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Renewables in the post-COVID-19 recovery package of South Korea

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Content

THIS ANALYSIS IS PART OF A COMPILATION OF RECOVERY PACKAGE ANALYSES AND AIMS AT EXPLORING THE ROLE OF RENEWABLES IN POST-COVID19 RECOVERY SCHEMES. AS A SERIES, THIS RESEARCH IS CONDUCTED CONTINUOUSLY AND WILL BE ADDED TO, ONCE INFORMATION IS AVAILABLE.

Introduction

South Korea is one of the few nations that have shown a rapid deployment of measures to dampen the negative impact of the pandemic and to recover its economy swiftly. Nevertheless, COVID-19 left its marks, as the economy of the East Asian country slowed down. In May 2020, the exports dropped by 24% particularly due to the sharp fall in demand in the automobile, the electronics, and the steel sector.[1] Leading to a decline in employment by about 392.000 in April 2020, compared to the previous year.[2]

In July, South Korea adopted a holistic approach to deal with the COVID-19 pandemic which found several countries replicating similar approaches. The government coined this strategy the "Korean New Deal" which aims at shifting to a low-carbon economy post-COVID through a KRW 160 trillion (USD 132.7 billion) stimulus package.

South Korea's response to the crisis

"With the post-coronavirus era pressing upon us, we may no longer delay these historic changes such as climate change responsive actions and paradigm shift into an inclusive society," emphasised president Moon Jae when launching the country's recovery package.

The Korean New Deal focuses on building a 'data dam' to establish eco-friendly, digital-driven infrastructure and prepare the ground for sustainable growth after COVID.[3] The deal accounts for about USD 133 billion which will be injected into the economy until 2025 and is financed through:

- US$96.3 billion from Treasury
- US$21.2 billion from local governments
- US$17.3 billion from the private sector.[4]

Roughly half of this stimulus (around USD 67 billion) is allotted for a "green new deal". Through this immense financial stimulus, the government seeks to create 1.9 million additional jobs.[5] In addition to creating jobs, the package focuses on building new infrastructure and proposes to convert old buildings (government buildings, institutions, and schools) to smart and low-carbon footprint

[1] Sung Young Kim, Elizabeth Thurbon, Hao Tan, John Mathews, The Conversation, "South Korea's Green New Deal shows the world what a smart economic recovery looks like" South Korea's Green New Deal shows the world what a smart economic recovery looks like (theconversation.com) published on 9 Sept 2020, accessed on 5 Dec 2020.
[2] Ibid.
[3] Bae Hyunjung, The Korean Herald, "Korea's W160tr 'New Deal' project aims to create 1.9m jobs by 2025" Korea's W160tr 'New Deal' project aims to create 1.9m jobs by 2025 (koreaherald.com) published on 14 July 2020, accessed on 6 Dec 2020.
[4] Sung Young Kim, Elizabeth Thurbon, Hao Tan, John Mathews, The Conversation, "South Korea's Green New Deal shows the world what a smart economic recovery looks like" South Korea's Green New Deal shows the world what a smart economic recovery looks like (theconversation.com) published on 9 Sept 2020, accessed on 5 Dec 2020.
[5] Ibid.

buildings. In its press release, the government acknowledges the fact that there will be jobs that no longer will be needed and certainly will create space for other jobs relevant to the time. A just transition concept for these jobs seems to be lacking so far. The deal, however, lays out a strategy for green jobs for youth.

The role of renewables

At the heart of the Korean New Deal is the twin, green, and digital transformation, building a robust, progressive, green eco-system that holds a holistic vision for the future[6]. A total of 4.5 trillion Won (USD 4 billion) will be invested in green energy by 2020. This stimulus aims to create 16.000 additional jobs while transitioning from fossil fuel consumption to renewable energy generation.[7]

1. Green remodelling of schools, in order to improve energy efficiency and powered by solar energy. Further, schools will be digitally remodelled to enable 100% wi-fi access and create a digital educational platform and provide custom-made educational content.
2. Remodelling of old government buildings to improve energy efficiency and increase the share of renewable energy in their consumption patterns.
3. Smart and green industrial complexes will be built which should include 100 eco-factories that seek to reduce pollution and strengthen recycling practices, as well as 1.750 clean factories.
4. The government plans to increase the share of renewable energy generation to 42.7 GW by 2025 from its current capacity of 12.7 GW, which includes wind and solar power. Further, it will develop at least 13 more sites for wind power generation.
5. It will promote profit-sharing models for residential renewable installations wherever possible and provide financial support for residential solar power installations.
6. Implementation of pilot projects for community energy (e.g. in the form of a cooperative) to strengthen local development.
7. Strengthening technology development for building-integrated PV (BIPV) installations and offshore wind.

In line with the Korean New Deal and the role of renewables in it, the government published its "Ninth Basic Plan for Electricity Supply and Demand for the years 2020-2034" on 15th December 2020.[8] The plan lays out South Korea's plan to increase the share of renewable energy in its electricity mix to 41.9% by 2034 in the country's power generation capacities. This would mean an approximately threefold increase of renewable capacities from currently 20 GW to almost 78 GW by 2034. The rest of the mix will be covered through LNG (31.8%), coal (15.6%), and nuclear power (10.4%). To reduce

[6] Policy Coordination Bureau - General Policy Coordination Division, "Government Announces Overview of Korean New Deal" published on 14 July 2020, accessed on 8 Dec 2020.
[7] Republic of Korea, Economic Bulletin, "Government announces Overview of Korean New Deal", https://eiec.kdi.re.kr/publish/ebView.do?cidx=1041&ccode=000100000100002 published Jul 2020, accessed 11 Jan 2021.
[8] Kim Byung-wook, The Korean Herald, "Korea to quadruple renewable power by 2034, downsize nuclear, coal" Korea to quadruple renewable power by 2034, downsize nuclear, coal (koreaherald.com) published on 15 Dec 2020, accessed 11 Jan 2021.

its coal capacities, the government plans to shut down 30 older coal-fired power plants by 2034 and convert an additional 24 facilities into LNG plants.

In addition to promoting renewables, the Korean New Deal also promotes electric transport via:

1. Supply of 1.130.000 electric vehicles as well as supporting infrastructure.
2. A total of 200.000 hydrogen fuel vehicles to be provided with a stable supply of hydrogen fuel.
3. Introduction of a scrapping premium for old diesel vehicles, including construction and farming machines.
4. Public vehicles are to be replaced with LNG vessels and equipped with diesel particulate filters (DPRF).

The expected outcomes from the Korean New Deal

The Korean New Deal has a very specific pointer when it comes to measuring outcomes:

1. As many as 225.000 public rental houses will be remodelled to be energy-efficient and eco-friendly;
2. 25 cities will be transformed to be smart and eco-friendly;
3. 723 hectares of urban forests will be set up to reduce fine dust;
4. 1.130.000 electric and 200.000 hydrogen cars with required infrastructure will be supplied;
5. 1.750 factories will be transformed into clean factories;
6. Fine dust reduction systems at 13.182 small manufacturers will be installed.

To ensure the success of the Korean New Deal, the government is set to meet monthly to monitor implementation progress. Further, a regular ministerial meeting will be hosted. The first of which was held on 23rd July and dealt with acquiring 30 trillion Won (USD 27 billion) of private investments into the public sector as well as promoting sustainability projects worth 12.7 trillion Won (USD 11.7 billion), such as green schools, hydrogen fuelling stations, and resilience to earthquakes. Subsequent meetings dealt primarily with balancing economic activities while enforcing quarantine measures[9]. In addition to these monitoring meetings, other ministerial branches have dealt with scaling up green measures. For instance, the 219th Ministerial Meeting on International Economic Affairs discussed opportunities for eco-friendly vehicles, secondary life of batteries as well as the renewable energy industry.[10] The latest Ministerial Meeting in December 2020 re-emphasised the countries green vision through plans of[11]:

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[9] Press Release, Ministry of Economic Affairs, "DPM Hong attends Joint G-20 Finance and Health Ministers' Meeting" https://english.moef.go.kr/pc/selectTbPressCenterDtl.do?boardCd=N0001&seq=4981 published on 18 Sept 2020, accessed 11 Jan 2021.

[10] Press Release, Ministry of Economic Affairs, "219th Meeting on International Economic Affairs" https://english.moef.go.kr/pc/selectTbPressCenterDtl.do?boardCd=N0001&seq=5011 published on 12th Nov 2020, accessed 11 Jan 2021.

[11] Press Release, Ministry of Economic Affairs, "22nd Meeting of Central Economic Response Headquarters" https://english.moef.go.kr/pc/selectTbPressCenterDtl.do?boardCd=N0001&seq=5027, published on 7th Dec 2020, accessed 11 Jan 2021.

- Accelerating the low-carbon energy transition;
- Developing low-carbon industries;
- Ensuring inclusiveness of benefit distribution and burdens during the transition;
- Evaluating the possibility to introduce financial measures such as taxes or fiscal management processes and green financing for R&D to achieve a low-carbon economy;
- Promoting e-mobility.

Additional Energy Transition Technologies

The Korean New Deal also lays out some of the technology choices available to realise a low-carbon future. As mentioned in the previous sections, by 2025, it expects to run 200.000 hydrogen cars on the road supported with a reliable hydrogen infrastructure. In the next 5 years, it will be spending 7 billion Won (USD 5.7 million) on developing technology for green hydrogen production and storage as well as the establishment of the hydrogen life-cycle safety management system. In fact, the government launched its Hydrogen Economy Committee[12] on 1st July 2020. In addition to pushing hydrogen in cargo vehicles, the government plans to remodel at least 3 cities into hydrogen cities. Further boosts are expected for building-integrated PV (BIPV) and offshore wind.

Evaluation of Korea's recovery package

The Korean New Green Deal is a major step for the East Asian country to shift to a greener economy. The government made efforts to include all sectors of the economy and society and sought to strategically design the green part of the deal, addressing both short-term recovery and long-term growth.

One of the pillars to achieve this in the energy sector is citizen participation in the form of, for instance, cooperatives. Another pillar is the promotion of carbon-free and smart technologies in the building and transport sector, including smart grids. Through supporting the development of 10 sustainable smart cities, the liveability index might very well increase, as air pollution drops. The Korean New Deal, therefore, also sets out the end-of-life management of fossil fuel vehicles as well as life cycle management for hydrogen vehicles.

South Korea, being known for its off-shore wind potential, will start tapping further into this potential through off-shore wind complexes. The budget allocated for this is 14 trillion Won (USD 13 billion) and will finance a 2.4 GW wind farm by 2028. The wind farm is expected to be expanded to 12 GW by 2030.[13]

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[12] Michael Herh, Business Korea, "Korean Government Launches Hydrogen Economy Committee" Korean Government Launches Hydrogen Economy Committee - Businesskorea, published on 2 July 2020, accessed on 09 Dec 2020.

[13] Reve, "South Korea to increase wind energy generation to 12 gigawatts by 2030" South Korea to increase wind energy generation to 12 gigawatts by 2030 | REVE News of the wind sector in Spain and in the world (evwind.es) published on 19 July 2020, accessed on 09 Dec 2020.

To meet the skill requirements of such a transition, the government also included a timely strategy to create green jobs for youth, aiming to create around 1.9 million additional jobs by 2025.[14]

However, there are some downsides as well. There are concerns that this ambitious New Deal strategy will only last until the next election cycle and that a subsequent government might not have as strong an interest in implementing the strategy.[15]

Further, a 2020 report published by Solutions for Climate[16] finds that biomass has been highly subsidised and electricity generation from wood biomass was 61 times higher in 2018 (6.490.437 MWh) than it was six years before in 2012 (106.023 MWh). Concerns regarding the sustainability of such a heavy reliance on biomass led to a plaintiff challenging the categorisation of biomass as carbon neutral. The plaintiff argues that reducing biomass would significantly reduce air pollution.[17]Additionally, the plaintiff argues that the use of biomass prevents some key renewable sources from being utilised more widely.

[14] IISD, "South Korean Government Launches Plan For A Green New Deal" published on 16 July 2020, accessed on 09 Dec 2020.
[15] Bernd Radowitz, RECHARGE, "South Korea set for big miss of renewable energy target: Fitch Solutions" South Korea set for big miss of renewable energy target: Fitch Solutions | Recharge (rechargenews.com) published on 30 Oct 2020. accessed on 09 Dec 2020.
[16] Solution For Our Climate, Report- "Can Biomass Qualify As Renewable Energy" published in 2020, accessed 30 Oct 2020.
[17] Solution For Our Climate, Press Release, "Solar players sue South Korean government for subsidizing biomass generation", published on 28 Sept 2020, accessed on 09 Dec 2020.