



ISAP2019

2019 7.30-31 PACIFICO YOKOHAMA, Annex Hall

IGES
Institute for Global
Environmental Strategies

Thematic Track 17: How to Enable Constructive Discussion on Carbon Pricing

Carbon pricing in Korea: the latest progress, status and issues of the K-ETS

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Main topics

- Strategies shifting to a decarbonized society amid climate change in Korea
- Korea Emission trading scheme (K-ETS)
 - Deliberations and implementation
 - Scheme design and characteristics (2015-2018)
 - Performance in the first phase
 - Reaction and carbon management of business side
- Issues and further discussions

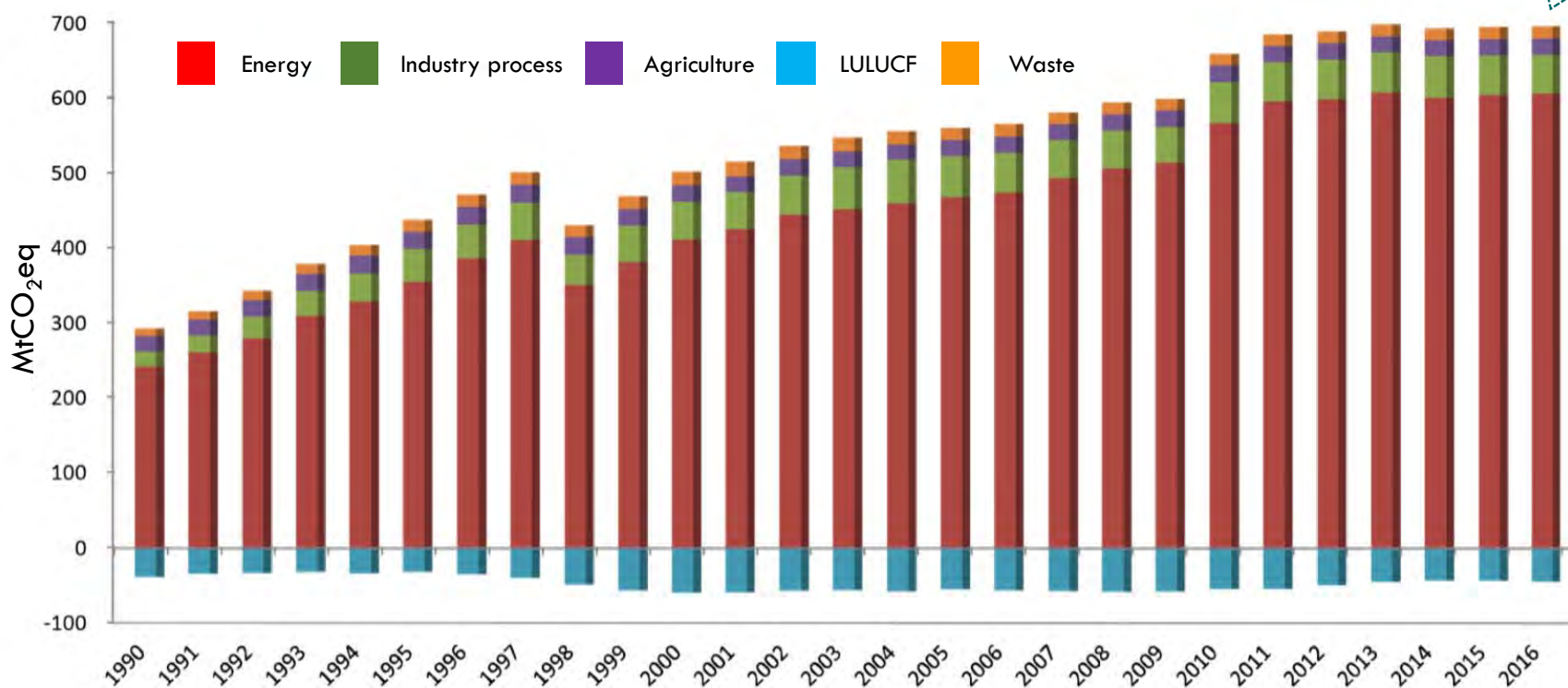


Illustration taken from the official blog of Korea Ministry of Environment

Emissions and removals of greenhouse gases by sector in Korea (1990-2016)

- 694.1 Mt-CO₂eq in 2016 (53% of Japan's emissions (1,307.9 Mt of CO₂eq) in the same year)
- First place in terms of emissions growth (compared to 1990) among OECD countries

694.1 Mt of CO₂eq

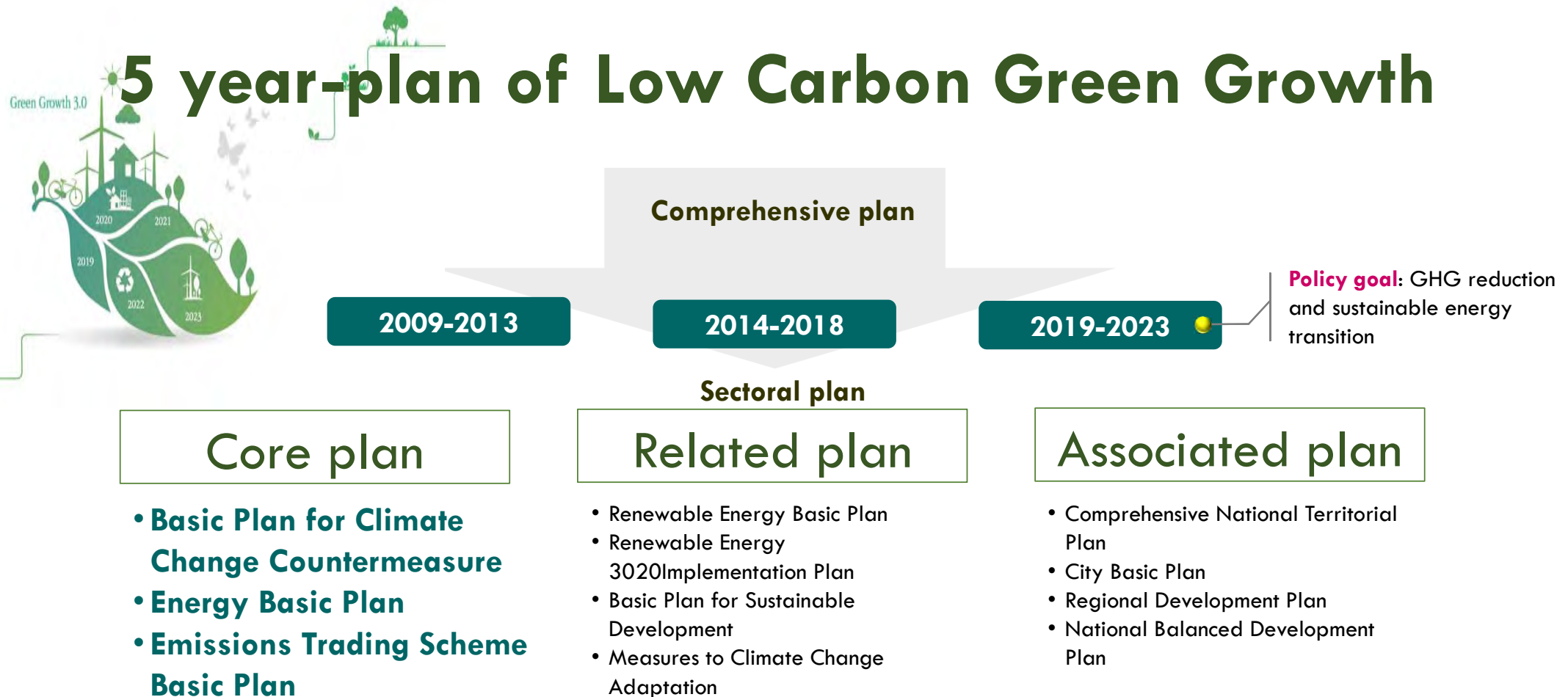


GHG mitigation targets

- BAU 30% by 2020
- BAU 37% by 2030
- Working on the **'2050 national low-carbon development strategies'** to be released in 2020

Source: National Inventory Report (2018)

Strategies shifting to a decarbonized society amid climate change in Korea



Source: 3rd Green Growth National Strategy (19-23)

Deliberations and implementation

In 2007 discussion on efficient GHG reduction using **market mechanism** was started.

The government has recognised the emerging importance of carbon pricing and changed its political focus from carbon tax to ETS by **emphasizing linkage with the international carbon market** in the future.

In accordance with the government's national vision and resultant heavy focus on low-carbon policy, **industry side** has been forced into a choice between either accepting carbon pricing, carbon tax or ETS.

Around 2008-10, several studies estimated the **social carbon cost** needed to meet Korea's 2020 GHG reduction goals and reached **30-50 euros**. They pointed out that while **ETS will be useful in reaching this carbon price level**, while carbon taxes would be difficult considering policy acceptance.

After a **preliminary proposal** for S. Korea ETS in 2010 and a second ETS proposal in 2011, the ETS bill, namely the **'Act on Allocation and Trading of Greenhouse Gases Emission Allowances'**, was finally approved by the parliament in May 2012.

K-ETS started in 2015.



Scheme design and characteristics

Scheme details		Korea
Law		Framework Act on Low Carbon Green Growth (2009)
Authorized government		Ministry of Environment
Scheme level		National ETS
Period	1 st phase	2015-2017
	2 nd phase	2018-2020
	3 rd phase	2021-2025
Target sector		Industry, power, building, transportation, public • waste
Targeted gas		CO ₂ , CH ₄ , N ₂ O, PFCs, SF ₆ , HFCs
Cover rate of the national GHGs		67.3% (2015-2018)
Number of entities		525→569→603
Transaction system (Market price opened or not)		Korea Exchange (o)
Penalties		o
LULUCF		o

Chronology and operational content of Phases 1 to 3

	1 st (2015–17)	2 nd (2018 –20)	3 rd (2021–25)
Allowance allocation	<ul style="list-style-type: none"> • <u>100% Free allocation</u>, no auctioning • Mainly grandfathering-based allocation except for 3 sub-sectors (grey clinker, oil refiners, aviation) 	<ul style="list-style-type: none"> • 97% free allocation, 3% auctioned. • Wide application of benchmark allocation method 	<ul style="list-style-type: none"> • Less than 90% free allocation, more than <u>10% auctioned</u> • Mainly benchmark-based allocation
Offset projects	<ul style="list-style-type: none"> • Diversifying domestic and CDM project methodologies • Promoting offset projects by reducing entry requirements for small scale projects. 	<ul style="list-style-type: none"> • Promoting domestic offsets projects: developing more projects by sector • <u>Promoting overseas offset projects:</u> allowing offset credits from <u>overseas projects</u> for compliance 	<ul style="list-style-type: none"> • Drawing up guidelines on overseas credits in accordance with the Paris Agreement negotiations • Diversifying methodologies for overseas projects
MRV	<ul style="list-style-type: none"> • Setting up the MRV mechanisms • Expanding verification bodies/verifier 	<ul style="list-style-type: none"> • Revising the emission report form for benchmark-based allocation • Upgrading the MRV standards 	<ul style="list-style-type: none"> • Capacity building for verifiers • Adopting international MRV standards
Carbon trading market	<ul style="list-style-type: none"> • Designating the S. Korea Exchange (KRX) as an allowance exchange • Implementing market stabilisation measures 	<ul style="list-style-type: none"> • Launching <u>regular auctions</u> • Considering adopting a market maker scheme 	<ul style="list-style-type: none"> • Allowing third party participation in the trading market
International cooperation and incentives	<ul style="list-style-type: none"> • <u>International cooperation with the EU, China and Japan</u> • Incentives for emission reduction facilities 	<ul style="list-style-type: none"> • Pursuing bilateral cooperation by developing local emission reduction projects • Investing auction profits into environmentally friendly projects 	<ul style="list-style-type: none"> • <u>Considering ETS linkage</u> • Diversifying investment portfolios

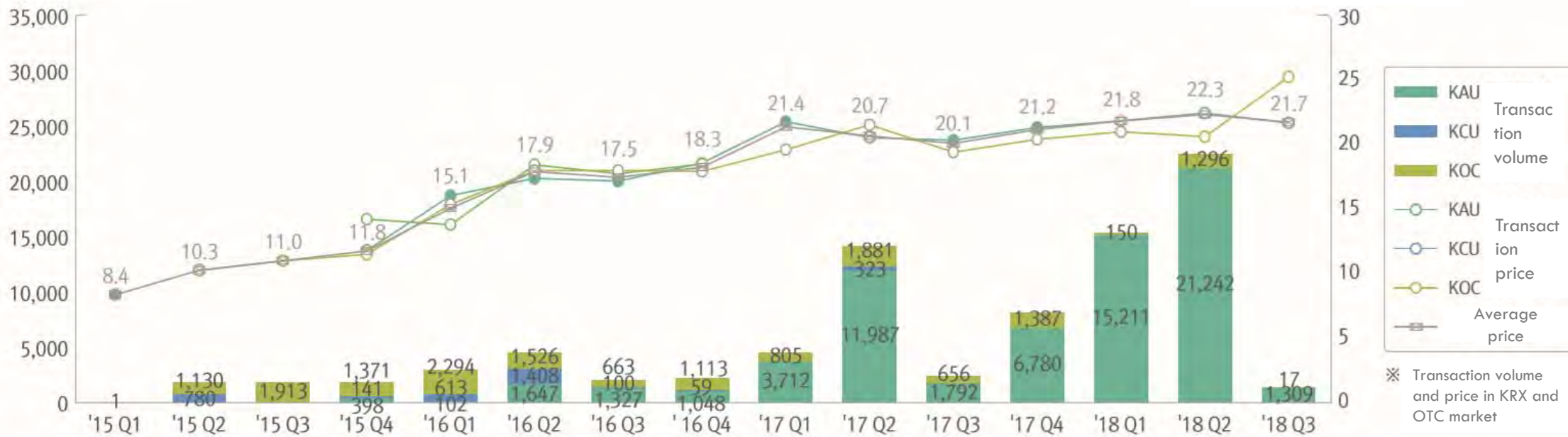
Source: The Second Basic Plan for the Emissions Trading Scheme (proposal) (2017.1)

How was going the carbon pricing and market in the first phase?

Performance (Unit)	2015	2016	2017
Compliance rate (%)	99.8	100	99.7
Total transaction volume (Mt)	5.7	11.9	29.3 (five-fold)
Average price of carbon (KRW)	11,007	17,179	20,879 (doubled)
Total transaction amount (100M KRW)	631	2044	6,123 (10 times)
GHG reduction (%)*	5.4	5.1	3.7 (average 4.7)

* Source: KECO (2019)

(Thousand ton)



Source: K-ETS Summary Report for Phase I (2015-2017)

How has the business side reacted to the K-ETS?

Strategies to meet the cap and participating in the carbon market

Action	Priority in 2015*	Priority in 2017**
To conduct internal GHG mitigation efforts and activities to meet the allowance	1	1
To borrow the allowance from next compliance year	2	3
To trade emission credits in the market	3	2
To utilize the emission credit through early action or offset credit	4	4
To pay penalty for excess emissions	5	5

Source : * The Korean emission trading scheme: business perspectives on the early years of operations (2017)

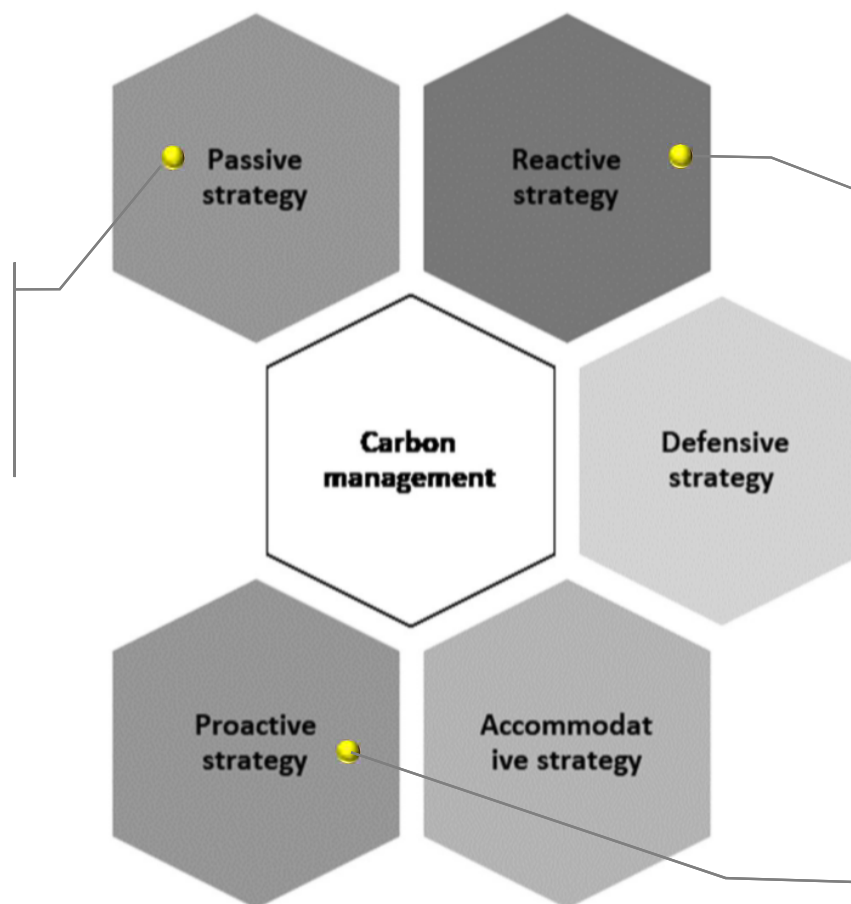
** South Korea's emission trading scheme and company's carbon management in the first phase (2019)

- In the first year, companies adopted a conservative stance **'wait and see'** on market participation due to policy uncertainty, short supply of emission credits in the market, and lack of institutional readiness.
- After years, under the mature response system, market participation became **activated**. On the other hand, it means that the carbon market price is **comparatively lower than their marginal abatement cost**.

■ Companies' carbon management under the carbon pricing

In 2015

In fact, their response to carbon pricing appears, on the whole, to still be at an **initial stage** as far as adopting a systematic and analytic approach goes, which is to say, their response is more akin to compliance, the remit of which remains within the bounds of existing strategies **focusing on pollutant reduction targets**.



They are likely to be affected by the need to appear socially responsible as a part of **Corporate Social Responsibility (CSR)** or to make a social contribution, without having to exceed this mandate in terms of activities outside of this remit.

Korean companies have yet to reach the stage of proactive management.

Strategic STAGEs of carbon management

Source: Determinants and Characteristics of Korean Companies' Carbon Management under the Carbon Pricing Scheme (2018)

In 2018

The remarkable difference were placed below three activities:

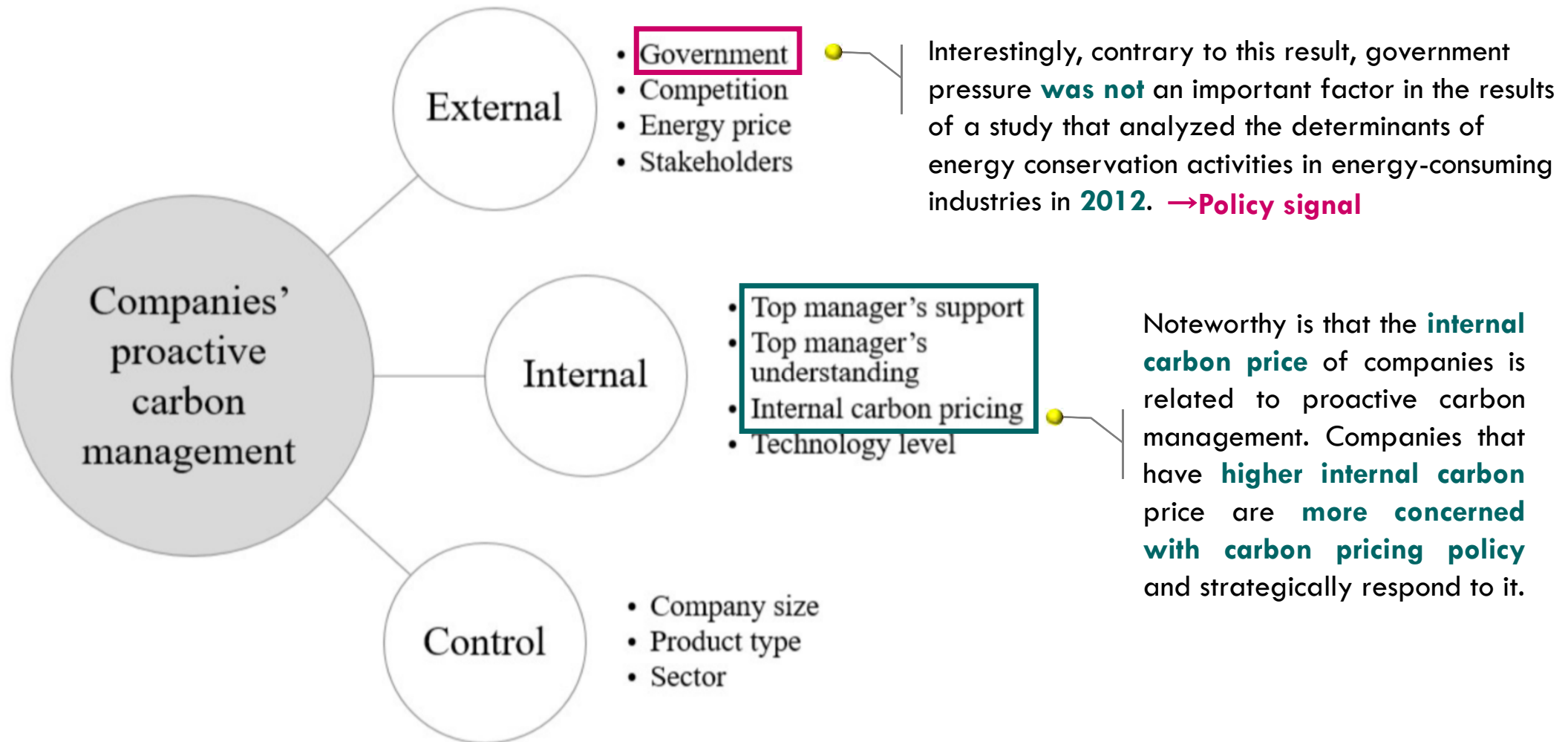
- (1) establishing a decision-making body and cooperative system in response to climate change between related divisions in **two dimensions- horizontal cooperation: General executive + ETS department + Finance department + Strategy and planning department, and vertical cooperation: Headquarters + individual sites** (actual reduction activities),
- (2) setting an **internal carbon prices** and apply them for **ROI** when investing in low carbon equipment and facilities, and use them to create carbon funds and
- (3) structuring a **carbon market response system** for transaction decision making system, analysis and identification of periodic carbon market trends and etc.

Carbon management	Sectors*	Power	Chemical	Electrical	Electronics	Semiconductor	IT	Tire manufacturing	Food
Establishing a cooperative system between related divisions		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Set the long term GHG mitigation target		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Set the internal carbon pricing		Market price	30000won	Market price	Market price	Market price	Market price	Market price	Market price
Applying the ICP to ROI		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raising a carbon fund			<input type="radio"/>					<input type="radio"/>	
Constructing transaction decision-making system		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducting analysis and identification of periodic carbon market trends		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Sectors where the interviewed companies are belonging in.

Source: the author listed based on the findings through interviews

Determinant factors for companies' proactive carbon management



Source: Determinants and Characteristics of Korean Companies' Carbon Management under the Carbon Pricing Scheme (2018)

Issues and further discussions

Settlement of the carbon policy and maximization of the policy effectiveness :

- Electricity market-carbon market: renewable energy under the RPS; direct/indirect emission;
- Government-business communication: allowance allocation; asymmetry information for SMEs; corporate abatement methodology;
- Carbon market: market liquidity; price stability; government intervention; system operation;
- Carbon market linkages
- Forest project in N. Korea

Thank you very much



Reach to me for the questions and comments through
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