

Lessons learned for Private Sector Engagement (VCM & Tech)

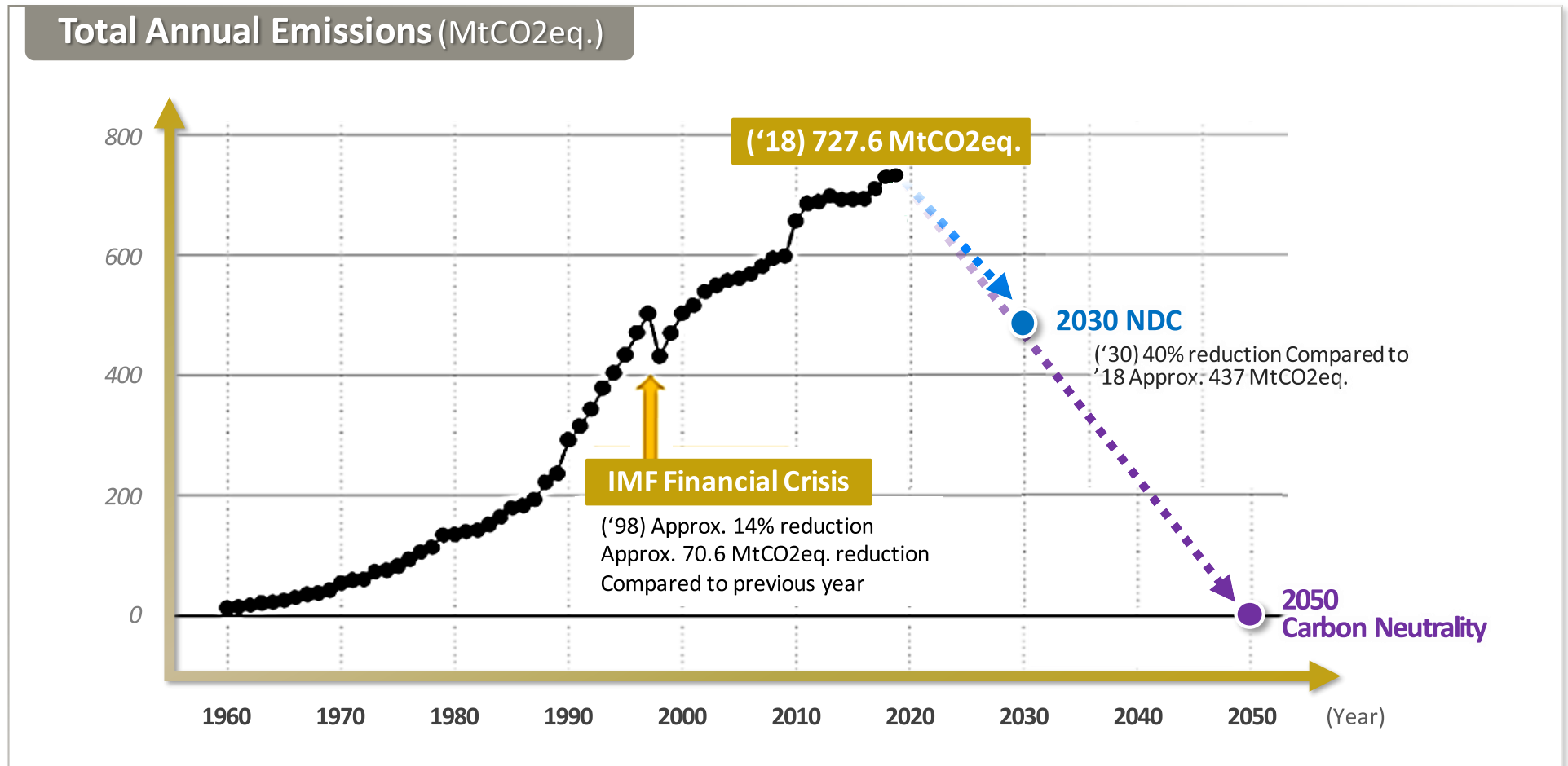
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Korea's Dilemma similar to the Developing

- ◆ **More reduction needed** for **more energy intensive industrial structure**



Source: Jewoo Hong, Associate Researcher, Korea Environment Institute (KEI), May 11, 2021

Lessons for the Developing to engage Private Sector



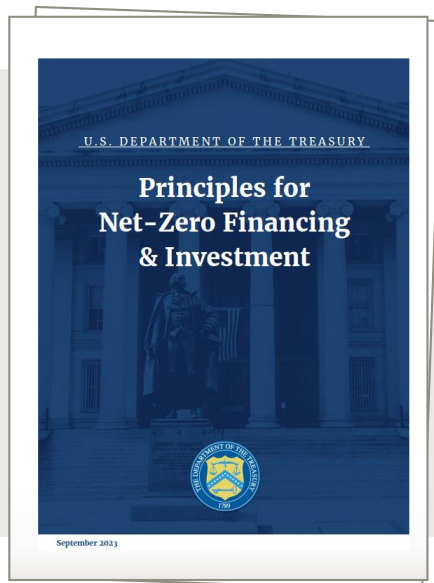
Carbon Market by Pricing (Compliance vs. Voluntary)

Compliance Carbon Market (ETS)

- A scheme where the government allocates GHG credits to companies and allows them to discharge within such credits and to trade the same with each other in case of insufficient/excess credits.

Voluntary Carbon Market

- Market where private actors voluntarily buy and sell carbon credits that represent certified removals or reductions of GHGs in the atmosphere.



In a speech at Climate Week NYC, US Treasury Secretary Janet Yellen unveiled a set of net zero principles that included a reference to high-quality carbon credits as “potentially important channels” for unlocking capital needed to limit average temperature rise to 1.5C :

“ High-integrity VCMs represent potentially important channels for unlocking significant capital to climate-impactful investments that can help limit the increase in the global average temperature to 1.5°C. Treasury and other federal agencies are actively engaging with relevant stakeholders, including international partners, on ways to assess and improve the quality of VCMs and carbon credits so that this potential may be realized ”

VCM just launched in Korea

- ◆ **Korea Chamber of Commerce and Industry (KCCI)** opens Voluntary Carbon Market in 2023 to meet private sector's needs to attain net zero goals
- ◆ **KCCI Carbon Standard (KCS)** with MRV principles has been developed since 2021 (by SK group's support) based on Korean carbon market experience for a decade.

Private Sector's Demands on VCM

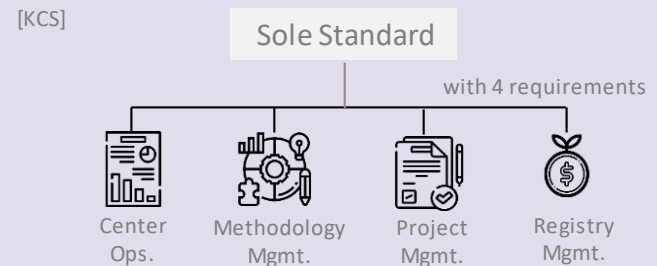
More than 150 Korean companies declared their net zero goals since early 2020s.

Various efforts from enterprises in Carbon Reduction



KCCI's Action on VCM

Established a carbon standard (KCS) program to assess private sector's carbon reduction



In Progress

Totally registered 17 methodologies from various type of business as of 2023,
and then issued 186,000 credits from 5 projects as **KCR (KCCI Certified Reduction)**

	2021	2022	2023
Registered Method.	<ul style="list-style-type: none"> ① REDD Projects in Korea ② Distributing cookstove in Myanmar ③ Electricity saving low-power eSSD ④ Fuel reducing low-temp. mix asphalt ⑤ Lubricant enhancing fuel efficiency ⑥ Electric/hybrid vehicle battery ⑦ Mangrove forest in Vietnam ⑧ Eco-friendly transporting salt water ⑨ Waste plastic depolymerization tech. ⑩ Energy saving window film 	<ul style="list-style-type: none"> ⑪ Recycling single-use cups ⑫ Lube oil enhancing fuel efficiency ⑬ Carbon storage using bio-materials ⑭ Electricity saving semiconductors ⑮ Fuel with recycling waste tires ⑯ Saving single-use products for food delivery service 	<ul style="list-style-type: none"> ⑰ Eco-friendly De-icers with starfish ... and more
Offset Credits Issued*		<ul style="list-style-type: none"> ③ 22,129 ton CO₂ eq. ④ 1,244 ton CO₂ eq. ⑤ 49,091 ton CO₂ eq. ⑥ 41,555 ton CO₂ eq. 	<ul style="list-style-type: none"> ⑤ 46,931 ton CO₂ eq. ⑯ 25,645 ton CO₂ eq.

* Each of tons came from each numbered project matched with same numbered methodologies as above.

What's next?

◆ KCCI is aiming to expand the **program** into other countries with growth-oriented industry

Plans ahead

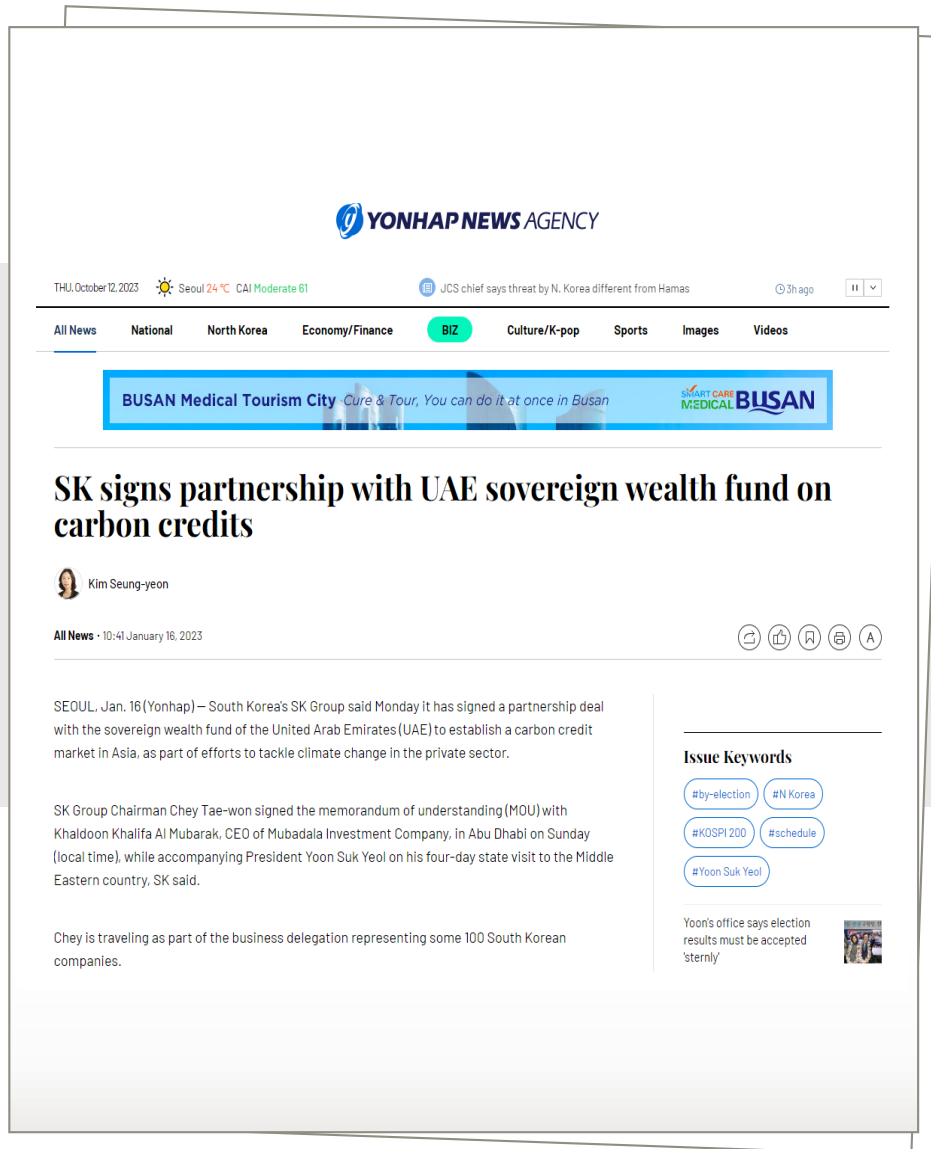
- Build & strengthen a global network (by Participating in **COP28** and more)
- To upgrade KCS and build up diverse type of verification programs
- **Facilitate brand new start-ups and technologies with EPC*** model

Expansion Plans



* EPC (Environmental Protection Credit): Credits before the event with a concept of advanced financing into tech-based projects; Issuing preliminary credits before project execution, and then replacing it with offset credits after the actual reduction

Building consensus in Asia



During the Korean Presidential visit to UAE, KCCI signed a MOU for Asia Partnership with Mubadala Group

(Jan 15, 2023)

WBG can leverage KCCI to launch VCM in MENA

WB teams have been guiding governments to **overcome policy, investment & project-level barriers** to generate high quality credits...



Provide advisory services & analysis to navigate CPIs and carbon markets



Support development of carbon pricing instrument policies & systems



Support ERC generation through portfolio of WB projects



Engage stakeholders for capacity building & linking public with private actors

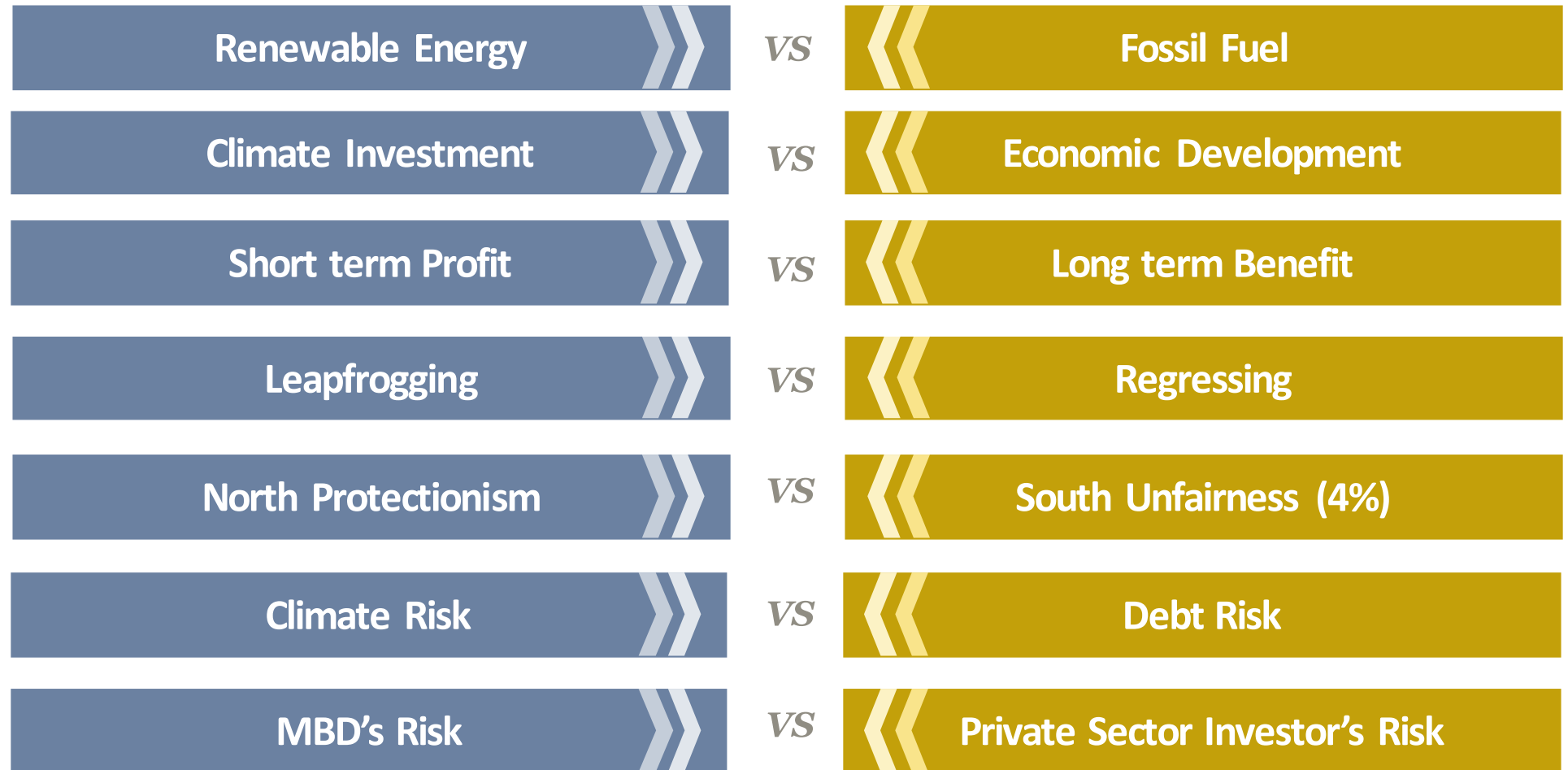


Knowledge

Experience



Innovative Technology can narrow the gap between



⋮

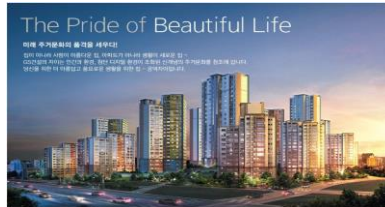
Case Study : Kevin LAB

Energy + Digital technology-based building energy solution company (Korea's No.1)

Performance since 2017



+6,518
Building

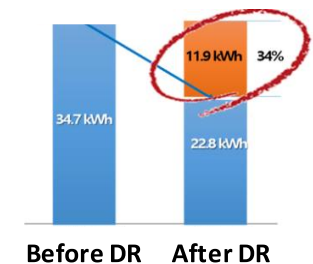


+205,123
Household (APT/Home)

- **HEMS/BEMS (Energy as Service) subscription for buildings (residential/non-residential) with ICT (communication equipment) and IoT sensors (energy and environmental data)**
 - Reduce energy costs through : Electricity charges by time of day, Control energy supply & demand, Real time App (check and predict), Renewable energy O&M, Demand Response (DR)
- **Starting with Malaysia corporation, expand across Asia → What's next?**
 - Expanded to Asia (Malaysia, Vietnam, Thailand, Indonesia, Japan, etc.) and other regions (Serbia, Mexico, etc.)

Case 1. HEMS

Sejong Roren House (60 households) in Korea used HEMS (electricity charges by time of day, real time prediction of electricity costs, etc.) and **saved up to 34% of energy** (average 17%) in August, 2020.



Case 2. BEMS

AIoT-based BEMS (daily analysis of energy usage of boilers, etc.) installed in Serbia helped **save energy used for heating by 19%**. Starting from 2024, will expand to power, heating, and water supply.



* HEMS (Home Energy Management System); BEMS (Home Energy Management Systems); AIoT (Artificial Intelligence of Things)

Thank you

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