

PRESS RELEASE

Steel sector to play a key role in 2050 carbon neutrality pathway

At COP26, South Korea was among more than 40 countries that signed onto the [Glasgow Breakthrough Agenda](#), a commitment to transition to clean technologies, including the steel sector. Industry and policy experts explored how this key sector can reach net-zero emissions by 2050 both in Korea and worldwide.

November 26, 2021 – Experts from South Korea, Sweden and Australia gathered to discuss how governments and industries can align to expand the growth of green steel at the “Steel Industry Transition in the Times of Climate Change” seminar on Thursday held by Solutions for Our Climate (SFOC).

National Assembly Member Sunghwan Kim, in his opening speech, noted that replacing coal with green hydrogen in steelmaking will be important to keep Korea’s steel industry competitive without harming the environment. Kim added: “The National Assembly will be actively involved in various R&D and speeding up efforts to reduce CO2 emissions from steel.”

In his congratulatory remarks, **Daniel Wolvén, Ambassador of Sweden to South Korea** highlighted the critical role that businesses play in green transformation, referring to the Swedish [HYBRIT initiative](#), aiming to create a fossil-free steel value chain with financing from the Swedish Energy Agency, and urged for Korean companies to accelerate their green transition.

Benoit Lory, Minister Counsellor at the Delegation of the EU to South Korea, emphasized the need for rapid decarbonization of steel to keep the industry competitive: “This is a race against time. 2050 is just one investment cycle away for a sector like steel, which has long-lasting capital assets. Therefore, the next five years will be crucial for seeing which part of the world is the fastest to develop clean breakthrough technologies and processes to make steel.”

South Korea’s net-zero steel pathway

Joojin Kim, managing director at SFOC, shared findings from a new [SFOC report on Korean steel sector and climate neutrality](#), which show that Korea has a relatively high carbon intensity in steel production due to its high portion of Blast Furnace-Basic Oxygen Furnaces (BF-BOF) compared to electric arc furnaces (EAF), similar to China and Japan. Kim noted that Korea’s major steel producers POSCO and Hyundai Steel both utilize BF-BOF, which contributes to their high carbon intensity that accounts for about 92% of Korea’s steel sector emissions.

Kim also highlighted the role of Korea’s government in supporting the steel industry’s green transition: “We really need to change our energy market, because electricity plays a very important role in the steelmaking process, and it’s very important that we get renewable energy

to power these steel plants.” Kim added that the government also needs to provide support to develop commercially viable carbon-free steelmaking technologies.

Referring to the [KAIST-SFOC joint study](#), **Dr. Jiyong Eom from KAIST Graduate School of Green Growth** explained that the steel industry needs to expand hydrogen direct reduced iron (DRI) and DRI with carbon capture and storage (CCS) technologies, and rapidly phase out unabated blast furnaces. Eom estimated that by 2040 or 2045, the cost of coal-based steel production may exceed hydrogen-based production, and by 2050, the high price of carbon will significantly increase the cost of steel production from blast furnaces.

Industry and policy experts addressed the need for government to ramp up its support for green steelmaking. **Andres Hektor, the Science and Innovation Counsellor from the Embassy of Sweden in South Korea**, underlined that the importance of governments to create quick and effective permit procedures to provide access to clean electricity and to set up critical infrastructure, such as hydrogen production and storage, to financially support the steel industry’s innovation, and to implement an emissions trading system to improve the competitiveness of green steel producers.

Kyungsik Kim, director at the Steel Scrap Research Center, called for stronger financial and policy incentives for hydrogen-based steel, and increased use of scrap. **Heungwon Seo, president of the Greenhouse Gas Inventory and Research Center**, suggested that companies’ GHG emissions should be closely monitored, and implement economic disincentives – such as a carbon tax – to promote clean transition. **Kyunghoon Lee, director of the Metals and Ceramics Division in the Ministry of Trade, Industry and Energy**, stressed the need to limit direct reduced iron and expand hydrogen reduction and for the government to focus on sustaining the industry’s job creation and economic contributions.

Global steel decarbonization ambition and cooperation

Chris Bataille, a researcher with Paris-based think-tank IDDRI explained that catching the upcoming blast furnace renewal cycle is critical to decarbonize the steel industry: “By far, the majority of steel production is in Asia, specifically in Japan, South Korea and China. Much of this capacity was built 1995 to 2015, and on a 25-year furnace relining schedule, it is up for renewal 2025 to 2035. Quite literally, we have got about five to seven years, maximum ten years, to commercialize new technologies.”

Sam Lowe, the project director at the Office of the Special Advisory on Low Emission Technology at the Australian Government, emphasized the role of international partnership to exchange technical expertise and to identify comparative advantage as a way to reduce the cost of decarbonization, referring to Australia and Korea’s Zero Emissions Technology Partnership announced during COP26 as an example.

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Solutions for Our Climate (SFOC) is a South Korea-based group that advocates for stronger climate change policies and transition towards a fossil-free society. SFOC is led by legal, economic, financial, and environmental experts with experience in energy and climate policy and works closely with policymakers.

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