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US-Korea Cooperation on Climate Change

By Troy Stangarone

Governments around the world are accelerating steps to reduce greenhouse gas emissions in response to climate change. As two of the world's most significant emitters of greenhouse gases, the United States and South Korea have taken steps domestically to reduce their emissions, while making climate change an important part of their efforts to expand the US-Korea alliance beyond traditional security and economic issues. However, for US-Korea cooperation on climate change to be successful, Washington and Seoul also need to expand cooperation with countries in the Indo-Pacific and Asia-Pacific.

Troy Stangarone, Senior Director and Fellow, Korea Economic Institute of America, explains that "the United States and South Korea have taken steps domestically to reduce their emissions, while making climate change an important part of their efforts to expand the US-Korea alliance beyond traditional security and economic issues."

Despite China passing it as the world's largest emitter of carbon dioxide in 2006 and declining domestic emissions, the United States remains the world's 2nd largest emitter of carbon dioxide. To achieve the emission cuts needed to prevent global temperatures from rising more than 1.5 degrees Celsius, the Biden administration has set a goal of reducing US greenhouse gas emissions by 50-52 percent below 2005 levels by 2030. It has also pledged that the United States will achieve net-zero emissions by 2050.

Similar to the United States, South Korea has committed to reducing its greenhouse gas emissions. It is the world's 13th largest emitter of carbon dioxide and committed at COP26 to cut its emissions by 40 percent from 2018 levels by 2030. Seoul has also committed to achieve carbon neutrality by 2050, a pledge that South Korea enshrined in legislation when it became the 14th country to pass a carbon neutrality law last year.

Beyond their efforts to reduce emissions domestically, the United States and South Korea have sought to align their policies on climate change and to collaborate on deployment of clean energy technologies. At COP26, the United States and South Korea joined multilateral initiatives designed to further reduce greenhouse gas emissions and support efforts to remove carbon dioxide from the atmosphere. The two allies signed onto the Global Methane Pledge to reduce global methane emissions by 30 percent from 2020 levels by 2030. They also joined the Glasgow Leaders' Declaration on Forests and Land Use and reverse forest degradation by 2030.

In bilateral relations, Washington and Seoul agreed to align their international finance efforts to achieve net-zero emissions globally by 2050 and pledged to end support for the development of new unabated coal power plants at the 2021 US-Korea summit. They also agreed to collaborate on decarbonizing each other's power systems, deploying clean vehicles, and clean energy research and development. Similarly, the existing US-Korea Energy Policy Dialogue was elevated to the ministerial level and its scope was expanded to include clean energy deployment. Collaboration on climate change is developing most rapidly in the area of electric vehicle (EV) batteries and their supply chains – two critical areas identified in the White House's 100 day supply chain review.

Since 2018, South Korean firms have announced $13 billion in investments in the manufacturing of electric

vehicle batteries in the United States, accounting for 12 of the 14 high capacity battery plants set to be constructed by 2025. These include investments in new production facilities in states such as Michigan, Arizona, Tennessee, Kentucky, and Georgia to support the production of EVs by the US Big Three, as well as foreign producers in the United States. Hyundai Motors is also set to invest $5.5 billion in the United States to manufacture EVs and EV batteries.

While South Korean firms have become critical to developing a domestic supply chain for EV batteries, the United States and South Korea are also cooperating on securing the critical mineral supply chain. This effort is important as critical minerals, such as lithium, cobalt, and nickel, are essential inputs for the production of EV batteries but China is the dominant source for either mining or processing many of these key minerals. According to a report by the Korea International Trade Association, South Korean EV battery makers are dependent on China for 92.8 percent or more of their imports of tungsten oxide, manganese hydroxide, and calcium hydroxide. South Korea also relies on China for 63.9 percent of the cobalt oxide used in the production of battery cathodes. Dependencies that even South Korean facilities in the United States are likely to face due to China's control over the mining and production of many key minerals. To address these concerns, the United States and South Korea have joined with nine other partners in the Minerals Security Partnership to build "robust, responsible critical mineral supply chains to support economic prosperity and climate objectives."

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While the United States and South Korea are cooperating bilaterally and working to align their climate policies on the multilateral level, what has largely been missing in the partnership on climate change is deeper cooperation within the Indo-Pacific and Asia-Pacific. It is here where the cooperation between the development banks of both countries, along with other like-minded partners, could advance climate change objectives by supporting the deployment of clean energy infrastructure and smart grids to reduce energy consumption.

In addition, Washington and Seoul should look to work with other countries to pursue the commercialization of hydrogen as a new clean fuel source. While the United States, South Korea, and Japan are all working on related technologies, they lack the large-scale ability of countries such as Australia and Chile to produce green hydrogen. Bringing together countries working on technological developments with those with the potential for the production of significant amounts of green hydrogen would help to expedite the process of commercializing hydrogen as a clean energy source.

While cooperation on climate change is relatively new to the US-Korea alliance, it has the potential to be a significant part of the relationship going forward. South Korea is well positioned to play a key role in the electrification of the US automotive industry, while both countries share an interest in developing new clean energy technologies and collaborating to secure energy supply chains. However, to realize its full potential, the alliance needs to cooperate more closely in the Indo-Pacific and Asia-Pacific on deploying clean energy and working with like-minded partners to develop new technologies.

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