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Changes of Nuclear Energy Policy During Moon Jae-In's Administration and its Impact on the Energy Industry Ecosystem of South Korea

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Abstract. The study examines the rapid changes in nuclear energy policy under South Korea's Moon Jae-in administration and its impact on the Energy Industry Ecosystem by analyzing news from Korean official news sites, as well as comparing the efficiency of nuclear and renewable energy on economic growth and carbon emissions. The implementation of a new policy that prioritized renewable energy instead of nuclear energy, which accounts for 40% of Korea's electricity production, divided Korean society into pro- and anti-nuclear power plants.

This study focuses on the consequences of the implementation of Moon Jae-in's nuclear energy policy in the period from 2017 till 2022 and suggests possible solutions to minimize negative consequences of this policy.

In conclusion, the Moon administration's policy of halting and closing nuclear power plant construction resulted in the ecosystem of the nuclear energy industry being damaged due to the drain of specialized brains. Additionally, the promotion of renewable energy such as solar panels not only did not suit Korea's environment and climate but caused environmental pollution.

Considering the negative impact of expanding the use of renewable energy, the study suggests the previous investments in the nuclear energy industry should be rolled back and the proportion of green energy and nuclear energy should be reasonably adjusted to suit Korea's special environment.

Keywords: South Korea, Moon administration's energy policy, Energy Industry Ecosystem, renewable energy.

Introduction

In the recent past, more than half of Korea's energy supply depended on imported energy resources and was produced by coal and hydroelectric power plants. Today, all power plants in Korea can ensure the country's domestic needs. And nuclear power plants contribute to this to a large extent - they generate more than 40% of the energy consumed in the country. Currently, Korea's energy sector is a well-developed sector of the country's economy. 24 nuclear power reactors are now in operation in the Republic of Korea, and four more are being built.

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Active development in this field began in 1957, when Korea joined the International Atomic Energy Agency. This was an important step, due to the small reserves of extracted fuel, which are not enough to meet growing domestic needs. Energy poverty had no effect on the ever-increasing energy consumption. If before the 90s the growth was not significant, then in the following years the growth figure increased sharply about 9% per year. Thus, the development of energy in the Republic of Korea rested on two things - reliable suppliers of resources and its own production of cheap electricity. At the initial stage of industrialization, energy shortages were avoided by using own available resources and constantly increasing imports of crude oil. Its share in the structure of primary energy consumption was constantly growing, and in the early 70s it already amounted to 47.2%. By the end of that decade, the figure had increased to 63.3%, and South Korea's energy sector was heavily dependent on security of supply. Two global oil crises have led to the obvious conclusion about the need to diversify the country's energy balance. Natural gas production grew, but the main step towards energy independence was the decision to commission a sufficient number of nuclear power plants. The production of electrical energy on a significant scale began only in 1978, when the Korea-1 power unit was launched at full capacity. From that moment on, energy development in the Republic of Korea followed the path of its own independence [1].

However, after the Chernobyl accident in 1986 and the Fukushima nuclear accident in 2011, the dangers of nuclear power were exposed through the media, and opposition movements often emerged in the selection of nuclear power plant sites and radioactive waste disposal sites, attracting much attention to global energy policy trends. In addition, there were public worries and rising doubts about the safety of nuclear power after earthquakes in Pohang and Gyeongju where nuclear facilities are situated [2].

It is known that Western environmental movements traditionally have a bad attitude towards nuclear energy - although in fact it has been said more than once that such anti-nuclear sentiments contradict the basic ideas of the environmental movement, since nuclear power plants cause significantly less total harm to the environment than their main competitor - thermal power stations. In this case, it is supposed that South Korean sentiments were influenced by statements from the Western countries' "green supporters" [3].

A landslide victory (41% of the vote) was won by Moon Jae-in in May 2017 as a result of early presidential elections. A progressive-minded, optimistic liberal, Moon Jae-in, whose program was significantly different from the previous governments. From the first days of his presidency, Moon Jae-in began to actively implement his election promises, setting a course for deactivating the nuclear power plant and introducing a green economy.

The "Coal and Nuclear power phase-out" policy, which was formalized as <8th Basic Electricity Supply and Demand Plan (December 2017)> were announced after Moon Jae-in assumed presidency in 2017, it must be noted that this policy has been controversial from the very beginning. The Moon Jae-in administration's energy policy have been promoted under titles such as "Coal and Nuclear Power Phase Out", "Renewable Energy 3020", "Energy Transition" and "Carbon Neutrality Policy". The goals and core content of the energy policy are to phase out nuclear power at the same time as phasing out coal and achieving a 20% renewable energy production level by 2030. Ultimately, the goal was to achieve carbon neutrality by 2050 [4].

The Moon Jae-in administration's energy policy's aim was to lay the groundwork for an energy paradigm shift by phasing out nuclear power and coal. While the focus of energy policy in the past has been on economic efficiency and stability of supply and demand, and they assert that it

is time to proactively pursue a "clean and secure energy transition" in the future by prioritizing sustainability and public safety.

The second category explores public protests against the policy changes, particularly concerning usage of large amounts of electricity, especially during summer 2018 when there was insufficient power for air conditioning. It also investigates issues with installation of solar panels which threaten food security on agricultural land.

The final category delves into the crisis within the nuclear industry, which has been a cornerstone of development for many years. It discusses the perspectives of scientists and industry workers regarding the policy changes, including their concerns and the phenomenon of scientists leaving for countries that continue to develop nuclear capabilities. Additionally, it addresses controversies surrounding the construction of nuclear stations in the United Arab Emirates, contrasting the decision to close plants domestically while supporting nuclear development abroad [5].

Research methods

This paper analyzes the previous administration's changes in nuclear power policy and identifies the new policy's impact on the South Korean nuclear power industry ecosystem. Through a content analyzing textual data from news articles and governmental announcements which were collected from key government websites of Ministry of Trade, industry and energy (MOTIE), Ministry of Economy and Finance; news sources such as Korea Nuclear Power Times and Yonhap News Agency providing information about nuclear energy policy decisions and strategies under the Moon Jae-in's administration.

Results and discussions

The annual reports of changes in the nuclear energy sector were investigated from Nuclear Energy Data and World Energy Outlook which was issued by The Organization for Economic Co-operation and Development (OECD).

The history of nuclear energy development in South Korea and data collection about new innovations in the nuclear industry were adopted from Korea Atomic Energy Research Institute (KAERI), as well as from the National Archives of Korea (Nuclear energy policy).

The expert opinions and criticism of independent experts from engineers of Korean Hydro and Nuclear Energy, members of the Nuclear Policy Center of Seoul National University, and General Secretary of the Environmental Movement Action Council were also considered. Furthermore, an interview with Kim Hak Do, the head of the Energy Resources Department of the Ministry of Trade, industry and energy was examined in which he explained the government's position.

The study was driven by the following research questions:

1) What major changes have occurred since the enforcement of the "Nuclear power phase-out" and "Energy Transition" policy?

2) How did this policy influence the subsequent development of nuclear power plants and science in this area?

3) What financial setbacks came about as a result of this policy's implementation?

South Korea's achievements in nuclear energy sector: Successful Past

Considering the changes being carried out in the nuclear industry and their perception in South Korea, it is impossible not to take into account the significantly rapid development

and establishment of nuclear energy, which played a key role in the economic recovery of the country. Diving into the history of the South Korean nuclear industry, it becomes obvious how much effort was spent on its development [1].

Korea has achieved significant growth in its nuclear industry over the past 40 years following the commissioning of the country's first nuclear power plant. While noting the achievements of South Korean nuclear energy, it is worth noting the main developments hence Korean nuclear power plants operate successfully.

Centrifugal turbocharger, an important component of the power generation system, has been successfully designed and manufactured with its own forces in Korea. Since 1997, KAERI has been developing the System-Integrated Modular Advanced Reactor (SMART), an advanced integrated pressurized water reactor (PWR) that can be used for seawater desalination or heat generation, as well as electricity [1].

The APR1400 is a high power pressurized water reactor designed to meet the latest regulatory requirements, producing 1400 MW of electricity.

Korea's experience in building and operating optimized power reactors has led to internationally competitive construction technologies and outstanding operation and maintenance capabilities [6].

Here is several internal factors which contributed to such rapid development of nuclear safety in Korea:

• In 1969 Policy development and R&D to enhance nuclear safety intensified. The development of nuclear power plants has gradually expanded and strengthened activities related to nuclear safety.

• In 1971 A commission was created to review the safety of nuclear reactor installations within the Atomic Energy Agency. It is also worth noting that along with the development and increase in the number of nuclear power plants, responsibility increases, and the state has always taken the necessary steps for the safety of the people.

• In 1992 Launched a mid- to long-term nuclear research and development plan to advance safety research.

• In 2011 South Korea adopted the Nuclear Safety Law, opened the Nuclear Safety Commission, and prepared measures to inspect and improve the safety of operating domestic nuclear installations [1].

Through such rapid development and innovation, Korea began to sign international treaties in 2009. One of the most significant agreements was signed with the UAE for the export of APR-1400 reactors and export of research reactors to Jordan in 2010. Then in 2015 Pre-project agreement for the construction of SMART reactors signed with Saudi Arabia. Thanks to self-sufficiency in nuclear technology, localization of nuclear equipment and materials, as well as world-class capabilities in the construction and operation of nuclear power plants, the Republic of Korea has become the fourth country exporting nuclear power plants and supplier of nuclear technology in the world.

The rise to power of the Moon Jae-in administration is significant in several aspects of Korean history. First, it is politically significant because it represents an unprecedented presidential impeachment of the previous president and change of government through a candlelight protest [7].

President Moon Jae-in has pledged to pursue a nuclear power phase-out policy, including a complete halt in the construction of new nuclear power plants and the cancellation of construction plans. The Moon Jae-in administration's nuclear power phase-out policy planned to reduce the number of nuclear power plants from 24 in 2018 to 18 in 2030.

The "Renewable Energy 2030 Vision" has been revealed by the government with the objective of raising the quantity of renewable energy from 7.6% in 2017 to 20% in 2030 and 30%–35% in 2040 (MOTIE, 2017) [8].

Table 1. Key contents of nuclear phase-out policy

Vision	• Producing clean and safe energy
Key projects	• Reducing the number of nuclear power plants • Early shutdown of old plants and nullification of constructing new plants
Required technology	• Technology to dismantle nuclear power plants • Technology to prevent nuclear accidents • Technology relevant to nuclear fuel disposal
System reorganization	• Reducing national demands on electricity by utilizing 4th industrial revolution technology • Making energy providers' energy efficiency mandatory • Reorganizing the energy fee system • Banning the sale of energy-inefficient products

Source: Ministry of Science and ICT (Ministry of Interior and Safety [MOIS], 2017); MOTIE (2017c)

In June 2017, at a ceremony marking the final closure of Kori Unit 1, President Moon re-emphasized the plan to fulfill the promise of energy transition policies and announced a decision to achieve public consensus to suspend construction of the Shin-Kori Nuclear Power Plant [2].

It should be noted that the construction of Units 3 and 4 of the Shin Hanul NPP and units 5 and 6 of the Shin Kori NPP had been suspended.

An agreement on the construction of these units was signed back in November 2014 between the generating company Korea Hydro & Nuclear Power (KHNP) and the administration of Ulchin County. It was planned to begin construction of these units in May 2017 and put them into commercial operation in 2022 and 2023. This decision caused a great public protest, consequently, the government created a special commission to gather public opinion on the fate of nuclear power plant construction projects, which are already 30% completed. Four hundred and seventy-one civilian jurors voted and 59.5% supported resuming construction while 40.5% opposed it. Ultimately, after three months of public comment and 33 days of deliberation the committee recommended the government to resume construction of Shin-Kori 5 and 6 [9].

It is necessary to discuss social controversy and citizen participation in this contentious issue. Since different public opinion polls offered different figures, it is challenging to determine the percentage of citizens that agreed with the government's claims. In June 2018, the Hyundai Research Institute reported that 84.6% of respondents supported the government's energy policy, while 12.3% opposed it. Additionally, 67.8% of respondents supported the phase-out of nuclear power, while 10.4% preferred its expansion (Hyundai Research Institute, 2018). The Korea Nuclear Society's 2019 survey found that 71.4% of respondents supported nuclear power, while Gallup's 2020 survey found that 66% of respondents supported it (Maeil Business News, 2020a). Therefore, it's uncertain if the majority of people supported the phaseout of nuclear power. The correlation between the frequency of earthquakes in Korea and public awareness of the safety of nuclear power facilities was evident. For instance, following the massive earthquake in Pohang in November 2017, 58.2% of respondents expressed doubts about the reliability of nuclear power facilities and recommended that the government demolish them in favor of expanding the use of renewable energy sources [8].

Dismantling of Kori Unit 1, Woolsong Unit 1, the second nuclear power plant which for the past 40 years has faithfully played its role as the driving force behind Korea's economic development in the history of nuclear energy of Korea. It operated with an excellent utilization rate of 86.2% on average.

Moreover, the expenses associated with closure of Kori Unit 1 were estimated. The total cost of decommissioning a nuclear power plant was estimated at 440 trillion won. After the final shutdown of Kori Power Unit 1 on June 18, 2017, the decommissioning of the Gori NPP took place in three stages: removal of spent nuclear fuel, cooling and safety (more than 5 years), decontamination and dismantling of facilities and structures (more than 8 years) and restoration of the territory (more than 2 years). It will be implemented consistently and will take more than 15 years after permanent suspension [10].

Professor Jeong Beom Jin of Kyung Hee University explained the loss in electricity bills due to the cancellation of construction of Units 1 and 2 is estimated at 265 trillion won. Moreover, delays in the construction of Shin-Kori Reactors 5 and 6 resulted in a loss of more than 100 billion won and he cited economic facts, saying that the losses from the nuclear power phase-out policy exceeded 1,000 trillion won [11].

As soon as South Korea began to shut down and reduce the operations of its nuclear power plants, South Korea swiftly shifted its focus towards the development of alternative energy resources, which caused subsequent processes and issues.

A large number of solar panels have been installed at farms in accordance with the 3020 Plan. Furthermore, after the salinity of the soil was determined, coastal agriculture was converted to solar panel fields. This land cover change has sparked conflicts between solar energy developers, landlords, and farmers. Yujin Lee, a researcher at the Green Transition Institute and the former Co-Chairperson of the steering committee of Green Party Korea, claims that Renewable energy has low energy density compared to nuclear power or coal. Farmers are becoming increasingly concerned that the installation of solar energy plants may threaten food security since solar panels have been placed on agricultural land. Due to changes in land usage, Korea's agricultural land has already been fast declining, and the country's overall food self-sufficiency rate is just around 49%. There is growing discord between the energy and agricultural interest groups, despite the lack of social or political agreement on how to combine the expansion of renewable energy sources with the needs of food security [12]. As a result of the unreasonable promotion of solar energy, environmental pollution due to the deterioration of forest reservoirs and waste solar panels is becoming more and more serious. [13].

There are main explanations for Korea's low output of renewable energy. One is explained by geographical obstacles: deep ocean shelves make it difficult to place offshore wind turbines, and there isn't enough flat ground for solar panels. The second one is the cost factor: the infrastructure needed for renewable energy sources is still more expensive than that of fossil fuels and current nuclear production [14].

The biggest problem that has hampered the expansion of renewable energy in the past few years is regional conflict caused by damage to mountainous areas and habitat impacts that have occurred during the development of solar and wind energy. Accordingly, an increasing number of local governments are passing their own ordinances restricting the deployment of solar and wind energy, and the government is also tightening licensing procedures and regulations related to renewable energy sources [15].

Public opinion in the country swung in favor of nuclear power plants due to problems with energy supply on hot days that arose in the summer of 2018.

According to the Electric Power Statistics Information System (EPSIS) the country saw its hottest summer in 111 years, which increased domestic energy consumption to 72,895 gigawatt hours (GWh), up 6.3% from 68,544 GWh recorded the year before. The record high temperatures in South Korea in 2018 led people to turn on their air conditioners for extended periods of time, which resulted in an all-time high in the country's household electricity use.

Many of the respondents who in one way or another supported nuclear energy during the survey motivated their decision by mistakes made by the government when forecasting maximum energy consumption [15].

"The government underestimated the maximum demand for electricity in the summer of 2018. There is no guarantee that it can correctly predict future needs," explained one of the survey participants who spoke out against the early closure of nuclear power units. The South Korean government admitted to making "minor errors" in forecasting electricity needs but did not intend to abandon plans to reduce nuclear power plants [16].

In 2018, the cost of generating electricity from a nuclear power plant reached 62 won per kWh, 83 won from coal, 123 won from LNG, and 179 won from solar and wind power, making it inevitable that electricity tariffs will increase due to increased costly power generation [13].

For the past 20 years, Korea's average annual electricity usage has been gradually rising. Based on KEPCO data, per capita consumption was only 5.1 MWh in 2000, which is half of the 2018. Others explain the increase in consumption by pointing out that the country's electricity prices are lower than those of other OECD members.

Although the amount of power consumed is increasing, the yearly report from Nuclear Energy Data indicates that in 2016 nuclear energy accounted for 31.5% of all electricity generation; however, by 2018, that percentage had decreased to 6% [17].

Table 2. Nuclear power share of total electricity production in South Korea in percentage (%)

2016	31.5
2017	30.7
2018	25.5
2019	26.8
2020	25.9
2021	29.0

Source: compiled by the author from OECD data

Besides issues that were mentioned previously, the energy transformation policy of the Moon Jae-in administration has reached a diplomatic impasse due to agreements which were made earlier. Specifically, controversy began to arise in December 2017, immediately after the completion of the Kori public debate, when Lim Jong-seok, Chief of Staff of the Blue House, was urgently dispatched as a special envoy to the United Arab Emirates (UAE). The Liberty Korea Party, which was the opposition party at that time, said that the UAE government lost trust due to the Moon Jae-in government's contradictory behavior of pursuing a nuclear-free energy transition domestically, but still exporting nuclear power plants abroad [7].

Economist of Seoul National University stated, that promoting South Korean reactor technology abroad while phasing out nuclear power at home is a sign of government incompetence and policy inconsistency, as a result, South Korea risks missing out on a rare opportunity to become a leader in the energy market of the future [18].

Doosan Heavy Industries & Construction Co. Since 2020, it has been trying to cope with a liquidity crisis that could cause a series of bankruptcies in the supply chains of equipment for nuclear power plants and undermine South Korea's position in the global nuclear market. Doosan Heavy was left virtually without work after the South Korean government decided in 2017 to stop building new units and gradually close existing units. Plans to build blocks at the Daejin and Yeongdeok sites were scrapped. Before the change in government policy, Doosan Heavy assumed that at least six more nuclear power units would be built in South Korea, which would bring the company orders worth more than $8 billion. Between 2017 and 2020, Doosan Heavy laid off about 1,000 employees and also halved its management team. Industry experts complain that the possible collapse of Doosan Heavy means the loss of South Korea's reputation in the nuclear industry, built up over the past 50 years [19].

The South Korean organization KAIF (Korean Nuclear Industry Forum) has prepared a report stating that the policy taken to abandon nuclear power has resulted in a loss of orders over the past two years totaling more than 7 trillion won (more than $5.7 billion).

Negative dynamics in nuclear orders appeared immediately. In 2017, sales fell 13% from the previous year, it was the first time since 1995. In 2018, the decline continued (-14% compared to 2017). In addition, the volume of investment in the nuclear industry of South Korea has also decreased. Thus, in 2018, their total volume amounted to 7.89 trillion won, which is 3.8% less than in 2017. Against this background, a trend has emerged towards a reduction in the number of workers employed in the industry (-2% in 2018).

Already today, companies such as Doosan Heavy Industries & Construction and KEPCO are facing financial difficulties. The latter, in particular, announced an operating loss of 1 trillion won, the largest since 2008. The harmful effects of the nuclear phase-out policy had led to the destruction of the nuclear industry and the loss of jobs [19].

People opposed to the nuclear phase-out, including nuclear experts, scientists and environmental groups, came together to speak out against the injustice of the nuclear phase-out policy. Members of the Nuclear Policy Center of Seoul National University, Professors of Kyung Hee and KAIST Universities, Engineers of Korean Hydro and Nuclear Energy and General Secretary of the Environmental Movement [11].

A press conference held in front of the Blue House, dedicated to an appeal to the public about the injustice of the policy of abandoning nuclear energy, lies about the unsafety of nuclear power plants and an appeal to future generations. The phasing out of nuclear power plants has many side effects, such as the loss of skilled labor, rising electricity tariffs, disruptions in energy supply and demand, damage to forests and environmental pollution.

Contrary to the justification for building a safe and clean energy system, the outflow of highly skilled workers actually threatens human safety and increases emissions of greenhouse gasses and fine dust [13].

Since the imposition of the nuclear phase-out policy, the country's hard-fought status as having the world's best nuclear power technology is diminishing due to the drain of high-quality human resources. Regenerative energy production fluctuates between extremes depending on the weather.

Conclusion

At the beginning of the atomic era, Korea developed its technological workforce, carried out fundamental research in nuclear science and technology, and became aware of the fundamental ideas behind the technical and scientific processes that underpin nuclear energy and its uses. South Korea is regarded as having one of the most successful civil nuclear power programs in the world with a fully developed supply chain, an impressive track record of building and operating nuclear power plants.

Besides issues that were mentioned previously, the energy transformation policy of the Moon Jae-in administration has reached a diplomatic impasse due to agreements for the construction of nuclear reactors abroad. Promoting South Korean reactor technology abroad while phasing out nuclear power at home caused confusion and many questions from the nuclear experts, scientists and environmental groups.

Decision of dismiss thousands of employees at companies such as Doosan and KEPCO that suffered heavy losses due to the reduction of nuclear energy led to protests. Since the imposition of the nuclear phase-out policy, the country's hard-fought status as having the world's best nuclear power technology is diminishing due to the drain of high-quality human resources.

Therefore, this paper suggests focusing on the beneficial sides. The current phase-out policy should be changed into a long-term plan that emphasizes a greener and more sustainable electricity mix while preserving the competitive edge of the Korean nuclear industry through domestic and international contracts.

In the future, the government should place a high priority on developing a balanced energy portfolio that involves renewable energy sources along with nuclear power plants and maintain economic competitiveness and energy security. Industry participants need to work together to develop innovative ideas, make investments in sustainable technology, and adapt to global energy trends.

The world is constantly changing, and Korea is able to adapt and innovate new ways to meet its needs.

Contribution of the authors.

Kozhakhmetova Z.A. – collection and analysis of materials, compilation of a scientific article in accordance with the requirements, collection and analysis of theoretical materials;

Myong S. – definition of the goals and objectives of the scientific article, work with the use of research materials and methods.

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Мун Чжэ Ин әкімшілігі кезіндегі ядролық энергия саясатының өзгерістері және Оңтүстік Кореяның энергетикалық экосистемасына әсері

Аңдатпа. Мақала Оңтүстік Кореяның Мун Чжэ Ин әкімшілігі кезеңіндегі ядролық энергия саясатындағы қарышталған өзгерістерді және олардың энергетикалық индустрия экожүйесіне әсерін корей ресми жаңалықтар сайттарынан алынған ақпаратты талдау арқылы қарастырып, сонымен қатар ядролық және жаңартылатын энергияның экономикалық өсу мен көміртегі шығарындыларына тиімділігін салыстырады. Жаңартылатын энергияны ядролық энергияның орнына басымдыққа алған жаңа саясаттың жүзеге асырылуы, ядролық энергияның Кореяның электр энергиясының 40% құрайтынына қарамастан, корей қоғамын ядролық электр станцияларына қарсы және қолдайтын топтарға бөлді.

Бұл зерттеу 2017 жылдан 2022 жылға дейінгі кезеңде Мун Чжэ Иннің ядролық энергия саясатын жүзеге асырудың салдарларына назар аударады және осы саясаттың теріс әсерлерін азайту үшін мүмкін болатын шешімдер ұсынады.

Қорытындылай келе, Мун әкімшілігінің ядролық электр станцияларының құрылысын тоқтату және жабу саясаты нәтижесінде ядролық энергия индустриясының экожүйесіне мамандардың кетуіне әкелді. Сонымен қатар, күн сәулесінің панельдері сияқты жаңартылатын энергияны дамыту Кореяның қоршаған орта мен климат шарттарына сәйкес келмеді және экологиялық ластануға себеп болды.

Жаңартылатын энергияны кеңейтудің теріс әсерін ескере отырып, мақала ядролық энергия индустриясына бұрынғы инвестицияларды қайта қарауды және жасыл энергия мен атом энергиясының пропорциясын Кореяның климаттық ортасына сәйкес келтіру үшін түзетуді ұсынады.

Түйін сөздер: Оңтүстік Корея, Мун әкімшілігінің энергетикалық саясаты, энергетикалық индустрия экожүйесі, жаңартылатын энергия.

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Изменения в политике ядерной энергетики во время правления Мун Чжэ Ина и их влияние на экосистему энергетической отрасли Южной Кореи

Аннотация. Статья анализирует стремительные изменения в политике в области ядерной энергии при администрации Мун Чжэ Ина в Южной Корее и их влияние на экосистему энергетической отрасли, анализируя новости с корейских официальных новостных сайтов, а также сравнивая эффективность ядерной и возобновляемой энергетики с точки зрения эко-номического роста и выбросов углерода. Реализация новой политики, которая приоритизи-ровала возобновляемые источники энергии вместо ядерной, которая составляет 40% произ-водства электроэнергии в Корее, разделила корейское общество на сторонников и противников ядерных электростанций.

Это исследование сосредоточено на последствиях реализации политики Мун Чжэина в области ядерной энергии в период с 2017 по 2022 год и предлагает возможные решения для минимизации негативных последствий этой политики.

В заключение, политика администрации Муна по остановке и закрытию строительства ядерных электростанций привела к ущербу экосистемы ядерной энергетики из-за утечки специализированных кадров. Кроме того, продвижение возобновляемой энергии, такой как солнечные панели, не только не подошло для корейской среды и климата, но и вызвало экологическое загрязнение.

Учитывая негативное влияние расширения использования возобновляемой энергии, исследование предлагает вернуться к предыдущим инвестициям в ядерную энергетику и разумно скорректировать пропорцию зеленой энергии и ядерной энергии, чтобы она соответствовала особой среде Кореи.

Ключевые слова: Южная Корея, энергетическая политика администрации Мун, экосистема энергетической отрасли, возобновляемая энергия.

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