

Hyun-Ah Choi and Bernhard Seliger

Korea's Green New Deal between short-term political goals and long-term structural change

When the COVID-19 pandemic hit the world, South Korea was one of the first countries answering with a large-scale deficit-spending programme at the same time purporting to tackle the issue of growth and green transformation. This Green New Deal won worldwide acclaim, even when details of it were scarce. But what does it really mean? Is it merely “greenwashing” of government spending, or will it be able to bring South Korea to a growth path at the same time stable, carbon-neutral and sustainable? In the recent environmental history of South Korea, the large-scale afforestation starting in the 1960s was an example for a successful green transformation. However, the results are now challenged due to the alleged poor carbon absorption characteristics of forests. This paper discusses South Korea's New Green Deal, its impact on environment and the economy, and in particular the Korean forest policy.

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1. Introduction – from “the world’s greatest carbon villain” to climate hero?

The 2021 G 20 summit and the run-up to the Glasgow UNFCCC COP 26 both were dominated by the debate how modern industrial societies can at the same time become carbon neutral, a goal deemed indispensable to cope with global warming, and still maintain economic growth, indispensable not only to overcome in the short term the economic ramifications of the Covid-19 pandemic, but also in the long-run to achieve development and maintain wealth and comfortable life styles. This debate is not at all new: when the famous Club of Rome report on the “limits of growth” was published in 1972, the debate was wide open. Ironically, though none of the doomsday predictions of the Club of Rome, which in a nutshell predicted the end of most important raw materials and energy sources by the year 2000, ever came close to true, this report is today cited by many environmentalists as a proof that action on climate is urgent. This time, the focus is a little different – global warming is the target, no longer resource limitations – but the argument is very similar; we have only one earth, and mankind, in particular developed countries, overuse the capability of this world to store and cope with CO² by far, thus bringing the earth’s ecosystem to a collapse. In a vulgar, but widely-believed version, this argument also maintains that market economies brought this

disaster about, since they grow most, and that only decisive state intervention can solve these problems, though all evidence points to the contrary, namely that where states were entirely responsible for the economy, in socialist states, environmental problems were by far the biggest.

In this situation, countries try to combine policy actions to overcome the severe short-term contractions resulting from crises with long-term goals to de-carbonize the economy. Basically, nothing is wrong with this, indeed it would be laudable to achieve these goals in unison. However, often short-term goals might be more powerful than long-term, lofty visions, and then easily policy can only become green in name – “greening” policies becomes “greenwashing”. The greenwashing of otherwise unsustainable policies at the company level or state level brought about a whole literature critically dissecting it. In South Korea, the first very visible green initiative was the “green growth” policy under President Lee Myung-Bak after the global financial crisis of 2008-2009. That time, eighty percent of the funding of the post-crisis stimulus project went to green projects. However, soon allegations were raised that much of the project was not green at all, and indeed the signature “four river restoration”, itself a euphemism, had severe negative ecological consequences. Nevertheless, President Lee was very successful in marketing green growth, and in record speed a new international institute, the Global

Green Growth Institute seated in Seoul, was founded. Given the necessity to convince the population in South Korea and worldwide that the decoupling of growth and carbon emissions was an important policy task, this policy and institute definitely have their merits and indeed a lot of the criticism of President Lee's policy might have simply been envy by his opponents that he came up with this policy.

Similarly, South Korea's current President Moon Jae-In announced soon after the Covid-19 pandemic first became a worldwide challenge, trade froze and local economies were devastated by various degrees of lockdown, a "Green New Deal" project. This project again was eminently political in nature: first announced ahead of the April 2020 Parliamentary election, it certainly helped the landslide victory of the ruling Democratic Party. Also, it made for the first time in Korea a pledge for net-zero emissions by 2050. Accordingly, commentators like Troy Stangarone of the Korea Economic Institute of America praised it a lot in advance. It had also a lot of appeal to voters suffering from economic misfortune, since the "new deal" aspect promised redistribution of wealth and "economic justice" (whatever that means) for the poorer. But will this programme really achieve a turnaround of carbon emissions? One of the political attractions to set goals far in the future (2050, 2045 or 2030) is that politicians are not really politically responsible anymore when it comes to the set date. It is a fact that despite the green growth policy, carbon emissions in South Korea grew to an extent that activists called it "the biggest climate villain" (Watts 2020). And, in South Korea – as in Germany – another conflict line shows: Moon at the same time pledged to end nuclear power and fossil power. But the share of renewable energy is tiny and can by no means be expected to grow to such an extent that it can in the foreseeable future substitute both nuclear and fossil fuels. So – will the stimulus be rather a short-term economic programme greenwashed? Will it be a long-term transformation, but to the detriment of growth? It is important to recall that there was indeed one programme in South

Korea, which very successfully combined economic and ecological benefits, namely the large-scale afforestation under President Park Chung-Hee since the 1960s.

The remainder of this paper is organized as follows: the second sections looks closer into the current South Korean Green New Deal. Section three will look into economic and ecological effects of green policies in Korea, the fourth section looks at the successful afforestation policy of South Korea, followed by a conclusion (5.).

2. The Green New Deal – An Overview

When in early 2020 the Covid-19 pandemic broke out, South Korea was one of the first countries outside of China hit hard by the outbreak. Following a mass outbreak in Daegu early on, tourism and international flights collapsed, then also trade and the local economy was stymied by various degrees of a soft lockdown, though South Korea never employed the stricter form of lockdown like Australia or many European countries. Before the April 2020 elections to the National Assembly, which ended with a landslide victory for President Moon Jae-In and his Democratic Party, Moon announced a Korean New Deal to cope with the economic fallout of the pandemic. The K-New Deal,¹ launched from July 2020, pledged originally 135 bn. USD for two programmes: A Digital New Deal, making the economy fit for digital transformation, e.g. through smart cities and smart healthcare projects and the use of AI, and a Green New Deal, focusing on renewable energy, green infrastructure projects and green industrial transformation, for example in the car manufacturing sector. Of this 135 bn. USD, two thirds (96.3 bn. USD) should come from the state coffers, 21.2 bn. USD from local governments and the remaining 17.3 bn. USD from the private sector. The Green New Deal had the lion's share, with 61.9 bn. USD planned to be invested in green technologies. By this, beside the digital and green transformation, also job security was targeted and it was hoped that by 2025 all in all between 660.000

and 1,9 million jobs could be created. Job creation was in a political sense essential, since President Moon had started his presidency on the double pledge to reduce youth unemployment and raising minimum wages – while he achieved the latter, predictably he exacerbated the former problem and there was a lot of youth discontent. Another important goal to achieve with the programme was a more equitable spread of investment outside the Seoul Metropolitan region. Seoul, the surrounding Gyeonggi province and Incheon, the harbour of Seoul, together comprise half of the population, and not more than half of the investment should be in this region, to bring innovation and jobs to other provinces, too.

Some of the announced measures were very concrete – for example, a subsidy programme for buying environmentally more friendly cars was announced, and in 2021 USD 17 million were allocated for people buying electric cars and up to USD 33.5 million for people buying hydrogen fuel-cell vehicles. While South Korea only experienced a mild contraction in 2020 of around one percent of GDP – only China and Norway fared better among industrial powerhouses -, nevertheless soon the stimulus was deemed to be insufficient by the government. Therefore, a year after the first stimulus President Moon announced another stimulus package, dubbed “Korean New Deal 2.0”. This expands the original 135 bn. USD programme to 191 bn. USD. The sectoral focus was only slightly expanding from the original New Deal proposal; the Digital New Deal focused on industries like 5G, artificial intelligence and big data. As new buzzwords, the interconnected virtual platforms dubbed “metaverse” and technologies such as blockchain and cloud computing were stressed. The Green New Deal is set to promote investments in renewable energy, eco-friendly buildings, electric vehicles and telemedicine. Especially the (green) hydrogen technology, i.e. producing hydrogen by water and renewable energy, is explored. Among others, also better emissions monitoring is promised. With this expanded programme, the Moon administration hopes to create even

more jobs than before, namely a total of 2.5 million. Additionally, a so-called Human New Deal of USD 44 bn. means the investment in the social safety net, like job training, education and childcare support.²

The Green New Deal might have a new focus for South Korea, but actually the basic structure is not very different from former industrial programmes. Indeed, these programmes are remnants from a time when the South Korean economy grew according to quite elaborate indicative planning set by the government. The mixture of market pressure in world markets and selective incentives for exporting companies had been very successful from the mid-1960s to the mid-1980s, and South Korea in that time logged the highest growth worldwide. While in the more mature economy afterwards most of the planning tools were abandoned, still strong selective incentives focusing on investment in certain “future-oriented” sectors remained. Typically, financing was done in a mixed way by the government and companies, with more or less subtle pressure on companies to join the government’s efforts. For the Green New Deal, South Korea in 2021 set up a Korean New Deal Fund of KRW 20 tr. (around USD 17 bn.), 65 of which should come from private funds to provide low-risk investment opportunities for private investors, as the government would absorb losses incurred by the private investors.³

3. The Green New Deal and Korea’s Market Economy: greenwashing, deficit-spending, and a return of planification?

When President Moon Jae-In announced the Green New Deal, it was lauded in unison by national and international media. South Korea, it seemed, successfully contained Covid-19, and now would find a way out of the corona-induced recession. Indeed, before the Parliamentary Election Moon sold the Korean experience as a model for the world to follow. However, the reality might be much less glamorous. Already the goal of carbon-neutral green growth under President Lee Myung-Bak

failed – indeed, despite the policy, through the surge of coal use and carbon emissions South Korea by far exceeded what its obligations under the Paris climate agreement made necessary – relatively more than any other nation. The biggest problem seems to be that while green growth investment may generally go into the right direction, there is no guarantee that the complete package of K-New Deal investment will have a positive or negative net effect. Some of the measures are simply recycled existing policies, others might even be counter-productive to growth. The simultaneous exit from nuclear and coal power is currently simply impossible. Measures to ease the increasing spending constraints of citizens, like the temporary cut of the fuel tax by twenty percent, directly contradict policies to curb CO₂ emissions. Another example is the hype surrounding hydrogen fuel. While green hydrogen fuel really could be an energy for the future, currently mostly “brown” hydrogen fuel is used, made by electricity from coal and not being superior to traditional fossil fuel. Therefore, environmental groups often claim that many measures of the New Green Deal are indeed greenwashing of industries.

The second criticism of the programme concerns the question of finance for the New Green Deal. Generally, the idea to have companies participating in the finance is correct. However, the largest part of funding comes from state coffers, and it is questionable if many of the measures financed really qualify as investment, or not rather as consumption. While it might be necessary to transform the economy to perform with less carbon emissions, can this at the same time lead to sustainable growth and job growth? The *Korean New Deal: National Strategy for a Great Transformation* states that the government aims to transform South Korea into a smart country at the centre of a digital transition, a green country achieving the balance among people, nature and growth and a safe country with strong employment and social safety nets. It seems dubious that all this can be achieved simultaneously. And financing this programme by debt means that later generations have to

pay back the debt. Will the growth part of the green growth programmes be strong enough to allow them to do so?

Finally, any large-scale state-financed programme of industrial transformation, and this is the challenge of adaptation to climate change, has to cope with the limited knowledge of policy makers. How can successful new industries and forms of energies be identified? “Against” the market? While in the past, the selective incentives for exporting companies led to the development of a strong export sector, it is questionable what the effect of subsidies for firms complying with the New Green Deal goals will bring them. When under the Lee Myung-Bak government a new resource policy was initiated, it ultimately failed and left horrendous debt. The central government had pushed public and private companies to invest in certain resource developments, but failed to select the “winners” over the “losers”. Why should the Moon administration be more successful? The new policy also suffers from the fact that in an important field, namely financing energy projects, the Green New Deal does not lead to more, but to less investment. In 2016 and 2017 alone, South Korea provided more than USD 1.1 bn. in public funds for the construction of new coal power plants overseas, in projects often linking it to Official Development Aid. This, South Korea vowed, will end, but this will also mean that South Korea’s attractiveness as ODA partner is somewhat reduced.

One of the most promising and potentially economically efficient ways to reduce GHG emissions are functioning emissions trading systems (ETS). South Korea for some years has a reasonable well-functioning ETS which learned from the mistakes for example of the European system, where too generous grandfathering led to a breakdown of prices. Potentially, this could be very attractive as a bilateral, regional or international system. For example, South Korean firms could save much more CO₂ if investment for emissions reduction in North Korean factories or power sta-

tions were possible. Such clean finance approaches have been started with the Clean Development Mechanism, but in the current Green New Deal play a very minor role. It might be argued that it is unfair to put too many expectations into the Green New Deal – but this is exactly, how the deal was sold to the public. And by these standards, it will likely fail on many, if not all envisaged goals.

4. An example for successful green growth policy - Long-term structural change in Korea's forestry strategy

The government of South Korea has designed a new strategy to create a carbon neutral society through the Korean New Deal Policy in 2020. This policy is divided into the Digital New Deal and the Green New Deal. As for the Green New Deal, cities and living areas will be turned into green infrastructure based on renewable energy. Considering the current state of forests and timber production plans, carbon removal is estimated to decrease by 30 percent from the current level by 2050. Innovative forest management, therefore, is a key to improving the aging forest structure, promoting the use of wood products/timber and increasing carbon stocks. The South Korea Government plans to increase carbon sinks by creating urban green spaces for recreational use, restoring degraded forestlands and tree-planting in underutilized lands. The Government will continue its forest management to maintain the forest carbon removals at the highest level possible by changing tree species and implementing programmes to keep the forests healthy.⁴ In this part of the plan, Korea Forest Service (KFS) announced the three billion new trees will be planted over the next 30 years after logging aged trees to offset carbon emissions and six trillion won (US\$5.3 billion) will be invested to create new forest by 2050 on 20 January 2021.⁵ This announcement has been raising controversy among government, academics, and civil society in South Korea.

In the past, South Korea's once devastated forests – due to common pool problems throughout the Choson period, exploitation

during Japanese colonization (1910-1945), deforestation in the Korean War (January 1950-July 1953), shifting cultivation, and indiscriminate felling – were reforested within a short period of time through the 1st and 2nd Erosion Control and Greening 10 Year Project (1973-1987). South Korea has wide knowledge on how to successfully accomplish this, as it has been restoring barren forest land and is acknowledged by the international community as the only country to implement successful short-term reforestation. By 1977, the total area of plantations had reached 643,000 ha in the country.⁶

Table 1. Area of tree plantation

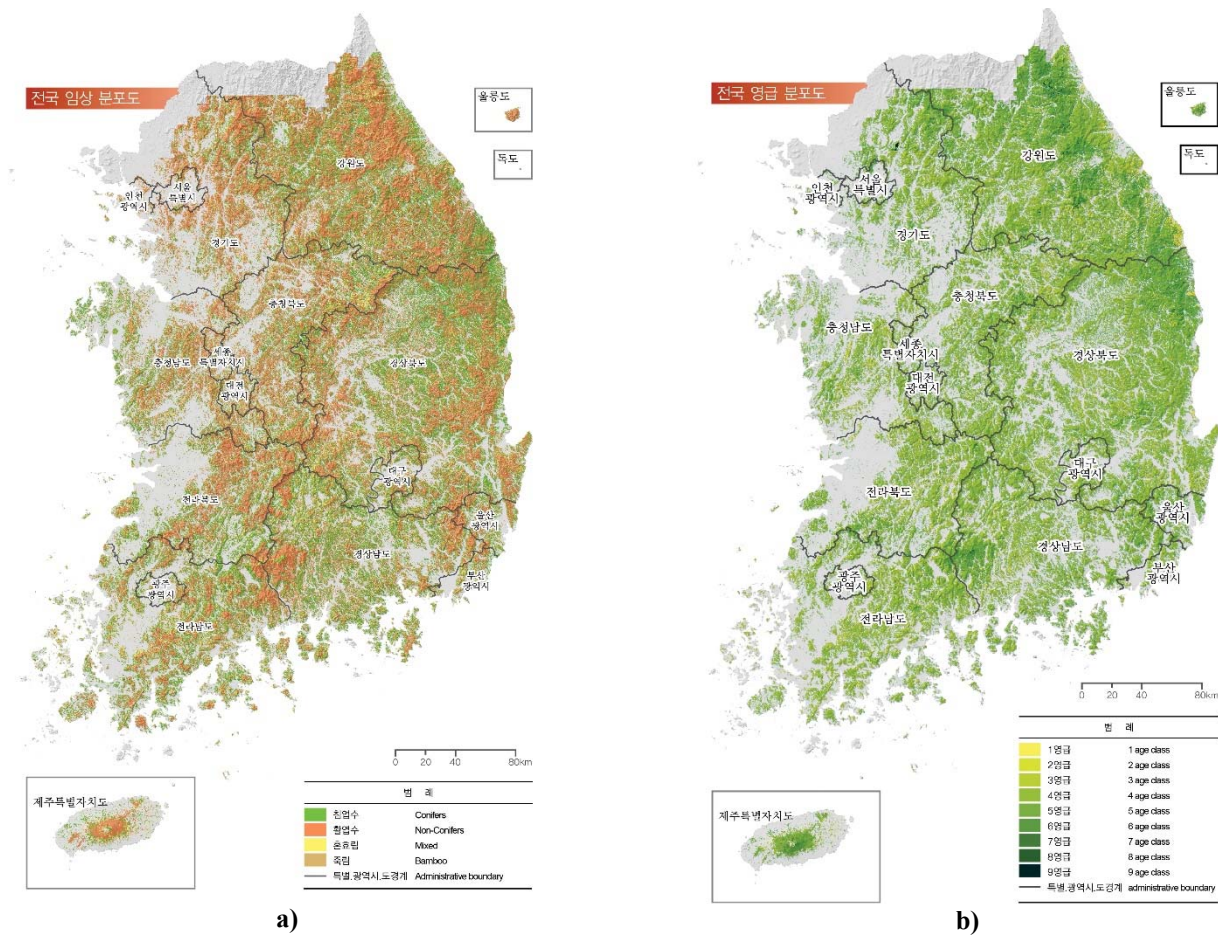
	Area (ha)	
	Planned	Established
1959-1966	800,000	
1967-1972	514,000	436,000
1973-1977	207,000	207,000
Total	1,521,000	643,000

Source: Song, 1982

After the tree-planting period, South Korea established the 3rd Mountainous Region Resource Plan (1988-1997), promoting the development of forest income and the enhancement of public function, and expanded international forestry cooperation having the 1992 Rio United Nations Conference on Environment and Development at its basis. The 4th Basic Forest Plan (1998-2007) and 5th Basic Forest Plan (2008-2017) aimed to build a sustainable forest management infrastructure, foster competitive forestry business, and promote a pleasant forest environment. The 6th Basic Forest Plan (2018-2037) aimed to establish sustainable forest management. It has been focusing on forest policies in the concept of forest welfare that promote health and rest through forest bathing, forest recreation, and forest healing activities in well-developed forests.

The current total forested area of South Korea is approximately 63 percent or 6,335,000 ha of territory. The distribution of

Figure 1. Distribution of forest type (a) and forest age classes (b) in South Korea



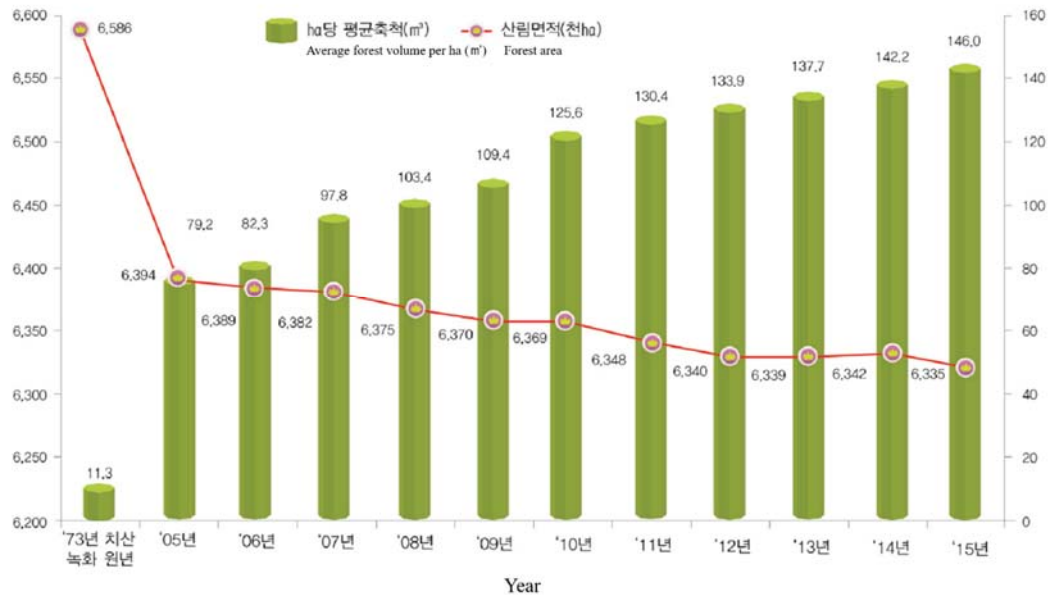
Source: Korea Forest Service 2021¹

forest area by age-class is 1,797,000 ha, or 26.8 percent of trees under 30 years old and 4,377,000 ha, 6.1 percent, of trees over 31 years old. The dominant vegetation type is needleleaved forest that covers 42 percent of the area, while broadleaved forest covers 26 percent and mixed forest covers 30 percent, all providing rich habitat for wild animals.⁷

Most of the planting of trees took place in the 1970s and 1980s and now the trees are aging in South Korea. The age class of trees are currently in 3-4 age class; whose net growth volumes are the highest in their lifespan. In the future, the trees in South Korea will age, the percentage of forestlands at age-class 6 or older (Figure 1), whose net growth volume declines rapidly. The National Institute of Forest Science under KFS estimated that the percentage of forestlands at age-class 6 or older will increase from 10.2 per-

cent in 2020 to 32.9 percent in 2030 and accordingly, the annual average net growth volume per hectare will decrease from 4.3m³ in 2020 to 2.6 m³ in 2030 and further down to 1.9 m³ in 2050 (Figure 2).⁸ KFS points out and claims that aging trees older than 30 years have poor carbon absorption capacity in South Korea. However, this plan is more focused on use of timber without consideration of the biodiversity in the forestry and forest services. The civil society such as Korea Federation for Environmental Movements and Forest for Life do not endorse this carbon neutral logging policy. According to the Korea National Arboretum under the KFS analysed the annual average carbon absorption capacity between large and normal-sized trees. The average carbon absorption capacity is 27.5 kg in the 1990s, 29.4 kg in the 2000s, and 35.8 kg in the 2010s in South Korea.⁹

Figure 2. Average forest volume per ha (m³) and forest area in South Korea

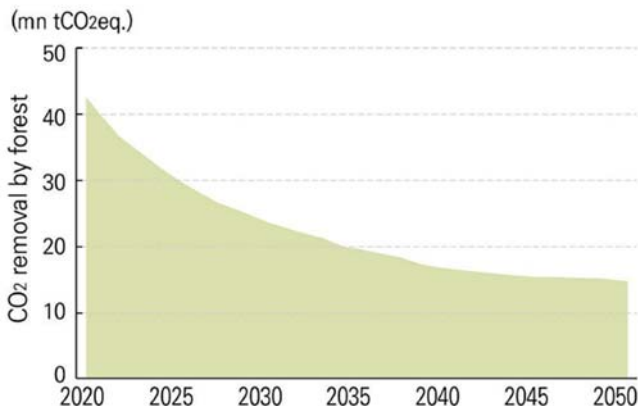


Source: Korea Forest Service 2016

Forest ecosystems support human well-being in many ways. They provide us with food, feed, fibre, and ecological resilience to climate change. The Korean society cannot make a decision or choose one direction now. To provide a more balanced perspective, it needs to understand the importance of carbon neutrality and forest management, various viewpoints for solving this problem. It also needs discussion among government, academic and the civil society base on the scientific approaches. The plans to substitute older forests by younger ones based only on the carbon absorption characteristics is dangerous, since it neglects the comprehensive function

of forests, including growing biodiversity in older forests. Other conflicts also loom large – if renewable energy indeed will be expanded dramatically, where should solar panels and windmills go – certainly, urban areas and the relatively small part of agricultural land are much less feasible than the forests. But this requires additional logging, the building of large ways to bring in gigantic wings of the windmills and ensure smooth operation of the wind power stations. Afforestation in the 1960s to 1980s was indeed a true green growth project – it led to the large-scale rehabilitation of environment, brought jobs and helped to ease the transformation from a rural to an industrial society. Can the New Green Deal achieve the same?

Figure 3. Estimated CO₂ removal by forest



Source: The Government of the Republic of Korea 2020

5. Conclusion

South Korea in the first phase of the Corona pandemic won praise as a country successfully insulating itself from the most devastating economic consequences. However, a slow start of vaccinations and later a protracted situation due to less-than-expected safety from vaccinations tremendously hurt small business owners. While despite the pandemic large companies, in particular in the semicon-

ductor business, experienced record exports and earnings, the problem of a lack of a backbone of strong, export-oriented Small and Medium Enterprises meant that job growth did not follow the economic recovery at the same pace. In this situation, it is not easy to start another radical transformation of the economy without a clear way of how to ensure carbon neutrality and industrial survival at the same time. For example, despite having no natural fuel resources, South Korea is a leading petrochemical producer. This must be completely reversed, if carbon neutrality is to be truly achieved.

For the South Korean society, a much more comprehensive debate is necessary. Already now, the phase-out of nuclear power has been called into question. Without stronger nuclear power, carbon neutrality remains a pipe dream. Additionally, pledges to international treaties might become difficult to achieve, if subsequent governments will renege on pledges by the current one. This has been seen in the US recently, and in the polarized, short-term oriented South Korean political system, this can easily happen, maybe already with the presidential elections next year. Then, not much will remain from the Green New Deal than a short-term stimulus.

|| Hyun-Ah Choi

Dr. Hyun-Ah Choi is currently working at Hanns Seidel Foundation Korea. She works on sustainable development issues in the inner-Korean border area and has participated in field survey(s) near the DMZ and border area since 2015. In 2019 she received a commendation from the Ministry of Unification Korea for implementing projects of Inter-Korean environment cooperation. She is also a member of the Korean Society for Climate Change since 2009, the Korea Council for Reconciliation and Cooperation, and the National Unification Advisory Council.

|| Bernhard Seliger

Dr. Bernhard Seliger has been the country representative of Hanns Seidel Foundation in Seoul since 2002. In this capacity, he has been carrying out projects in South Korea as well as

North Korea for years, especially in the field of international environmental cooperation. He is also co-editor of the North Korean Review and active on the editorial board of the Korean Journal of Unification Affairs. Between 2004 and 2007, he was a visiting professor at Seoul National University, Graduate School of Public Administration. Dr. Seliger received his PhD from the Faculty of Economics and Social Sciences at Kiel University.

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