Written by <u>Angeline Tan</u> on January 13, 2023



South Korea Curtails "Green" Plans in Push for More Nuclear Energy

SINGAPORE — South Korea will bolster nuclear power generation and curtail its plans for "renewable" energy as the nation revamps its electricity mix to achieve emissions-reduction targets.

Nuclear plants are now poised to account for almost one-third of generation capacity by 2030, up from about 24 percent forecast in previous draft documents, based on government sources published on January 12. Renewable sources are expected to produce around 21.6 percent of the nation's energy by the same date, lower than a prior estimate of 30.2 percent.

The 10th Basic Plan for Long-Term Electricity Supply and Demand adheres to the country's move in 2021 to boost its actions toward "green" policies. By the end of this decade, South Korea is hoping to reduce greenhouse-gas emissions by 40 percent from 2018 levels.



bewrite/iStock/Getty Images Plus South Korean nuclear power plant

President Yoon Suk-yeol, who assumed power in 2022, has relied on nuclear power as a key tool to downgrade emissions instead of solar, wind, or hydro.

Yoon championed atomic energy during his presidential campaign, and has urged for the construction of more reactors — a stark contrast to former president Moon Jae-in's anti-nuclear policies.

Moreover, Yoon's blueprint sees a weakening role of coal and liquefied natural gas. LNG will be needed for about nine percent of the nation's electricity generation and coal for 14 percent by 2036, based on energy ministry forecasts.

Furthermore, South Korea is planning to use hydrogen and ammonia for co-firing in its current coal power plants, the ministry said. The two fuels will together comprise more than seven percent of the power mix in 2036.

Seoul has also pointed out that Europe's energy woes in wake of the Ukraine-Russia crisis are a sober reminder of the importance of homegrown sources of power.

The government is calling for the construction of another six nuclear plants by 2036, in addition to the current 24 reactors, in a country the size of the U.S. state of Indiana.

The 24 current reactors, which can generate 23,250 MW, are focused in four locations —with five to seven reactors at each location — with some five million people living within 30 km of the plants, 2019 data gathered by opposition lawmaker Wi Seong-gon revealed.

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Nuclear specialists contend that South Korea's clustered reactors do not pose health risks, yet some residents have yet to be persuaded.

"The cows are a bit bad. There have been miscarriages, who knows why?" said Kim Jin-sun, a 75-yearold livestock owner living near Wolsong. "Even if I try to sell my house or rice field and go somewhere else, no one will buy."

Although many South Koreans back expanding nuclear power, a considerable minority are opposing an increase.

A June 28-30 survey of 1,000 South Koreans by Gallup Korea showed 39 percent supported an increase of nuclear energy, 30 percent wanted existing levels to be maintained, while 18 percent asked for a reduction.

South Korea ranks fifth in the world for nuclear generation, according to the World Economic Forum data for 2020, trailing behind the United States, China, France, and Russia.

As the country has scarce natural resources, analysts say that nuclear energy is vital to provide electricity for the country and supply power to its world-class manufacturing industry, which exports chips, cars, display panels, and electric vehicle batteries.

"South Korea produces what other countries need — so there's a lot of energy consumption relative to the population. But we can't reduce our electricity usage — if we reduce it, we become poor," said Chung Bum-jin, professor of nuclear engineering at Kyung Hee University.

Chung added that unlike bulkier oil, gas, or coal, nuclear power is less impacted by energy price fluctuations, as uranium price accounts for less than 10 percent of the total power generation cost, and years' worth of nuclear fuel can be stored.

"Although trace amounts of material may be detected in the body or environment of nearby residents due to nuclear power plant operation, the claim that the amount of radioactive material detected affects health is not valid," said operator Korea Hydro & Nuclear Power.

The operator added that the maximum amount of tritium found in Wolsong residents' urine samples between 2018-2020 was 0.00034 millisievert, well below the limit for the general public, and the yearly exposure is much lower than natural radiation.

"The amount of detected radiation at Wolsong is equivalent to eating six bananas a year, which has potassium," said Dr. Jeong Yong-hoon, professor of nuclear and quantum engineering at Korea Advanced Institute of Science and Technology (KAIST).

In neighboring Japan, Prime Minister Fumio Kishida's advisory panel authorized a plan last year to prolong the lifespans of nuclear reactors beyond 60 years as well as the construction of new units to replace decommissioned ones, effectively undoing existing policies following the 2011 Fukushima disaster.

This move mirrors a shift in public opinion as Japan, which relies mainly on energy imports, grapples with the possibility of blackouts amid the Russia-Ukraine crisis and extreme weather.

Just like South Korea, Japan is joining a global reversion to nuclear energy after coal and natural gas prices_skyrocketed amid the Ukraine-Russia crisis.

A survey by the *Yomiuri* newspaper in August 2022 found 58 percent supporting the restart of idled reactors, the first time a majority was in favor of the idea in that poll series since the question was



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initially asked in 2017.

A separate survey by public broadcaster NHK found 45 percent approved of the panel's plan, while 37 percent opposed it. A July poll by the *Nikkei* newspaper found that seven in 10 respondents would back nuclear energy.



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