

# A Present and Future of KCCI center towards a Voluntary Carbon Market

Nov. 4<sup>th</sup> (Mon), 2024

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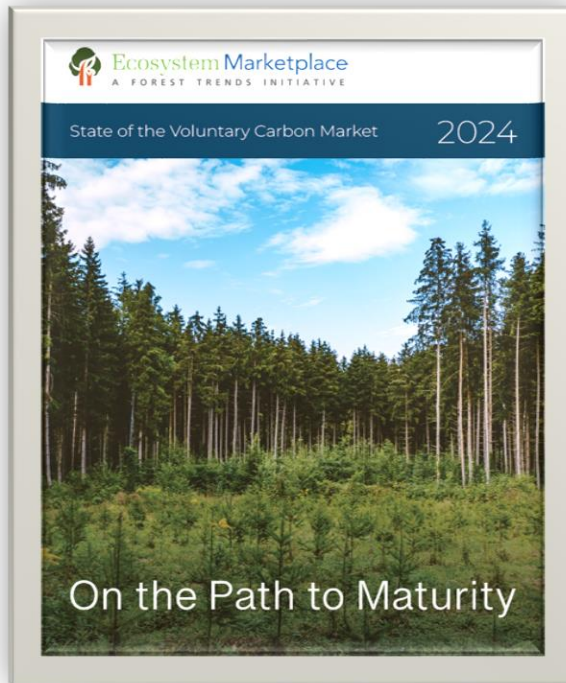


# Global VCM at a glance

- Since the green washing issues in negative reports arise, VCM price was in slump in 2023
- Global initiatives include ICVCM, VCMI keep up efforts in enhancing the VCM reliability



## Global VCM Outlook



\* Source : State of the Voluntary Carbon Market 2024  
(Ecosystem Marketplace)

### 1 Negative Reports

- 'Phantom Credits' reported by The Guardian ('23.1)

### 2 Credit unit price in decrease

- Offset credit price per ton is ('22) US\$7.37 to ('23) US\$6.53

### 3 Market volume in a recession

- 56% decreased in transactions, 61% in market volume

### 4 VCM integrity guidelines are made

- ICVCM and VCMI lead to enhance the quality of VCM credits

### 5 Selective credits are preferred

- Credits from carbon removal or co-benefits added are preferred

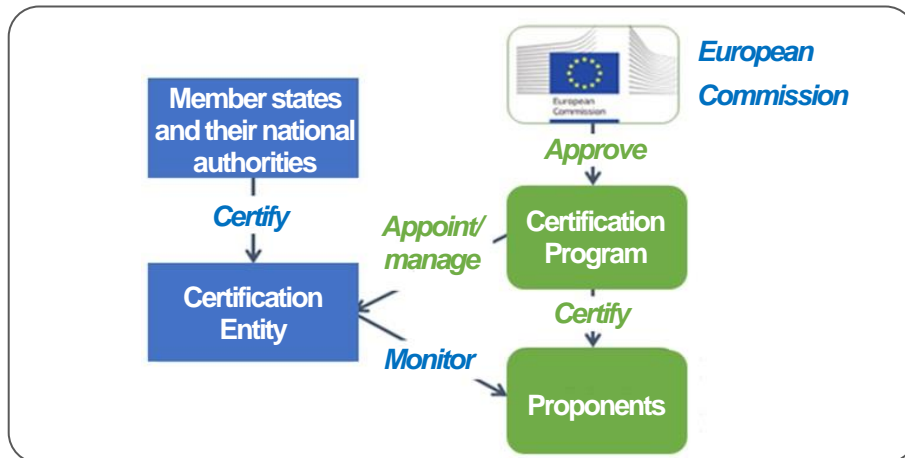
# Significant VCM Policies in Leading Countries



- EU commission approved ‘Carbon Removal Certification Framework’ in Apr 2024
- U.S. government announced ‘VCM Joint Policy Statement and Principles’ in May 2024

## Carbon Removal Certification Framework

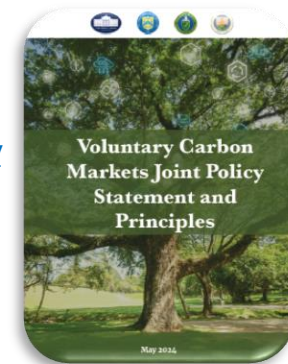
- (Goal) To certify carbon removal and reward on its activities
- **(Allows) 3 specific cases\* to earn the certification**
  - ※ ① Permanent carbon removal incl. BECCS, DACCS
  - ② Carbon farming (Stored in soil and forest) ③ Carbon storage with sustainable items incl. wood, construction materials
- (For what) ESG activities, transactions in carbon market, etc.
- (Expected effects) Encouraging industries to invest & involve in developing relevant technologies toward a net zero



## VCM Joint Policy Statement and Principles

- (Goal) To sustain VCM’s own reliability and its credit quality
- (Proposed by) 6 U.S. ministers incl. Secretary of the Treasury
- **7 Principles on Integrity in Supply, Demand, Market**

- Sup.** ① Credits, to be real and verifiable
- ② When Issuing, Do no net harm
- ③ Buyers, minimizes to utilize if necessary
- Dem.** ④ Credit History, to be publicly disclosed
- ⑤ Offsetting, only with high quality credit
- Mkt.** ⑥ Participants, strive to enhance integrity
- ⑦ Policymakers & Proponents, to make it cost effective

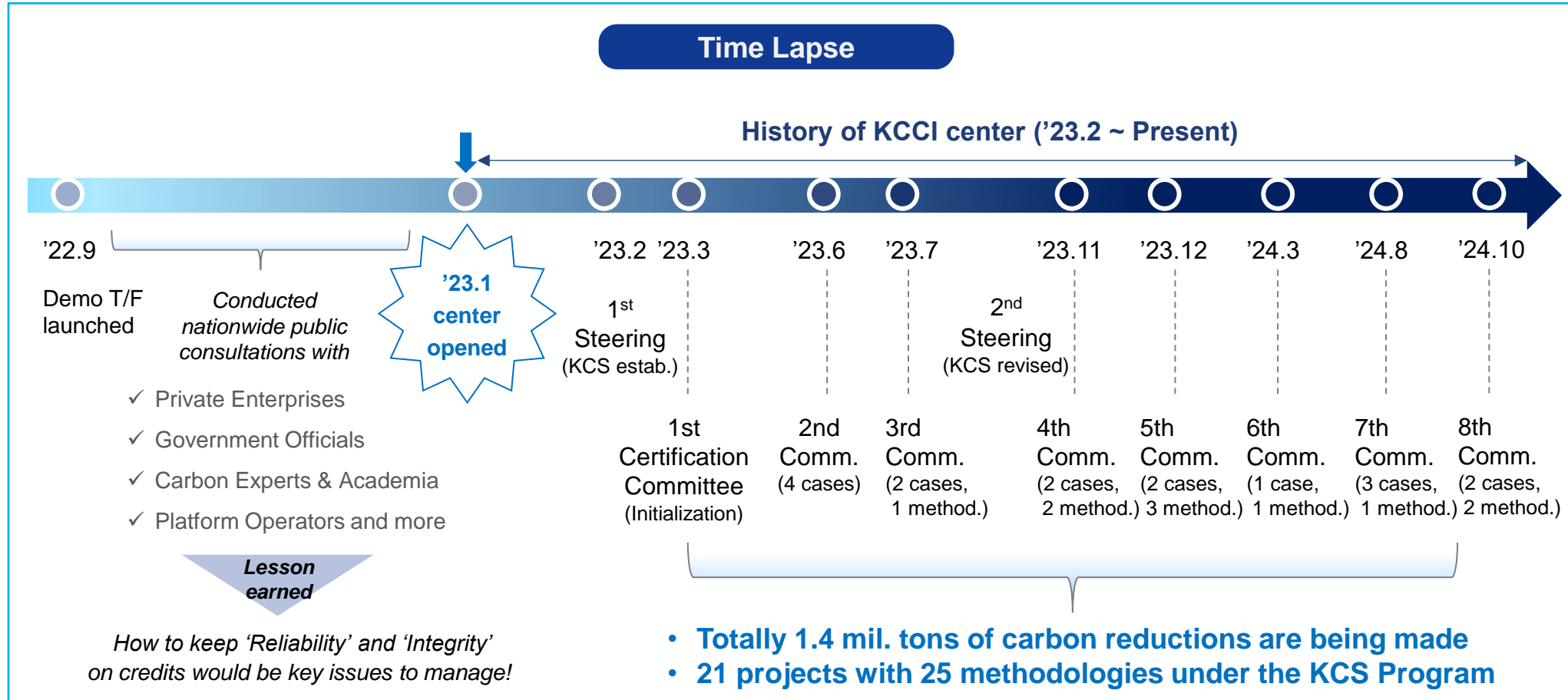


*“The principles are an important step toward building high-integrity VCMs. This is part of efforts to tackle the climate crisis and accelerate a clean energy transition that benefits all”*



# KCCI center towards a VCM in Korea

- KCCI runs carbon crediting program for climate tech-based products and service since 2023
- Established KCCI Carbon Standard (KCS) and VCM certification in operation



# Ref. KCCI center's Achievements



- List of KCS methodologies
  - Totally approx. 2.3 mil. credits are issued by projects based on 25 registered methodologies

Reg. no.	Title of methodology	Credits
KCS-M-24-004	Producing from Hydrogen, Fertilizer, and Metal Compounds Using Recycling Technology of Waste Acids and Waste Metals	
KCS-M-24-003	Capture and utilization of carbon in the atmosphere through Direct Air Carbon Capture and Utilization (DACCU) technology	
KCS-M-24-002	Power consumption reduction by Arm Appliance server products	-
KCS-M-23-026	Methodology for reducing power usage in home appliances through software-based power saving technologies	-
KCS-M-23-024	Methodology for producing and using carbon-reduced concrete	-
KCS-M-23-023	Methodology for reducing electricity consumption by improving the performance of low-power DRAM products	130,292 (2 times)
KCS-M-23-021	A Methodology for Reducing Greenhouse Gas by the Carbon Sequestration of Biochar	-
KCS-M-23-020	A Methodology for the Improvement of Transport Energy Efficiency through the Installation of Non-driving Refrigeration and Refrigeration Devices for Cold Chain Vehicles	-
KCS-M-23-019	A Methodology for Greenhouse Gas Reduction through Eco-friendly De-icers with the Application of Starfish	26,081 (1 time)
KCS-M-23-017	The methodology for the disposable products inhibition project	49,210 (2 times)
KCS-M-23-016	Methodology for using pyrolysis oil and carbon black produced using waste tire pyrolysis technology as raw materials for fuel and naphtha	-
KCS-M-23-015	Methodology of electricity loss reduction due to SiC Wafer development and replacement of Si Wafer-based semiconductor devices	2,031 (1 time)
KCS-M-23-014	Methodology for reducing greenhouse gas in carbon storage and incineration disposal by using bio materials	3,456 (1 time)
KCS-M-23-013	Methodology for improving vehicle fuel use efficiency through the development and sale of mineral-based lube base oil	945,613 (1 time)
KCS-M-23-012	Methodology for replacing single-use containers with reusable containers	-
KCS-M-23-011	Methodology of building cooling and heating energy saving through smart window film	-
KCS-M-23-010	Methodology of chemical products from raw materials produced by applying waste plastic depolymerization technology	-
KCS-M-23-009	Methodology for greenhouse gas reduction generated during the transportation of salt water	-
KCS-M-23-008	Afforestation and reforestation methodology in degraded mangrove habits	-
KCS-M-23-007	Methodology for fossil fuel reduction project according to the installation of dedicated batteries for electric or hybrid vehicles	41,555(1 time)
KCS-M-23-006	Methodology for improving vehicle fuel use efficiency through the development and sale of low-viscosity engine oil	96,022 (2 times)
KCS-M-23-005	Methodology on reduction of fossil fuels and greenhouse gas emissions by manufacturing warm mix asphalt concrete	1,244 (1 time)
KCS-M-23-004	Methodology of Electricity Consumption Reduction Project by Improving Low Power eSSD Performance	162,338 (3 times)
KCS-M-23-002	Energy efficiency measures in thermal applications of non-renewable biomass	-
KCS-M-23-001	Methodology for improved forest management through extension of rotation age from Korean National Forest Certification System of Forestry and Mountain Villages Development Promotion Act	-



# Featured Cases from tech-focused start-ups



- KCCI center encourages start-ups with innovative technology to reduce carbon emissions, which also makes them being invested from marketplace

### 1 LDC

**Carbon black and oil from waste tires**

- Waste Management and Disposal
- Expected Vol. : 22,200 tCO<sub>2</sub>eq/y

**[Baseline]**

burning wastes  
in kilns at cement plant

**[Post-project]**

Waste tires → Pyrolysis tech. → Carbon black (New rubber & tires) and Refined fuel (Alternatives to crude oil)

### 2 STARs

**Eco-friendly de-icer from starfish**

- Construction Industry
- Expected Vol. : 27,175 tCO<sub>2</sub>eq/y

**[Baseline]**

highly corrosive substances  
causes potholes on the road

**[Post-project]**

Born fragment of starfish → extracting materials → Eco-friendly snow de-icer (29 times stronger against the corrosion than calcium chloride)

### 3 4EN

**Carbon sequestration of biochar**

- Carbon Capture & Storage
- Estimated Vol. : 1.4tCO<sub>2</sub>eq/1 ton of Biochar

**[Baseline]**

incinerated and composting  
Agro by-products → Compost

**[Post-project]**

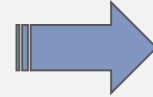
Agro by-products → Gasify with Pyrolysis tech. → Biochar (it helps to store carbon, promotes crop growth, improves soil environment)



# Our Aspirations

- Making a KCCI center as ‘Asian Hub’ with strategic global partners
- Building up ‘Asian Alliance’ to evolve as Asia-wide platform and boost up those VCM

**As the very first full-fledged entity in Korea**  
(officially operated since Jan 2023)



**To be an “Asian Top” certification entity**  
(Vision 2030)

