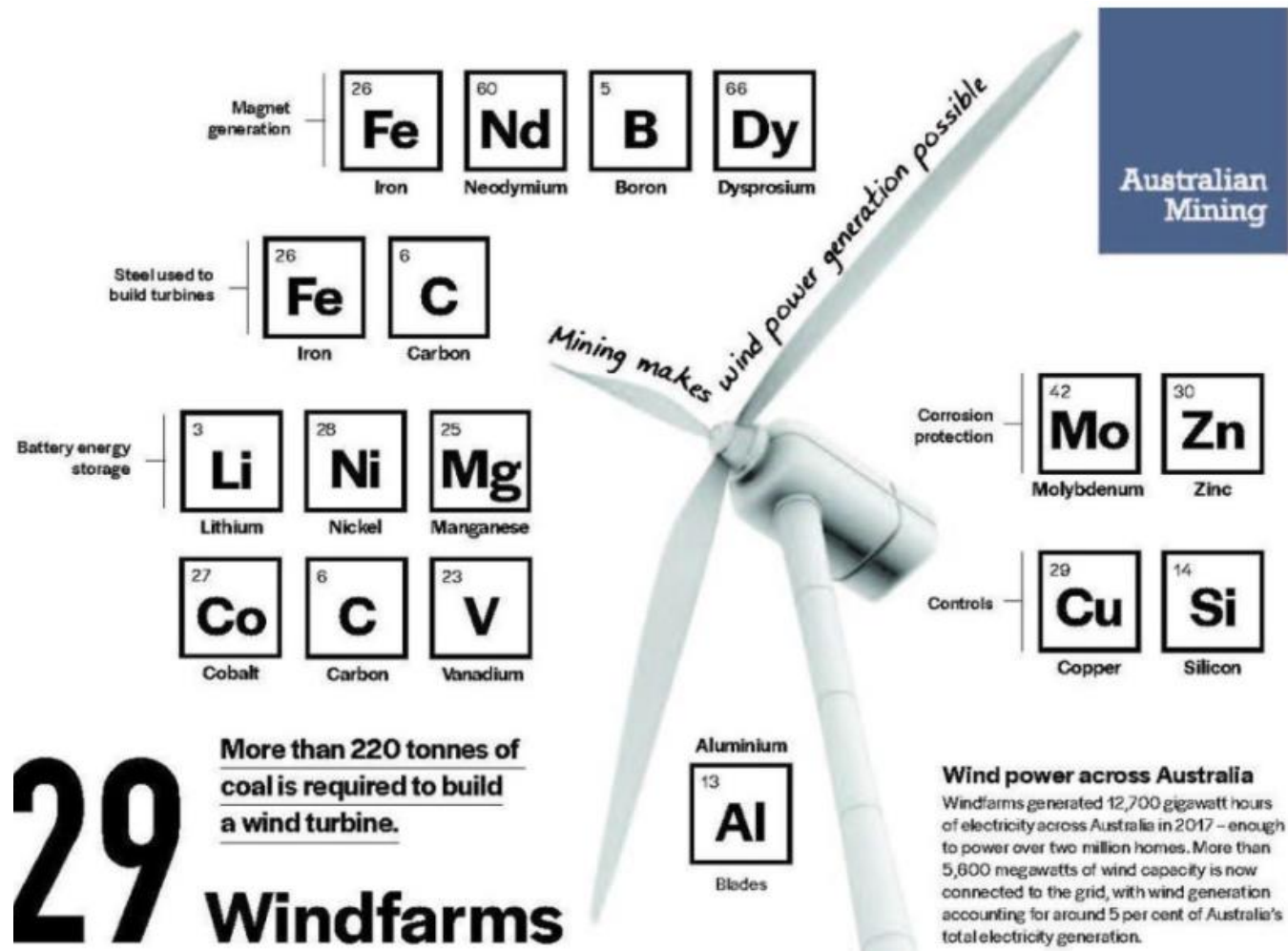
Energy

*I analyze energy economics and related public policy issues.*

There are **7.2 million battery EVs** or about 1% of the total vehicle fleet today. To get an idea of the scale of mining for raw materials involved in replacing the world's gasoline and diesel-fueled cars with EVs, we can take the example of the UK as provided by **Michael Kelly**, the Emeritus Prince Philip Professor of Technology at the University of Cambridge. According to Professor Kelly, if we replace all of the UK vehicle fleet with EVs, assuming they use the most resource-frugal next-generation batteries, we would need the following materials: about twice the annual global production of cobalt; three quarters of the world's production lithium carbonate; nearly the entire world production of neodymium; and more than half the world's production of copper in 2018.

### 3. ESG's problems

We have to give it a thought whether what we are doing is truly ESG friendly.





### 3. ESG's problems

Greenflation in energy sector is already a problem, causing Greenouts.

#### *The California and Texas Greenouts*

Renewables show again that they aren't reliable to power the grid.

By [The Editorial Board](#) [Follow](#)

June 16, 2021 6:40 pm ET

A big problem is that subsidies and mandates have spurred an over-development of renewables, which has resulted in gas plants operating at lower levels or even idle much of the time. Keeping standby units in top condition is hugely expensive. So when plants are required to run all out to meet surging demand or back up renewables, problems crop up—as they did this week.

This is the fossil-fuel-free future that folks in the other 48 states have to look forward to under Democratic climate plans. Pro survival tip: Buy a diesel generator—while you still can.

Americans panic-buy firewood and stoves amid energy crisis (2021.11.21., ZeroHedge)

Generac Power Systems' quarter revenue jumped up by 68%.

The median household income of Generac's customers are twice of the US.

(2021.9.10., edited from WSJ article)

### 3. ESG's problems

Greenflation in energy sector is already a problem, causing Greenouts.

System average price, pence per kilowatt hour, seven day rolling average,  
1 January 2020 to 23 January 2022, non-seasonally adjusted, Great Britain



## Ovo Energy sorry over advice to cuddle pets to stay warm

By Michael Race  
Business reporter, BBC News

🕒 11 January



# ISUS

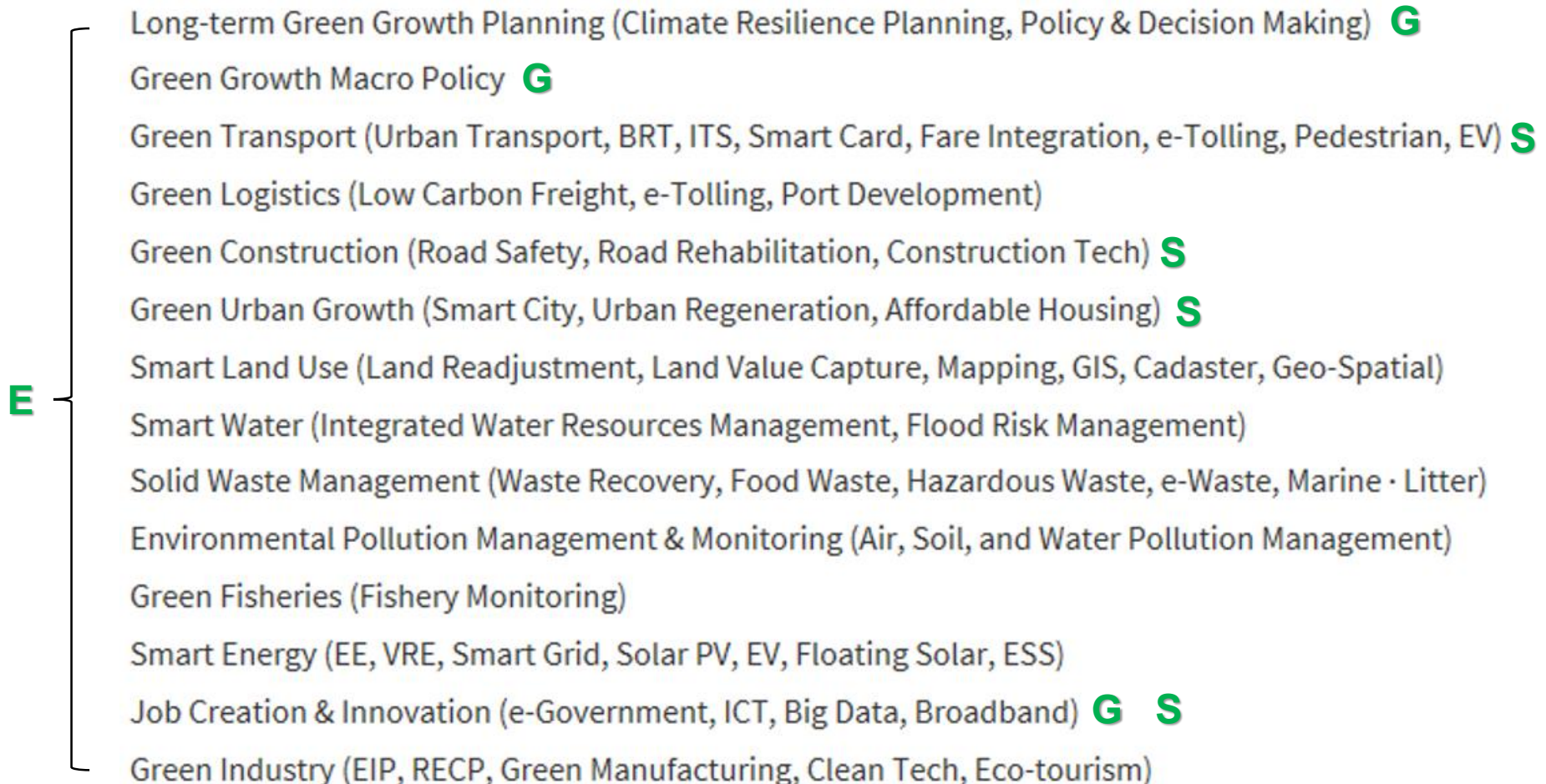
International School of Urban Sciences

## **Act II. Smart city development in practice**

---

# 1. Smart city and ESG

Smart city was already categorized green growth, and many other green growth areas can have positive impact in Social and Governance aspects.



Source: Korea Green Growth Trust Fund's green growth area categories

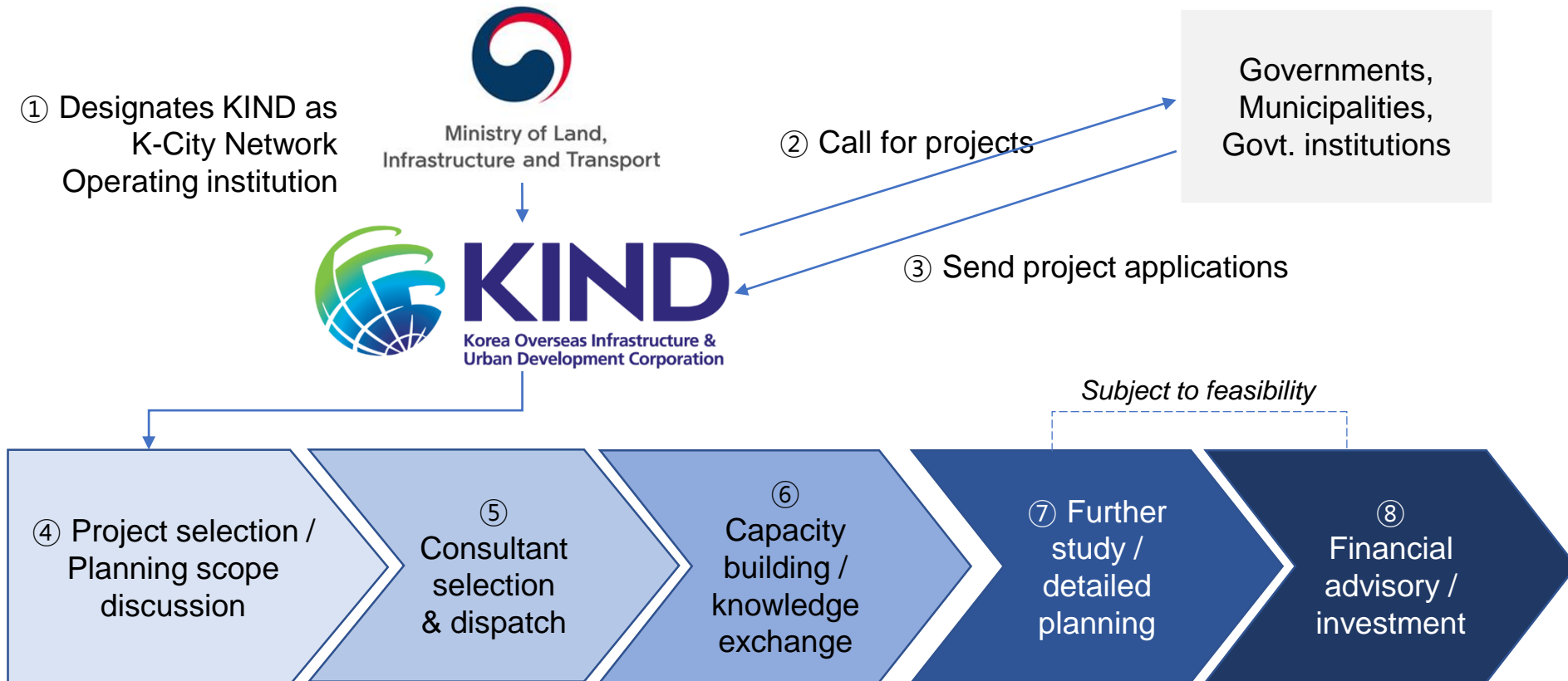
## 2. A snapshot of the world's smart city demand

By running 'K-City Network' program, the following insight was captured.

- **K-City Network is funding**
  - 1) Project planning/analysis
  - 2) Online/offline capacity building
  - 3) (For private companies) Smart solution demonstration
  
- **Merits of the program**
  - 1) Speed: Apply in 1Q / Selection in 2Q / Consultants hired and kick-off in 3Q
  - 2) Simplicity: Application form is simple and does not require long time to edit
  - 3) Open for the level of smartness

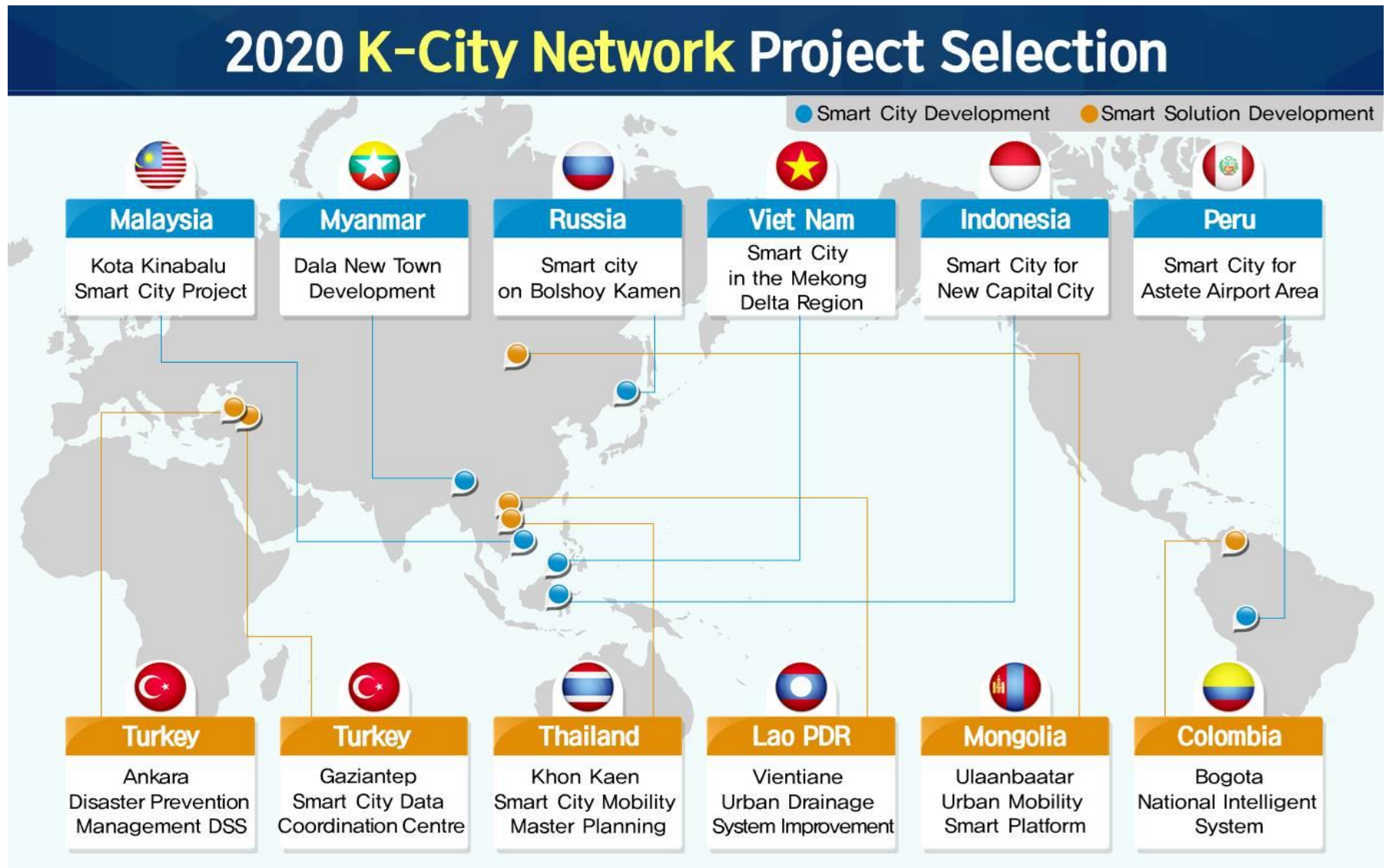
## 2. A snapshot of the world's smart city demand

- Process of the program



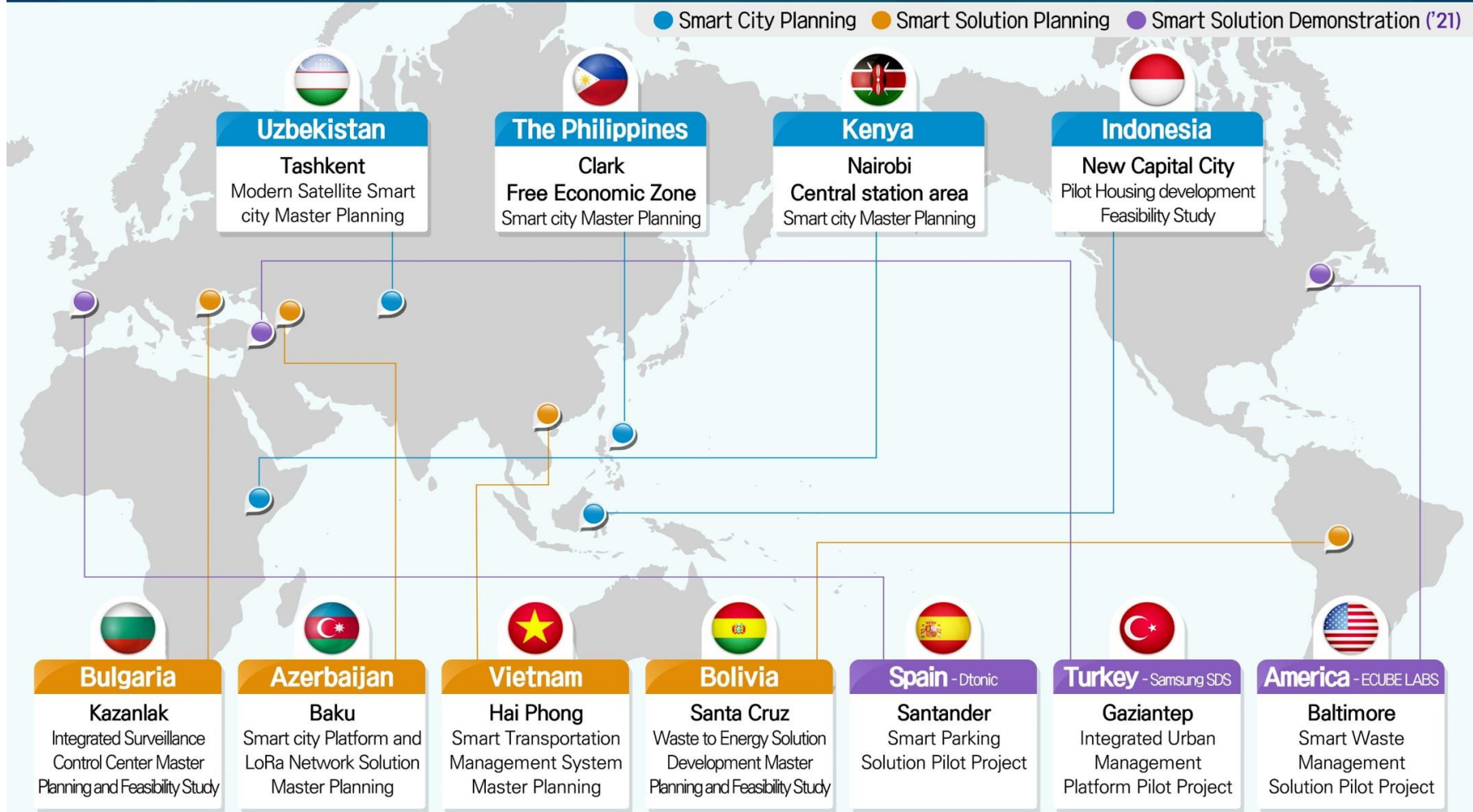


## 2. A snapshot of the world's smart city demand



## 2. A snapshot of the world's smart city demand

# 2021 K-City Network Project Selection





## 2. A snapshot of the world's smart city demand

By running 'K-City Network' program, the following insight was captured.

- **Smart city development purposes**

- 1) Tackle existing city's urban problem

Clark Smart city, PH

Nay Pyi Taw Smart metering, MM

- 2) Future-proof new city development

New capital city housing pilot, ID

Ha Tinh Smart city, VN

- 3) Smarter tourist locations, campuses

Penang Island New township, MY

Pankor Island Smart mobility, MY

- **Smart city development governance**

- 1) Federal government's initiative



- 2) Regional government's initiative



- 3) Regional demands collated by Federal



## 2. A snapshot of the world's smart city demand

By running 'K-City Network' program, the following insight was captured.

- **Most requested smart solutions**

- 1) Transportation / mobility

Subic Bay port, PH

Danang, VN

Hai Phong, VN

- 2) e-Government incl. security/safety

Jakarta geospatial, ID

Panabo, PH

Phnom Penh, KH

- 3) Water / environment management

Nay Pyi Taw, MM

Klang air pollution, MY

- **Other insights**

- Successful engagement brings the next step engagement
- Smart solutions can contribute to improvement in ESG
- # from Regional >> # from Federal

### 3. Smart city development in principle

To realize the smart city projects, there are works to do for each stakeholder.

Government

Private  
Sector

DFIs,  
MDBs

G1

#### **Visionary urban planning**

- Future-proof rule setting
- Consider induced demands

P1

#### **Motivation and Innovation**

- Seoul multimodal terminal
- Re-paving Gangnam str. area

D1

#### **Knowledge/info sharing**

- Policy advisory to govt.
- Info sharing among DFIs

G2

#### **Setting rules and incentives**

- Freezing price / sales
- Transferrable tax incentives

P2

#### **Financing and Investment**

- Equity/fund investment
- Loans/Guarantees

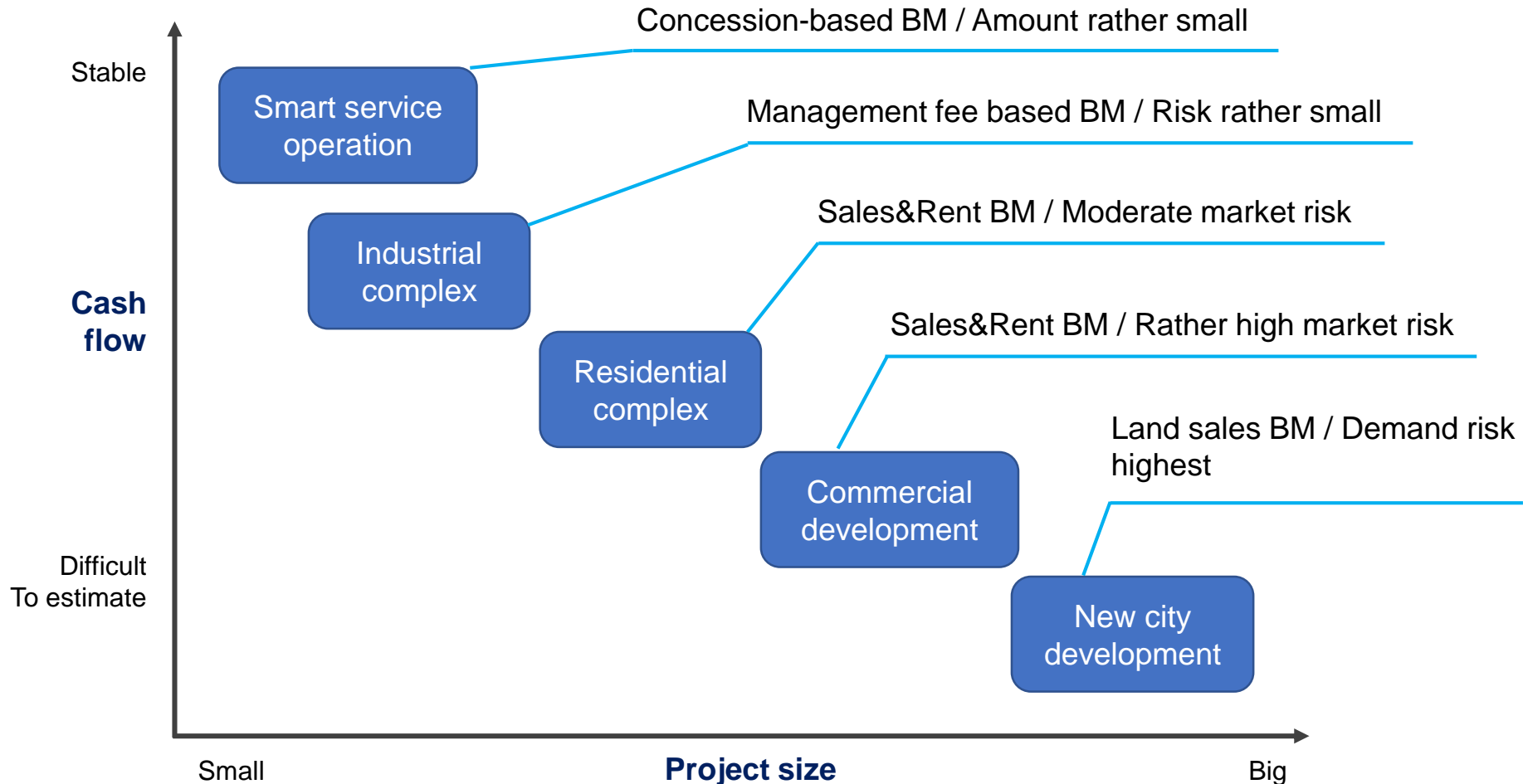
D2

#### **Leading blended financing**

- Realistic phasing
- Proactive structuring

### 3. Smart city development in principle

Business model of a development project is the key for funding the project.  
And according to target projects, business model and risk profiles vary.



### 3. Smart city development in principle

Business model and risk profiles will shape financing methodology.

Smart service  
operation

- Areas: Mass transportation card, e-Citizen services
- BM: Concession (Fee per clearing, Fee per issuing register)
- Financing: Conventional project financing

Industrial  
complex

- Areas: Industrial zone, special economic zone development
- BM: Building infrastructure – Lease – Management fee & rent
- Financing: High equity, low or no debt, land mortgage

Residential  
complex

- Areas: Developing countries' major cities and their vicinities
- BM: Sales or lease / Involving moderate degree of demand risk
- Financing: Sponsor g'tee, land mortgage, sales installments, financial support to buyers with local banks

Commercial  
development

- Areas: Location with high population flows, Residential areas
- BM: Lease and sales - Management fee & rent
- Financing: Land mortgage, sales installments, lease deposits

New city  
development

- Areas: Target area designated by the government
- BM: Planning, basic infrastructure construction -> Land sales
- Financing: Blended financing including ODA

## 4. Smart city development in practice

KIND has 4 investment-approved projects in urban development.

It is also reviewing over 20 opportunities of both greenfield and brownfield projects.

- **Greenfield** projects: Project investments that relate to a DBFOM that is **recently awarded or under construction**;
- **Brownfield** projects: Project investments in infrastructure assets that existed before the time of procurement or that were previously greenfields, but **are in operation at the time the investment is made**; and
- **Yellowfields** or secondary stage: PPPs where the investment is related to **significant renewals, refurbishment or a substantial expansion of the existing infrastructure**

*The APMG Public-Private Partnership (PPP) Certification Guide*

### KIND's Investment in urban development

[Vietnam] Hung Yen Industrial zone

[Vietnam] Hanoi Affordable housing

[USA] Chicago Hotel yellowfield project

[The Philippines] Cebu Affordable apartments

### KIND looks for investment opportunities in

Greenfield projects to build newly

Brownfield projects to acquire existing building or complex and operate

Yellowfield projects to acquire existing building or complex then renovate and operate

## 4. Smart city development in practice

From previous projects, we think the following pitfalls must be avoided.



Let us not set too ambitious goals, such as 'zero emission', 'AI' smart city.

=> 'Populating target areas in sustainable enough manner' precedes.



Having the locals choose needed smart solutions is crucial.

=> As economic situations, culture, geological setups, and environments are all different.



Let us negotiate with open options, rather than with apple-to-apple trade.

=> In case MRG or VGF are not accepted, we should be flexible enough to ask other benefits in taxes, accounting rules, or subsequent projects.

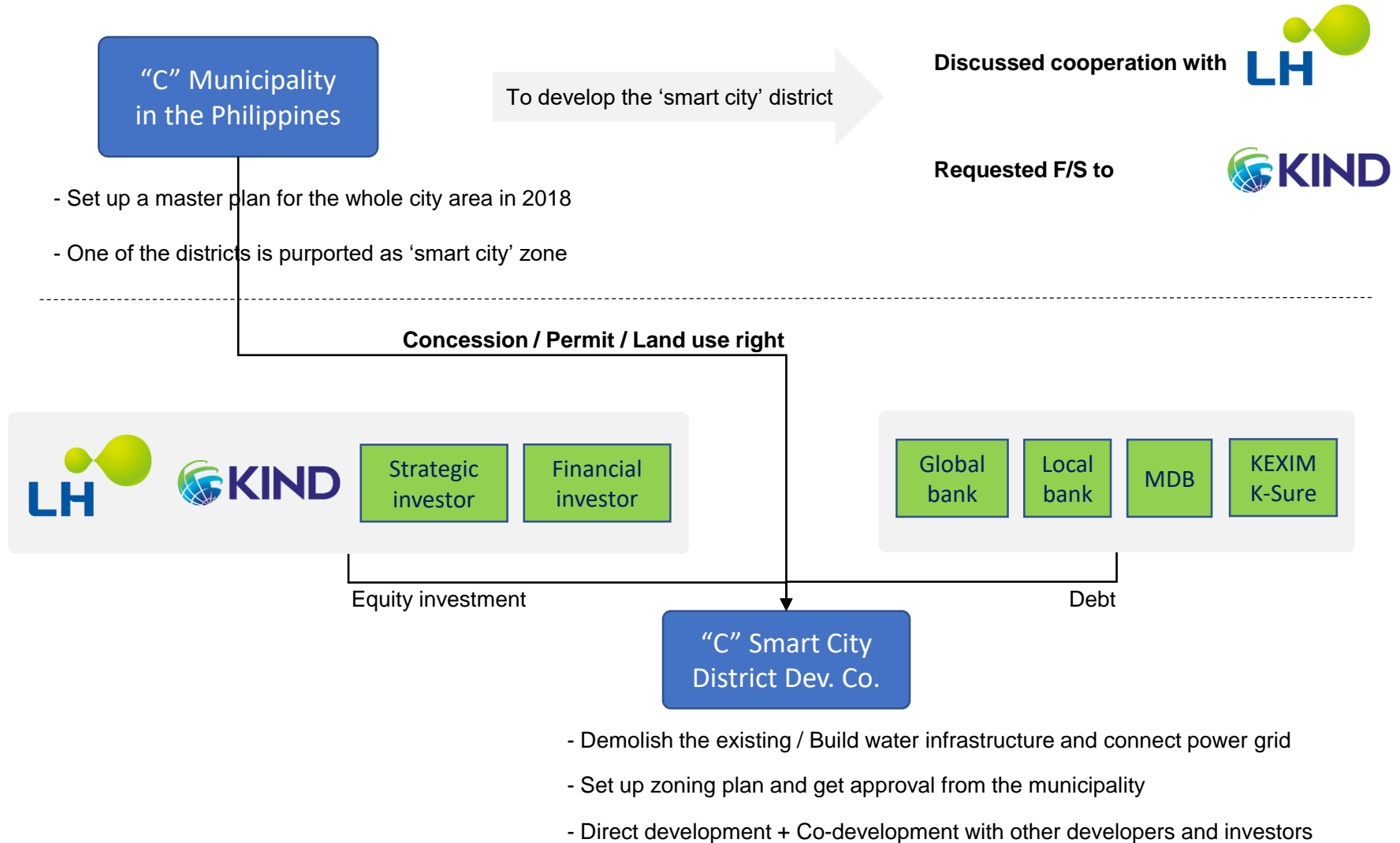


Let us not be confused with causes, results, or attendant circumstances.

=> Strong business potential (cause) can even populate an wilderness (result), while no one would come into a perfectly-set industrial park if there's not much business opportunities.

(Infrastructure alone cannot populate a city – we have to focus on creating business opportunities)

## 5. Case for KIND's greenfield project development





## 6. Case for KIND's yellowfield project development

"L" Hotel Company  
in Korea

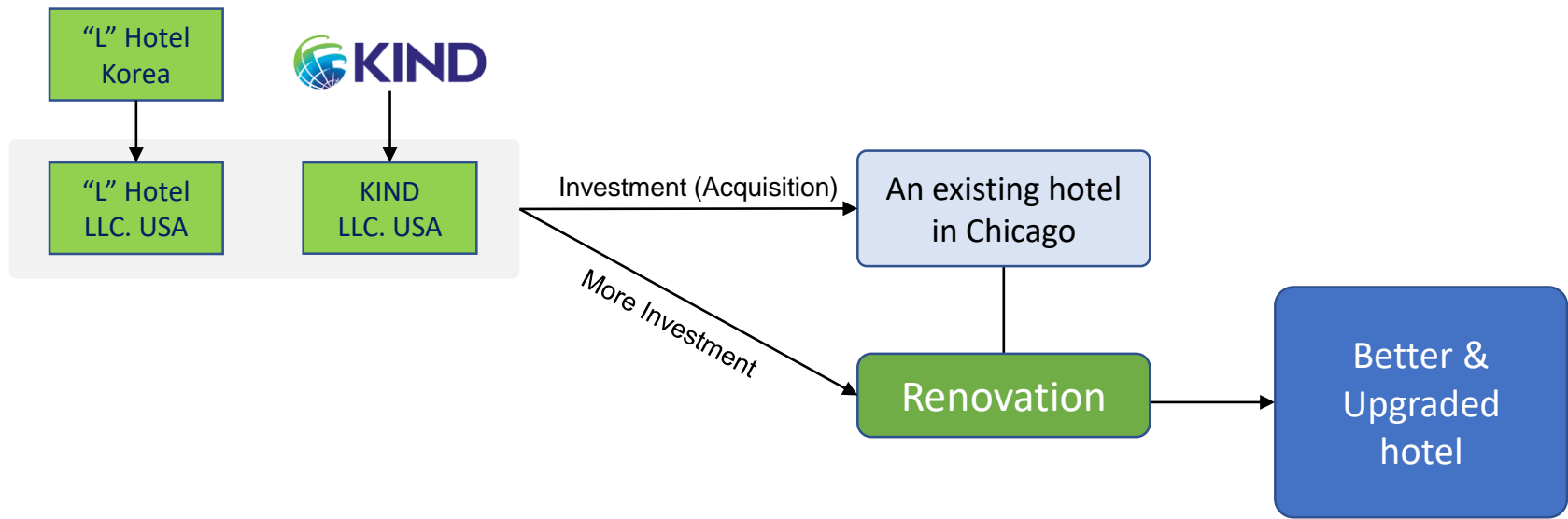
To invest for the yellowfield project

Went through its own due diligence

Proposed co-investment to



- Actively expands its overseas presence
- Found a good hotel to acquire and renovate in the USA



## 7. Case for innovative funding

As a leading country in finance, the US showed securitization of tax benefits can be a good source of urban development.

### 1. Hudson Yard redevelopment project



NYC has IDA (Industrial Development Agency), that runs 3 tax incentives for commercial development.

- PILOT(Payment in Lieu of Taxes) : Real estate tax reduction
- PILOST(Payment in Lieu of Sales Taxes) : Sales and use tax reduction
- PILOMRT(Payment in Lieu of Mortgage Recording Tax) : Mortgage recording tax reduction

These tax benefits are transferrable. So they are securitized, sold to others, and that payment from sales flows into project financing.

### 2. Bronx West Farms redevelopment project

LIHTC (Low Income Housing Tax Credit) Program offers 4% tax reduction for 10 years and this tax benefit was also securitized and sold to others, and the amount flew into project funding.

# Let's go over again

ESG was emerged because of

- growing necessity to deal with accelerated global warming (E),
- further development of CSR, CSV concepts (S),
- structurally changed global finance sector where investors are bigger than lenders.

It is all so good a concept, but

- Rating agencies and consultancies made it too big, while Greenflation, Greenwashing appear.
- We may have to admit that drastic change is not possible and take more realistic approaches.

Smart city is still valid because

- it will be environmentally, socially, and democratically good if it is truly smart.

Cities can get smart by

- adopting smart solutions (for both tackling old cities' problems and developing new cities)
- To finance it, incentivization for private sector (providing strong BM and tax benefits) is the key.



# Thank you very much

- **[Contact] Ryan Lee**

[kb.lee@kindkorea.or.kr](mailto:kb.lee@kindkorea.or.kr) / +82 2 6746 7365