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Green Public Procurement of Steel in South Korea



The scale of Public Steel Procurement and the Impact of Green Public Procurement on GHG Emissions in South Korea

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The Scale of Public Procurement of Steel

South Korea spends 13.5% of its GDP each year on public procurement. This purchasing power gives governments leverage in driving markets toward the development of low-carbon goods and services. Green public procurement (GPP) is a policy instrument where public entities seek to procure goods with a reduced environmental impact throughout their lifecycle relative to similar goods that provide the same function. GPP adoption is increasing around the world as national governments, sub-national governments, and multilateral entities develop policies to reduce their carbon footprints and create new low-carbon markets. South Korea aims to achieve carbon neutrality by 2050, with an intermediate short-term target of 24% reduction in GHG emissions compared to 2017 emission levels. The GPP, as a policy tool, can help South Korea to achieve its carbon neutrality target and reduce air pollution while maintaining its growth and competitiveness.

South Korea produced 71.4 million tonnes (Mt) of steel in 2019, and total steel consumption in South Korea was around 50.3 Mt that year. From that, around 5.5 Mt was used in Government-funded projects in South Korea. Figure 1 shows the estimated total steel procurement by both public and private sectors in South Korea in 2019.

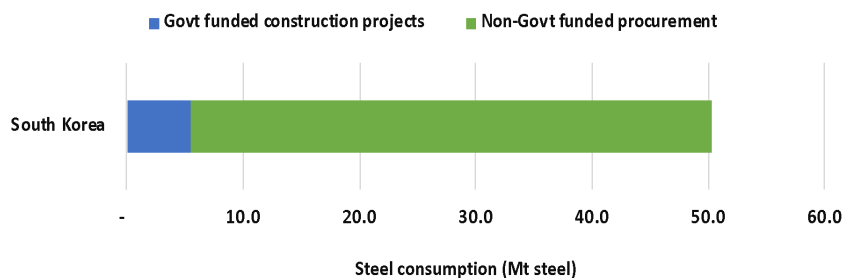


Figure 1. Public and private procurement of steel in South Korea in 2019

Using the weighted average CO₂ intensity of steel produced in South Korea (1,735 kg CO₂/t steel) (both primary steel and electric arc furnace (EAF) steelmaking), we can estimate the annual CO₂ emissions associated with steel used in South Korea in 2019 (Figure 2). Approximately 11% of the annual CO₂ emissions linked with steel consumption in South Korea are associated with Government-funded projects, which were around 9.6 Mt CO₂ in 2019. Therefore, government procurement may not be a strong driver of demand for low-carbon steel in South Korea.

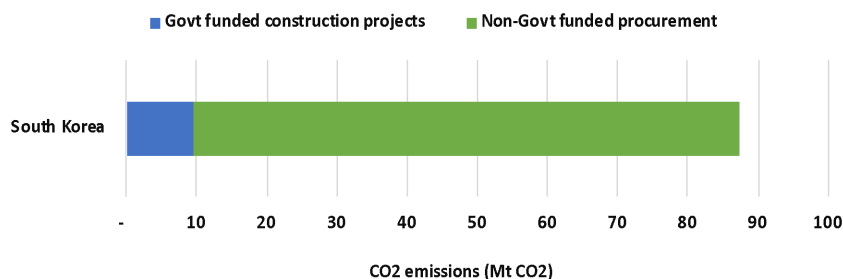


Figure 2. Annual CO₂ emissions associated with steel used in South Korea in 2019

Impact of GPP of Steel on GHG Emissions

To estimate the potential impact of GPP on CO₂ emission associated with steel consumption in South Korea, we developed several scenarios with various GPP targets for the CO₂ intensity of steel set by a GPP policy (Table 1). Since about 33% of steel consumption in South Korea is imported steel, we used the average CO₂ emissions intensity of South Korea's domestic steel industry as the baseline for the target setting for steel GPP in South Korea.

Table1. GPP target scenarios for the steel industry in South Korea

Buy Clean Target	% reduction in steel CO ₂ intensity from baseline	Steel CO ₂ intensity (kgCO ₂ /t crude steel)
Baseline	-	1,735
Low	15%	1,475
Medium	30%	1,215
High	50%	868
Transformative	75%	434

Using the annual CO₂ emissions associated with steel used in South Korea as presented on the previous page and the targets set in Table 1, we can estimate the annual CO₂ emissions reduction potential resulting from GPP for steel in South Korea in 2019. Figure 3 below shows that under the Low scenario for the GPP target for steel, an annual emissions reduction of 1.4 Mt CO₂ can be achieved directly from the public procurement of steel in South Korea. This direct annual CO₂ emissions reduction potential would increase to 5 Mt CO₂ and 7.5 Mt CO₂ under High and Transformative scenarios, respectively. The potential CO₂ emissions reduction impact of GPP for steel in South Korea could increase by almost nine-fold if we consider the potential indirect impact from the steel sold to non-public funded projects if we assume the changes steel plants make for CO₂ emissions reduction applies to all steel they produced for the market.

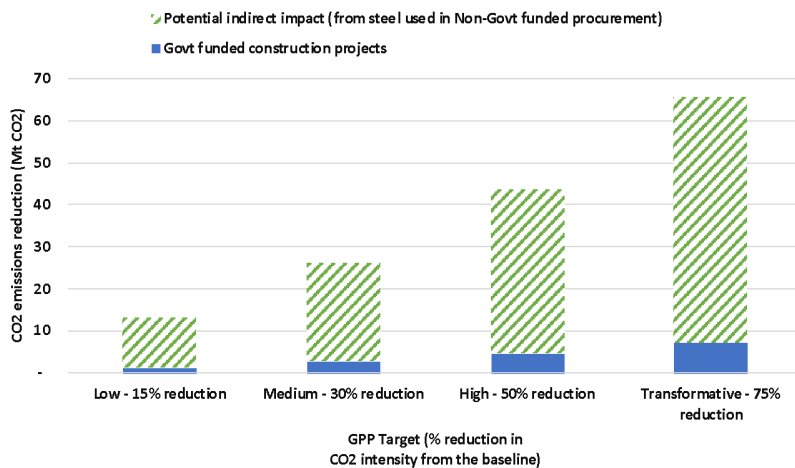


Figure 3. Annual CO₂ emissions reduction potential resulted from GPP for steel in South Korea