

South Korea's Green New Deal

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Originally proposed as a post-COVID-19 stimulus plan, the Green New Deal is a sustainability-centered strategy for building a low-carbon and climate-neutral economy. The Green New Deal sets out eight targets to be accomplished under three strategic areas: green urban development, low-carbon decentralized energy, and innovative green industry. The Deal also takes measures to protect the people and sectors at a higher risk of being left behind in the process of the economic transition. It is an upgraded version of the "Green Growth" national policy, with more emphasis on sustainability in addition to the growth aspect.

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1. Introduction

The COVID-19 pandemic has caused an unprecedented crisis around the globe. Controlling the spread of the disease and recovering from the economic downturn is a top priority for governments. Large-scale crises force us to significantly rethink our social systems and to build them anew ^[1]. As the world currently experiences the effects of a pandemic, the global community is recognizing the urgent need for climate actions more than ever. The COVID-19 challenge provides an opportunity for re-evaluating impacts and, at the same time, for refreshing public awareness about the grave threats of environmental and health problems that require comprehensive public policy responses. In other words, the pandemic may expedite the transition towards a sustainable future.

Indeed, many of the world's major economies, including the European Union, have designed their COVID-19 recovery plans with a strong focus on a transition to a "decarbonized" economy. Most recently, Chinese President Xi Jinping, at the 75th session of the United Nations General Assembly, stated that China aims to reach its CO₂ emission peak before 2030 and to achieve carbon neutrality before 2060. He also called for a "green recovery of the world economy in the post-COVID era" and efforts to achieve sustainable development in all countries ^[2]. Although not yet materialized as a concrete policy, China's intention to join other nations in progressing towards carbon neutrality looks encouraging ^[3].

South Korea's Green New Deal policy is another national strategy for the post-COVID era. First proposed by the ruling Democratic party ahead of the April 15th parliamentary election in 2020, it is a massive government-led program to offset the impact of the COVID-19 pandemic and to lay the foundations for future economic growth. The Green New Deal is one of the two components of the "Korean New Deal" (Digital New Deal and Green New Deal)—with an initial budget of 160 trillion KRW (142.62 billion USD) over the next five years. The Korean New Deal established a short-term goal to create 340,000 jobs within two years to induce production of 49 trillion KRW and to reduce social costs by 40 trillion KRW.

South Korea currently leaves large footprints in the global climate change landscape. It is the seventh largest national CO₂ emitter and one of the Organization for Economic Cooperation and Development (OECD) countries with the fastest-growing greenhouse gas (GHG) emissions ^[4]. Its emissions steadily increased at 2% a year from 2000 to 2017, and the country's industrial structure remains carbon-dependent. South Korea's Nationally Determined Contribution (NDC) proposes an economy-wide target to reduce GHG emissions by 37% below business-as-usual (BAU) emissions of 857 MtCO₂e/year in 2030 ^[5]. In absolute terms, this is a target of 539 MtCO₂e/year excluding land use, land-use change, and forestry (LULUCF) (that is, 81% above 1990 emission levels and 24% below 2017 levels). Based on the recently adopted revised 2030 GHG roadmap, South Korea intends to achieve a 32.5% emissions reduction below BAU domestically. The remaining 4.5% can be achieved through international market mechanisms ^[6]. One of the main cross-sectoral policy instruments implemented to date is the Korea Emission Trading Scheme (ETS) launched in 2015. It is East Asia's first nationwide mandatory ETS and the second-largest carbon market after the EU ETS ^[7]. It covers 68% of national GHG emissions and nearly 600 companies from 23 sub-sectors of the steel, cement, petrochemical, refinery, power, construction, waste, and aviation sectors.

South Korea imports 95% of its energy needs from overseas ^[8]. It gets around 40% of its electricity from coal and has been a major financier of coal plants abroad. The third Energy Master Plan up to 2040, adopted in June 2019, together with the 2017 power sector plan for the period up to 2030, aims to increase the renewable electricity share to 20% by 2030 and 30% to 35% by 2040, which is up from 3% in 2017. The Renewable Portfolio Standard (RPS), which replaced a previous feed-in-tariff (FIT) scheme and has been in place since 2012, is the main policy instrument to promote renewable energy. The RPS scheme requires major electric utilities to increase their renewable and "new energy" share in the electricity mix to 10% by 2023 ^[9].

Against this backdrop, South Korea's Green New Deal aims to achieve net-zero emissions and to accelerate the transition towards a low-carbon and green economy. It is the first commitment of its kind in East Asia. To accomplish the Green New Deal goals, the government selected a total of eight tasks divided into three areas: green industry innovation, green infrastructure construction, and low-carbon energy implementation. Through these tasks, it plans to reduce greenhouse gases by 16.2 million tons and raise energy efficiency by 30% in the environment ^[10].

2. Korean Green New Deal

2.1. Major Areas and Tasks

South Korea's Green New Deal plan emerged as a direct response to the COVID-19 pandemic, unlike the European Green Deal and U.S. Green New Deal, which preceded it. The main difference of the Green New Deal from previous policy measures is that it not only responds to the climate crisis, but tries to eradicate social inequality and poverty. This is generally in line with the EU's and the U.S.'s approaches. This is not the result of the leftist turn in politics. In fact, the Green New Deal was inserted into the Korean New Deal at the last minute, reflecting an intent to join the broader global trends in green new deal policy ^[11].

The Korean Green New Deal identifies three main areas and eight specific implementation targets (see Table 1). The government projects that a total of 73.4 trillion KRW (42.7 trillion KRW from the treasury) will be invested and 659,000 jobs will be created. Investment funds to support Green New Deal projects are expected from public and private sources.

Table 1. Specific tasks and creation of jobs in the Korean Green New Deal.

Area	Tasks	Budget (trillion KRW)	Budget (trillion KRW)	Jobs
		(by 2022))	(by 2025)	(thousand)
Total		19.6	42.7	659
Green Transition of Infrastructures	Subtotal	6.1	12.1	387
	Turning public facilities into zero-energy buildings	2.6	6.2	243
	Restoring the terrestrial, marine, and urban ecosystems	1.2	2.5	105
	Building a management system for clean and safe water	2.3	3.4	39
Low-Carbon and Decentralized Energy Supply	Subtotal	10.3	24.3	209
	Building a smart grid for more efficient energy management	1.1	2.0	20
	Promoting renewable energy use and supporting a fair transition	3.6	9.2	38

Innovation in the Green Industry	Expanding the supply of electric and hydrogen vehicles	5.6	13.1	151
	Subtotal	3.2	6.3	63
	Promoting prospective businesses to lead the green industry, and establishing low-carbon and green industrial complexes	2.0	3.6	47
	Laying the foundation for green innovation via the research and development (R&D) and financial sectors	1.2	2.7	16

The first area is the green transition of infrastructures. Investment of 30.1 trillion KRW (including 12.1 trillion KRW from the treasury) will be made by 2025 to create 387,000 jobs. Implementation of renewable energy equipment and high-performance insulation to make public buildings green and energy-efficient is planned as one of the largest projects that will create the most jobs. By conducting a comprehensive diagnosis on the climate and environmental challenges of a city, the government plans to restore the terrestrial, marine, and urban ecosystems. Next, the entire water supply system will be made smart through the use of information and communication technologies (ICTs) and artificial intelligence (AI).

The second area is the low-carbon and decentralized energy supply. Investment of 35.8 trillion KRW (including 24.3 trillion KRW from the treasury) will be made by 2025 to create 209,000 jobs. Specific tasks include the establishment of a smart grid for more efficient energy management. Promoting renewable energy use and supporting a fair transition is another task. To reduce greenhouse gases and fine dust and to be competitive in the future global car market, the supply of electric and hydrogen vehicles and acceleration of ecofriendly conversion of old diesel vehicles and ships will be made.

The third area is the innovation in the green industry. Investment of 7.6 trillion KRW (including 6.3 trillion KRW from the treasury) will be made by 2025 to create 63,000 jobs. Incentivizing prospective businesses to lead the green industry and establishing low-carbon and green industrial complexes are main tasks. In order to lay the foundation for green innovation, a loan of 1.9 trillion KRW will be introduced for the green sector, including investment to prevent the environmental pollution of businesses, and a joint fund made up by the public and the private sectors will be set up for 215 billion KRW to foster green businesses.

2.2. Specific Projects

The government has identified 10 specific projects for the Korean New Deal. Among them, five projects relate to the Green New Deal.

2.2.1. Green Remodeling

In order to induce energy efficiency improvement in private buildings, public buildings take the lead in reinforcing energy performance by installing solar power and replacing ecofriendly insulation materials. Over a period of 15 years, the government will work on installing solar power for public rental housing (225,000 units), daycare centers, health centers, and medical institutions, and on replacing high-performance insulation materials. Using high-efficiency energy equipment and ecofriendly materials, national and public daycare centers (440) and national sports centers (51) will be newly built. Energy reduction facilities, such as solar power systems and LED lighting, will be installed (1148 locations) for cultural facilities, such as museums and libraries, and energy efficiency will be promoted in government buildings.

2.2.2. Green Energy

The Green New Deal contemplates expanding large-scale research and development (R&D), demonstration projects, and facility supply to foster the ecosystem of new and renewable energy industries, such as solar power and wind power (land and sea). The government plans to increase renewable power generation from the current 12.7 GW to 42.7 GW by 2025. In the case of wind power, a feasibility study will be conducted in up to 13 areas and phased construction of demonstration

complexes will be initiated in order to find locations for large-scale offshore wind farms. Regarding solar power, a resident participatory benefit-sharing project will be introduced and loan support for rural and industrial complexes will be expanded. The government also plans to support 200,000 households with the cost of installing new and renewable facilities for private use, such as in houses and shopping malls. The government also intends to develop source technology for the entire cycle from production to utilization of hydrogen and to build "hydrogen cities". Three hydrogen cities will be created by 2022, and three additional cities will be created by 2025.

2.2.3. Ecofriendly Mobility of the Future

The Green New Deal plans to increase the number of electric cars from 90,100 (as of 2020) to 1.13 million electric vehicles (cumulative) and to expand charging infrastructure (15,000 quick chargers and 30,000 slow chargers) by 2025. It will also supply 200,000 hydrogen vehicles (cumulative), such as passenger cars, buses, and cargo, install 450 charging infrastructure units (cumulative), and establish a hydrogen distribution base, such as a hydrogen production base. The Green New Deal will support the conversion of old diesel vehicles into liquefied petroleum gas (LPG) and electric vehicles as well as the early scrapping of vehicles, and will support the conversion of civilian ships and government ships (34 ships) into liquefied natural gas (LNG)- or hybrid-fueled ships as well as the attachment of an emission reduction device (Diesel Particulate Filter) to 80 other government ships.

2.2.4. Green and Smart Schools

The installation of energy-saving facilities supports environmentally friendly classrooms, while the use of technology-based educational materials provides a learning environment that incorporates a blend of both online and offline methods. The energy efficiency of old school buildings, including at least 2890 elementary, middle, and high school buildings, will be enhanced through the installation of solar panels and ecofriendly insulation. The plan to provide full Wi-Fi coverage in 380,000 classrooms by 2024 will be completed ahead of schedule, by 2022.

2.2.5. Smart and Green Industrial Complexes

The Green New Deal will convert industrial complexes into smart and ecofriendly manufacturing spaces with digital-based high productivity (smart), high energy efficiency, and low pollution (green). It plans to establish a simulation center for manufacturing process testing (three locations) and a remote monitoring system to detect hazardous chemicals based on artificial intelligence (AI) and drones. Smart ecological factories (100 locations) and pollutant reduction facilities that minimize pollutants will be built; for example, by building a smart energy platform that visualizes energy generation and consumption, monitors and controls in realtime through a control center (10 locations), and reuses waste heat and other wastes. Clean factories (1750 locations) reducing pollution based on individualized solutions for businesses will be established. It supports the interconnection of waste recycling between companies (81 industrial complexes), the recycling wastes in industrial complexes for reuse as raw materials or energy by other companies, and the installation of fine dust reduction facilities in small-scale workplaces (9000).

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