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Strengthening On-Site Engagement to Advance the Decarbonized Green Civilization Transition in the Industrial Sector, Including Steel and Refining

- On-site engagement at POSCO's hydrogen-based steelmaking facilities in Pohang and Hyundai Steel's electric arc furnace-based production
- Inspection of Ulsan's carbon capture and liquefaction (CCU) projects and bio-feedstock pretreatment plant

The Ministry of Climate, Energy and Environment (MCEE, Minister Kim Sunghwan) announced that, to support the industrial sector's transition to a decarbonized green civilization, it will hold on-site communication sessions with manufacturing facilities in Pohang and Ulsan, Korea's leading industrial cities, on November 20.

As the first stop of the on-site engagement schedule, Ahn Se-chang, Deputy Minister of Climate and Energy Policy Bureau at the MCEE, will visit the Pohang National Industrial Complex, home to leading global steelmakers POSCO and Hyundai Steel.

As of 2024, the steel industry accounts for 15% of Korea's total net greenhouse gas emissions (approximately 651.4 million tons) and 40% of emissions from the industrial sector. As a major high-emission industry, the steel sector's greenhouse gas reductions can determine whether the nation achieves its Nationally Determined Contribution.

In this context, POSCO is working to establish infrastructure for hydrogen-based steelmaking, while Hyundai Steel is attempting to reduce

emissions by producing steel products primarily through electric arc furnaces rather than traditional blast furnaces.

Accordingly, Deputy Minister Ahn Se-chang will discuss with industry stakeholders ways to establish an eco-friendly steel production system in Korea. He will hear about POSCO's and Hyundai Steel's progress toward carbon neutrality and gather recommendations, including requests for government support to create demand for low-carbon steel products.

Next, Deputy Minister Ahn will inspect Approtium's hydrogen production and carbon dioxide capture processes in Ulsan, a leading company in the hydrogen economy. Approtium supplies hydrogen to nearby refining and petrochemical complexes through a hydrogen pipeline network extending approximately 70 kilometers across the Ulsan area, supporting fuel switching in their operations.

In addition, the company is actively pursuing Carbon Capture & Utilization (CCU) projects, including capturing and liquefying carbon dioxide generated during hydrogen production and supplying it to semiconductor plants.

Deputy Minister Ahn plans to exchange views with Approtium on creating a decarbonized industrial ecosystem based on carbon capture and liquefaction, as well as on stabilizing hydrogen supply to accelerate carbon reductions in Korea's high-emission industries. He will then inspect the bio-feedstock pretreatment unit (PTU)* at Ulsan New Port, which JC Chemical completed last month.

* Bio-feedstock pretreatment unit (PTU): A process that purifies low-grade bio-feedstocks, such as used cooking oil, palm by-products, and food-waste oils, into high-quality raw materials for Sustainable Aviation Fuel (SAF).

This process is an essential preparatory step for the refining industry to utilize bio-feedstocks as raw materials for sustainable aviation fuel, thereby reducing carbon emissions. JC Chemical is a company that has established domestic and international bio-feedstock supply chains to secure stable sourcing and high-quality processing, and also directly produces eco-friendly petroleum

alternatives such as biodiesel. Deputy Minister Ahn plans to request the company's active contribution to strengthening the full-cycle supply chain, ranging from securing bio-feedstocks to fuel production, for the decarbonization of the refining industry.

Deputy Minister Ahn Se-chang stated, "The government will actively support the industry's transition of production processes to ensure that major emitting industries can maintain competitiveness while reducing carbon emissions." He added, "We will strengthen policy support for technological innovation so that key low-carbon technologies, such as hydrogen-based steelmaking, biofuels, and carbon capture and liquefaction, can take root in industrial sites as quickly as possible."