



국제학석사학위논문

North Korean Energy Crisis and Its Impact on National Security A Historical Analysis from 2012–2018

북한 에너지 위기가 국가 안보에 미치는 영향 2012-2018년도를 기점으로

2023년 2월

서울대학교 국제대학원

국제학과 국제협력전공

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이 논문을 국제학 석사학위논문으로 제출함

2023년 2월

서울대학교 국제대학원 국제학과 국제협력전공 최 제 현

최제현의 석사학위논문을 인준함 2023년 2월

위원장	<u> 신 성 호</u>	(Seal)
부위원장	문 경 연	(Seal)
위 원	김 태 균	(Seal)

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Abstract

North Korean Energy Crisis and Its Impact on National Security A Historical Analysis from 2012-2018

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This paper explores the impact of the North Korean energy crisis on national security from 2012 to 2018. The North Korean energy crisis is a critical problem affecting national security. Many studies focus on North Korea's nuclear security where diverse approaches for cooperation with North Korea are needed. On the other hand, alternative energy, such as solar and wind energy, continued to be securitized from 2012 to 2018, influencing North Korea's development agenda. Therefore, this paper examines how North Korea imprinted energy as security through North Korea's official newspaper Rodong Sinmun and to what extent the international agenda influenced its development plan. A trend analysis of energy securitization shows that North Korea pursued its development plan aligned with the international trend. Therefore, this research on North Korea's various energy sources is expected to be an effective foundation for future engagement with North Korea. **Keywords:** North Korea Energy Security, International Cooperation, Sustainable

Development

Student Number: 2020-29164

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I. Introduction

North Korea has always suffered from deepened energy crisis and has proven to the international community the need for support. In the past, North Korea heavily relied on energy assistance from China and the Soviet Union. The 1990s energy crisis and the withdrawal of Soviet and China's bilateral foreign energy assistance due to their contention on hard currency for the crude oil payment, the relations remain disrupted.

1991 marked the year when North Korea faced an economic crisis. Cease of the Russian crude oil supply led to a suspension of food supply, halting industrial activity and disease creation, creating a substantial economic shock. Such human security crises quickly escalated to political and security emergencies. North Korea focused heavily on nuclear weapons as a negotiating chip to overcome the problem that escalated from the internal low energy supply. As a result, domestic energy insecurity became more problematic.

Energy imports dropped to 75% in comparison with the previous years of 1991 as North Korea relied heavily on China for energy imports. China provided preferential treatment to North Korea. However, as China suspended conventional preferential treatment in 1991, North Korea no longer gained support, and energy shortage became a critical internal issue. China's energy suspension led to food shortages, and North Korea even initiated a campaign of eating two meals a day.¹

The economic situation quickly worsened due to the lack of energy supply. The GNP difference between 1990 to 1991 was 0.2 billion dollars, as in 1991 was 22.9 billion dollars and in 1990 23.1 billion dollars. GNP dropped by 1.8 billion

¹ Shin, Dong Ho (2020).

dollars in 1992, resulting in an annual report of 21.1 billion dollars. In 1993, 0.6 billion dollars were lowered to 20.5 billion dollars, quickly dropping the economic growth to $4.3 \ \%^2$

The exacerbated economic system became an immediate threat to domestic governance with unstable food and energy supply. Amid heightened famine, North Korean citizens still hold the trust and loyalty of the Kim II Sung regime. Hence, complaints and reports to the government for international support were often turned down. Global support was halted, and aid supplies were primarily used as luxury goods and supplies to the Kim family.

The humanitarian aids were given chiefly to North Korea to increase the food supply. However, aids were spent on growing military capacity. Aids were fungible and not used for the desired target of elevating hunger and starvation of its citizens. In such an economic downturn with extreme food and energy shortages, internal problems were securitized. Economic issues could no longer be solved within the country. The country needed outside assistance.

The economic crisis continued to be a critical problem for North Korea, especially during an arduous march from 1994 to 1998. However, North Korea is a totalitarian state where its people praise the goodness of the regime. Despite the citizens' suffering, such internal problems were difficult to be problematized unless the government saw a problem as an immediate threat.

According to Brus and Laski, an economic crisis from a socialist country can escalate into a regime crisis, as an economic downturn means a lack of military support, leading to insecurity and instability of the state.³

² Kim, Dal Joong and Lee, Suk Soo (2000).

³ Brus, Wlodzimierz and Kazimierz, Laski (1989).

Under the country's fragile economy, a downturn in 1994 was directly related to energy capacity. A concrete action was taken. North Korea's energy insecurity came to the surface as it gave up its nuclear capabilities through the Agreed framework in 1994. The framework indicates that a non-ordinary security matter such as energy can result in action. The domestic matter of energy shortage was viewed as an imminent security matter that led to a suspension of its nuclear power program. Although the promise broke in later years, concrete action was made, which securitization of an internal energy issue is significant for analysis.

With the economic downturn, energy fragility emerged as a significant security problem. From 1998 to 2002, international cooperation efforts collapsed to resolve energy shortages. From 2003 to 2008, North Korea's policy shifts to gain energy support and recognize the importance of new renewable energy. Although the country still relied on nuclear energy from 2009 onward, the country participated in following the international trend of Millennium Development Goals (MDGs) and expanded the usage of renewable energy sources in the domestic agenda.

Energy shortage continues until this date with the continued nuclear threat to the international community, and scholars view having nuclear capabilities as the only viable way to maintain the regime. Perspective towards North Korea as an irrational and mad actor shapes the country's actions merely as violent and aggressive. Although the nuclear threat presents itself and the fear exists, the international community perceives the threat to an extent where new approaches for cooperation with North Korea are almost not surviving. However, internal securitization of a non-typical variable of security, 'energy,' can lead to different perspectives on analyzing the country's action.

Energy has continuously been highlighted and securitized within its

domestic agenda. As scholars focused on a single conceptual framework cannot converse with other scholars with different paradigms, "they literally 'see' different things. Paradigms act as scientific selection mechanisms which decide what are significant prior to analysis taking place."⁴ Thus, viewing the country's behaviors outside of the regular security realm is important. scholars demonstrate 'energy' as a non-regular security realm can be a key factor. This paper seeks to look at the security problem of North Korea from a different perspective, shifting the extensive focus from nuclear security to energy security.

This study aims to historically analyze North Korea's verbal actions under the 'securitization theory' framework from 2012 to 2018. The process of internal energy securitization represents specific areas of energy significance. Thus, I will analyze the energy securitization process annually to understand the pattern and importance for the seven-year period. The years are selected as a phase for key analysis to recognize the periodic trend prior to North Korea's international engagement in submitting the Voluntary National Review (VNR). North Korea participated in the VNR for the first time at the High-Level Political Forum (HLPF) on July 13th, 2021, postponed from 2020 due to Coronavirus disease. The VNR report demonstrates the country's internal challenges and experiences implementing the Sustainable Development Goals (SDGs).

North Korea integrated the UN SDGs into its national agenda and development goals from the global norm, emphasizing energy. Hence, this research analysis will set directions of how energy, a non-regular security variable, has escalated to the national security agenda, consequently leading to international

⁴ Smith, Hazel (2000).

participation.

This paper is organized into five parts. Section II is a literature review of previous studies on energy security in North Korea and its behavior toward international cooperation. The third section demonstrates North Korea's energy discourse in the VNR report. The fourth section of the study presents the analytical framework for research along with the research question. Section V explains the overview of North Korea's energy situation and historical analysis from 2012 to 2018 on internal energy securitization. Section VI provides a comprehensive analysis of the trend significance from the Rodong Newspaper. The last section, the conclusion, encompasses the overall finding of the research.

II. Literature Review

Precious literature on security studies shows how a non-regular variable emerged as a security issue. In the 2011-2016 national security policy in Philippines Politics, security is distinguished as a separate field. The country has coalesced two terms to conceptualize political goals, recognizing the issue as a threat. A shift of political maneuvering with the Maguindanao Massacre shows that an unprecedented political problem has risen as an imminent security issue, signifying a non-regular security variable can quickly escalate to a core issue.⁵

More specifically, concerning energy studies, many scholars acknowledge that the research on the energy sector is insufficient. Oil and electricity are core areas holding back the North Korean economy. International sanctions restricting crude and refined oil increased interest in North Korean energy. Even though

⁵ Peleo, Amador IV (2015).

energy is an important sector of the North Korean economy, the research is inadequate.⁶

With sufficient studies lacking, Lee points out that energy security transformed over time. The concept of security expanded after the post-cold war era shifting from low politics to high politics. European Coal and Steel Community's case shows how components of high politics are signified rather than low politics of promoting regional stability and participation in Germany's European integration process. Hence, Lee emphasizes that a high political approach is necessary for effective cooperative energy development between East Asian countries.⁷

As the need for a high political approach to energy security is outlined, Doh shows that interruption to the energy supply result in energy security disturbance. The four major failure factors are physical damage, economic damage, social damage, and environmental damage. Hence, achieving energy policies should be considered within four diverse factors to be implemented well. Also, the effects of energy on national security are classified into three: energy supply security, economic security, and energy security. This classification helps conceptualize a structure that assists all factors of a specific energy problem to be considered comprehensively without marginalization.⁸ In the context of North Korea, energy has significant economic damage with an impact on all classified factors.

⁶ Kim, Kyung Sol (2021).

⁷ Lee, Jae Seung (2005).

⁸ Doh, Hyun Jae (2003).

Moreover, KEIA (North Korea and the Northeast Asian Energy Equation) displays the need for a "broad-based multilateral yet regional, security framework evolving in Northeast Asia by the six-party process."⁹ Such a framework can provide an essential role in engaging with North Korea. As North Korea's greatest energy need is energy planning development, resource management, and substitute energy development, alternative energy planning provides significance within the country.

With the significance of a high political approach to energy and cooperative energy development, the domestic publication from the "Kyowon Sonjon Suchop," re-starting from 2000, shows DPRK's willingness to incorporate an international mindset. The journal emphasizes its people's psychological and motivational goals, highlighting scientific development and globalization. In the journal, implementing a global mindset in their domestic agenda through introducing psychology from 2000 in increasing numbers hints at the country's willingness for possible future international participation. The journal indicates how the international influx of information has influenced the domestic agenda, foreshadowing the country's changing behavior towards international participation.¹⁰

Previous literature on the securitization of security studies centralizes on regular security issues such as military, economic, and intelligence security. In North Korea, the nuclear threat is perceived as the most preeminent threat. However, the Copenhagen School proposed securitization theory, which shows different objects to threats. Threats are perceived and framed, moved from the regular political debate

⁹ Calder, Kent E. (2005).

¹⁰ Kim, Kyoungmi (2019).

to emergency political issues, and viewed as existential threats.¹¹

Copenhagen school conceptualizes security outside the conventional realm and includes societal, economic, and domestic political issues, extending from military issues. A new concept is portrayed as a social procedure through speech acts in which threats are acknowledged and represented.¹²

The main component of the securitization theory is that the referent object, a variable that is threatened, is diversified. In the post-cold war era, the referent object included the state and expanded to individuals and different social groups as an object for security. A state can now provide a threat to its citizens. Moreover, the Copenhagen school divides security into four sectors: society, economy, politics, and environment. In other words, such four sectors are equally significant and recognized as threats.

Security is an outcome of a 'speech act,' which is a behavior that people within the society identify as a threat. Securitization is how originally non-security issues such as economy, society, environment, and politics transform into critical security issues.

Increased verbal usage of words that appeared in the North Korean domestic Newspaper, such as energy, electricity, renewable energy, and green energy, from 2012 to 2018 illustrate how energy became a variable that could lead to another security threat. In other words, energy continuously challenged domestic actions. What is interesting in this analysis is that security outside the regular realm allows scholars to view national issues from a diverse perspective.

¹¹ Buzan B.G., Wæver, O. and De Wilde, J.H. (1998).

¹² Buzan B.G., Wæver, O. and De Wilde, J.H. (1999).

As the significance of energy securitization is outlined, Imhoff and Bruce signify that DPRK should rebuild its economy peacefully by transforming the energy and mineral sector to support economic growth. Despite non-accurate data from North Korea, the decision-makers have an engagement dilemma. Rehabilitation and development of energy are impossible without foreign assistance. The authors suggest three ways of engagement to an efficient cooperative project, ensuring light water reactor and helping the growth of mineral sectors.¹³ Imhoff and Bruce acknowledge that despite the engagement dilemma that exists with data trustworthiness, foreign assistance towards energy is necessary for rehabilitation.

Existing literature emphasizes the need for further studies on North Korea's energy securitization. North Korea has been securitizing various energy variables with behaviors towards international participation observed. Despite the significance of the study, yearly specific historical analysis is insufficient. Limited access to North Korean data resulted in insufficient studies. However, North Korea made a concrete verbal action of submitting VNR, showcasing their status on the implementation of SDGs to the international public. Such action shines a light on hope for alternative approaches to cooperation with North Korea. Hence, a historical analysis from 2012 to 2018 of the growing significance and transformation of energy within North Korea's domestic Newspaper, deserves attention for possible future international engagement.

¹³ Imhoff, Arabella and Bruce, Scott (2011).

III. North Korea's Energy Discourse in the VNR Report

North Korea conducted the Voluntary National Review (VNR) to report the country's status of the 2030 agenda of SDGs implementation and share it with the international community. North Korea's VNR is significant as it indicates its willingness for global participation. VNR encompasses reviewing challenges, experiences, and lessons in implementing the SDGs. North Korea wanted to submit in 2020 but had to postpone their joining due to coronavirus disease, finally submitting on July 15th of 2021, to the high-level political forum (HLPF) in New York. HLPF is held annually under the United Nations Economic and Social Council (ECOSOC), one of the six principal organs of the United Nations, centering on sustainable development. UN conducts VNRs which become a foundation for the reviews done by the HLPF. One hundred forty-four countries participated in conducting VNRs, and North Korea submitted the review in 2021.

The VNR report shows North Korea's objectives in implementing SDGs as the country showcased its national priorities by aligning with 17 goals and 95 targets. Such targets include energy, sanitation, hygiene, water, and agriculture, reflecting "53% of the global SDG target."¹⁴

The VNR report has a significant impact on its domestic agenda. North Korea integrated the international norm into its development plan to develop the Great Socialist Nation. The country thoroughly reviews strategies for implementing SDGs in its annual report, displaying its focus, needs, and resources for global support. Moreover, VNR has become an essential tool in assessing North Korean economic condition as the 4th nuclear test in 2016 and Covid-19 heightened

¹⁴ Choi, Gyubin and Hong, Jea Hwan (2021).

sanctions from the global community and challenged engagement with North Korea.

How North Korea accommodated the SDGs is shown in its governmental implementation, especially in building the 2016-2020 five-year plan. The initiating year of the UN SDGs and the DPRK five-year plan is 2016, which is, interestingly, the same year. North Korea delivered its VNR preparation processes at the North-East Asian Multistakeholder Forum (NEAMF) twice, aligning domestic priorities with the international agenda.

The country put effort into forming consultative bodies to uphold the SDGs internally. DPRK promotes 'Our style SDGs,' integrating SDGs into their national framework. The NDGs focus is reinforcing the people's government, developing areas of education and science, and constructing a self-reliant and resourceful economy under a socialist society.¹⁵

To uphold the SDGs promises of including all and for an enhanced monitoring system, the government established the National Task Force for Sustainable Development (NTF). NTF is accountable for localizing global targets of SDGs and systemizing the implementation of SDGs in 6 technical committees. NTF established the country's national SDGs and set specific targets and indicators. TC, constituted by the Central Bureau of Statistics, utilizes the national statistical system to measure indicators to be reported to the NTF. Under the system of NTF with TC support, North Korea implemented and monitored the SDGs.¹⁶

¹⁵ Choi, Gyubin and Hong, Jea Hwan (2021).

¹⁶ Ibid.

Figure A lists six categories of TC. Since Energy is signified as a primary target for development, I will focus more on how North Korea incorporated and emphasized the energy sector in its domestic agenda.

6 Technical Committees (TC)
Socio-demography
Science and Education
Public Health and Water,
Sanitation, and Hygiene
Economy and Energy
Environment and Ecosystem
Disaster Risk Management

Figure A. 6 Technical Committees

Under 6 TC, 'Economy and Energy is a central focus element. DPRK's National Development Goals (NDGs) framework incorporate UN SDGs ensuring implementation. For target 7, 'Affordable and Clean Energy,' the SDG is to "ensure access to reliable and modern energy for all." In contrast, the NDG "ensures access to sustainable and modern energy."¹⁷ Under the domestic agenda, "for all" and "reliable" is omitted but "ensure access to sustainable energy" is included. DPRK will not be able to ensure access to sustainable energy for all citizens realistically. However, North Korea will focus on developing 'sustainable energy, which is more

¹⁷ DPRK, Democratic People's Republic of Korea Voluntary National Review on the Implementation of the 2030 Agenda (2021).

potent and specific than 'reliable energy.' The country increased verbal usage of 'sustainable' and 'renewable' in the North Korean Newspaper, including the active introduction of hydro, thermal, and renewable energy. Surprisingly, renewable energy appeared 43 times in 2016, the first year of North Korea's 5-year plan, signaling that not just words but domestic actions followed with introducing renewable energy development strategies.

Moreover, the survey result on energy demand conducted from 2015 to 2019 by the UNDP Sustainable Energy Solutions for Rural Livelihoods in DPRK, assessing 15 communities, shows a severe energy supply shortage.¹⁸ The result, listed as the key specifics under goal 7 in the VNR report, is that the population with lowered access to electricity is "97.6%," with a much lower index in the rural areas. Decreased access to electricity amidst an increased population expresses a need for augmented power generation. In other words, renewable energy generations such as thermal, hydropower, wind, and solar power are critical in the country's power supply. North Korea's announcement to the international community through the VNR report has political significance, especially as energy is becoming a critical variable that deserves attention.

¹⁸ DPRK, Voluntary National Review (2021).

IV. Analytical Framework

1. Securitization

Securitization has been traditionally identified in a military context. Security, on the other hand, is presented in a broader agenda, including politics, social, economic, and environmental security. Broadening the scope allows different types of referent objects to emerge, escalated, and confirmed through speech acts. Speech act enables a variable or an issue to come up to a surface as an existential threat.

The speech act is identified as "by saying the words, something is done, like betting, giving a promise, naming a ship."¹⁹ Speech acts, in other words, mean that words establish reality, not merely portray reality, and trigger relative responses. Threats exist in physical form but are also made and escalated through speech. Hence, it is crucial to focus on how the specific language has facilitated the actor to convince the audience of the threat.

This study will concentrate on the historical process from January 2012 to December 2018 on how North Korean energy fragility is 'securitized' through speech acts domestically. Such historical analysis will further be expanded to find a correlation between energy fragility and international participation.

¹⁹ Buzan B.G., Wæver, O. and De Wilde, J.H. (1998).

Analytical Framework



[Securitization Process]

Speech Acts ➡ Securitizing Moves ➡ Security Practice ➡ International Participation

The independent variable in the framework is 'Energy Fragility,' and the dependent variable is 'International Participation'. Domestic energy fragility is a referent object which is securitized by the securitizing actor, the North Korean regime. The process of securitization is analyzed through North Korea's physical and speech acts from 2012 to 2018 and will be broken down into each year's securitizing moves through speech acts, leading to security practice, and triggering international participation.

The Rodong Newspaper is a working agenda, meaning the exposure within the paper is interpreted as a national agenda. Hence, the North Korean Newspaper database is used for a keyword input analysis. The following keyword is inserted: "Energy". Terms are counted as one, including the multiple usages of the word within the same context. Keyword input analysis is taken in each month every year from 2012 to 2018 which the data was collected and added to be measured as a total appearance in an annual term. Then, the five most appeared terms were selected every year within the research period to be portrayed on a graph to identify energy significance through trend analysis.

A keyword input analysis will address the overall importance of energy in North Korea internally and what kind of alternative energy sources have been signified within the country. Such data sets are used to see the pattern and relevant impact on its domestic actions, further leading to international participation. Key events will also be analyzed yearly to measure how speech acts have transformed into securitizing moves. After the domestic trend is recognized, it will be compared with North Korea's VNR data to see to what extent its domestic trend follows the international trend.

2. Research Question

The current trends in viewing North Korean security issues rely heavily on the nuclear threat. However, North Korea utilized the international target of SDGs, aligning its national development goals. Analyzing the country's speech acts illustrates how North Korea continuously securitized energy insecurities domestically and allowed itself to participate in the international trend by publishing the VNR report.

Thus, I will answer this question: How is a securitization of North Korea's energy insecurity from 2012 to 2018 significant in its participation in the international trend?

3. Hypothesis

H1: Trend analysis of energy securitization shows that North Korea is onboarding with the international trend.

- A non-participant of the world to accept the International trend is meaningful.
- A self-reliant economy and system are fragile.

H2: The process of North Korea domestic energy securitization provides areas for relevant future cooperation.

- Key term exposures in the North Korean Newspaper highlights

the main areas of the country's fragility for future global support.

Thus, the key term analysis of the Rodong Newspaper is significant in showing the securitization process for relevant global support and is meaningful that the non-cooperative global participant follows the international trend.

V. Historical Analysis of Energy Insecurity: 2012-2018

1. Overview of North Korea's Energy Situation

2011 North Korean Domestic Energy Consumption Evaluation lays the framework on the domestic energy consumption level.

Figure B. North Korean Energy Consumption Comparison: 1985 to 2011



Evaluation of Energy Consumption in 2011 Compared to 1985 in North Korea

Korea Energy Economics Institute, 2013

The chart above shows that the 2011 Domestic energy consumption is 1,711 thousand TOE, which accounts for less than one-twelfth of the consumption amount of South Korea.²⁰ In other words, North Korea spends 7.9% of South Korean usage domestically. The green graph on the left is the overall consumption, which is low compared to the 1985 consumption in the blue graph in the center. The red graph on the right shows how much energy spending is lacking compared to 1985. The chart

²⁰ Kim, Kyung Sol (2013).

explains why the energy is continuously appearing and securitized in the Rodong Newspaper.

2. 2012 Rodong Newspaper Analysis:

Early Phase of the Renewable Energy Development

Leap program (Long-range Energy Alternative Planning) appeared in September 2012 of the North Korean White Paper *Rodong Sinmun* and was accentuated as a long-term energy plan. The program is labeled as a total environmental, economic, and energy supply and demand modeling tool.²¹ Leap is an international standard developed by the Stockholm Environmental Institute Boston, which was already utilized as a measuring tool in South Korea in 2000. Leap is used as a mock evaluation of a physical, economic, and environmental business activity. Hence, the country can strategically plan to estimate the energy demand so that future supply plan is carefully implemented.

A writer is a researcher from a North Korean scientific institution who proclaims that LEAP, when used correctly, can provide scientifically driven strategies towards powerful nation-building, which is their top priority as a national development goal. As North Korea always prioritizes self-reliance, showing the importance of utilizing external sources to evaluate and develop its energy plan can illustrate two meaningful implications. First, the internal development system is fragile or facing insecurities; Second, North Korea is onboarding with the international system to gain assistance globally. Both implications can lead to the conclusion that external ideological involvement is comparably valued over internal

²¹ Rodong Sinmun (2012).

energy development infrastructures.

Also, in a news article in the white paper written on an international tourism day on September 27th, 2012, a journalist writes on the theme of the day, fostering renewable energy development. Pinpointing that energy is a fundamental source that creates human development, the article shows that developing new energy sources is a prominent issue for the world and its own country. North Korea classifies itself as a self-proclaimed world tourism organization member state. It portrays that the country strives toward cooperation and cultural exchange with world citizens as it could enrich a wealthy and civilized culture for its people.²²

As the paper suggests, North Korea shows that interactions with the international arena are a critical source that enriches the people of its own. In a closed country like North Korea, for the government to proclaim outwardly that such cooperative behavior is impactful for its people is significant. Such a non-regular participant of international citizens like North Korea has onboarded with the trend with the world, allowing the outward ideologies to influence them internally. Moreover, the country's outbound approach can show that *Jaryeokgaengsaeng*, a self-reliant economy of North Korea, is hindered. Additionally, North Korea proclaims a solution to the energy crisis is tourism, opening the country in a partial term. Proclaiming that tourism is critical for energy cooperation and renewable energy development, North Korea admits that internal insecurity is growing.²³

Moreover, North Korea submitted its second climate change national report to the UN Framework Convention on Climate Change, covering climate change responses, including the country's greenhouse gas inventory. A relevant action

²² Rodong Sinmun (2012).

²³ Ibid.

demonstrates how the internal speech acts have turned into security practice, prompting concrete action of submitting the responses.

In October 2012, Kim Jong II acknowledged that scientific problem exists and that developing solar, wind, and new energy is critical. Linking energy development as a key to scientific solutions, such a claim shows that alternative energy source development is a prominent factor in scientific development.

In developing alternative energy sources, North Korea highlights the importance of building a vinyl greenhouse at the science and technology recital that occurred from November 28th to 30th. Through building greenhouses, North Korea proudly proclaims success in growing unfertilized cucumbers suitable for the country's climate. The reporter added that resolving the light problem is critical to maintaining greenhouses development. Moreover, to reduce the overall production price for utilizing and sustaining vinyl houses, geothermal, solar, and wind energy is highly recommended.²⁴ As it started with the success story of the new technology of green vinyl houses, the country signifies the need to resolve the energy problem by developing alternative energy sources. Energy security becomes the fundamental stepping-stone in farming and using 'developed,' in their term farming methods such as Vinyl house building. Agriculture plays a critical role in the early stage of economic development, and electricity security is significant in achieving the country's national development goal of self-reliance. Successfully utilizing and saving energy for solving science and technology problems are repeatedly shown throughout the articles, highlighting the importance of new energy sources such as solar and wind energy development.

²⁴ Rodong Sinmun (2012).

In addition, green energy was arranged in line with economic security. Green energy is also called green economy, showing North Korea is referring to achieving energy security in the same line as attaining economic security. Green energy development is yet to be accomplished due to its high price and lack of infrastructure. However, green energy development is a promising business in the country.

North Korea praises China's success in energy savings. China is enthusiastic about solving energy problems. China is a top energy-generating country with remarkable success in non-fossil energy development. Relying on savings and internal energy sources and strengthening international cooperation are successful factors that led to improving the well-being of its citizens.²⁵

Moreover, *The Renewable Energy Development Plan* within China's 12th five-year plan shows how a similar path can be taken for North Korea. Renewable energy is continuously signified within the country's internal sources as case studies of China, Malaysia, Iran, and Kenya successfully utilizing renewable energy are showcased internally, referring to the UN's data. DPRK shows the success cases of the outside countries and indicates North Korea's renewable energy development is still in the process due to the lack of scientific technology. Although not directly showing the improvements of the domestic plan or energy agenda, the delivery of successful cases of external renewable energy that North Korea is in the initiating phase of involving international influence as the country is actively seeking outside methodologies for energy development.

²⁵ Rodong Sinmun (2012).



Figure C. Renewable Energy Term Analysis 2012-2018

Surprisingly, the key term analysis of renewable energy from 2012 to 2018 in Figure C depicts how 2012 to 2015, the trend is slightly upward, signaling the growing importance of renewable energy. However, from the year 2015 to 2016, the graph peaked as 2015 was the year when North Korea prepared to participate in the SDGs implementing the 2030 Agenda since September 2015. In other words, domestic verbal acts increased within their domestic agenda for international participation. UN SDGs have been integrated into their National Development Goals (NDGs) to achieve a Great Socialist Nation and the 5-year economic plan.²⁶

²⁶ Choi, Gyubin and Hong, Jea Hwan (2021).



Figure D. Key Energy Terminology 2012

As continuous new energy sources are highlighted, Figure D Key Energy Terminology (2012) is significant as the most appeared energy source is 'solar energy. It appeared 23 times in 2012, followed by terminologies of 'energy saving' and 'peaceful use of nuclear energy. Solar energy is one of the easiest ways to get electricity as installing domestic solar panels is relatively inexpensive and does not require advanced technology. International charity groups have also installed solar panels as part of their humanitarian work. Chinese businessmen are reported to have sold more than 80 to 90 percent of their solar panels to the domestic market of North Korea. "Reports say solar panels are widely available in North Korea. According to Reuters, small 20-watt panels can be purchased for \$44 on the black market in the North."²⁷ Solar Energy, seen as a speech act that appeared the most in the domestic newspaper, escalated to the security practice of North Korea purchasing solar panels from China and distributing them in the domestic market. Continuation of speech acts and alternative energy expansion are inevitable for the development survival of the regime.

North Korea projects that the country values peace more than anyone else, but they do not beg for peace when their national sovereignty and survival rights are threatened.²⁸ What does national sovereignty mean for North Korea? It is to keep loyalty to the leadership. Suppose there are threats to the administration and their survival rights. Then, the country will not be begging for peace, meaning offensive behaviors can be taken, such as unexpected attacks on their neighboring countries.

North Korea will instead pursue methods to keep its national sovereignty. Lessened threat to the regime's survival and finding ways to assist is crucial in upholding its survival rights. Also, the country proclaims energy, military capabilities, and population were primary factors in assessing the power of governments. Still, such factors should not be the ultimate elements in evaluating the power of a nation.²⁹ Especially Energy is a critical variable that the domestic system faces challenges for development. In other words, North Korea's current standards are difficult to be achieved. Putting the burden on the international trend depicts North Korea's willingness for global participation. On the other hand, the country is utilizing external standards to avoid its problems of energy insecurities as shown through its development actions. Hence, as insecurities continue to grow and

²⁷ Kim, Se Jeong (2015).

²⁸ Rodong Sinmun (2012).

²⁹ Ibid.

there are no internal solutions, the country will likely seek outside methods and assistance to solve its inner insecurities. Diving deep into the country's weakness shows that internal struggles of energy insecurities are growing.

3. 2013 Rodong Newspaper Analysis:

Rising Significance of Nuclear and Wind Energy Development

In 2013, North Korea passed a law facilitating the usage of renewable energy. More specifically, the country proclaimed that wind power usage will increase by 10% annually and foreign taxes would be reduced to invite overseas companies for wind energy development. Also, after the third nuclear testing of 2013, a repeated assertion of green, renewable energy, including wind energy, continued.



Figure E. Wind Energy Term Analysis 2012-2018 — Wind Energy

Figure E shows the keyword input analysis of wind energy, which portrays

the reality of the aftermath of the law passing of renewable energy from 2013 to 2014. The number continued to grow and hit a peak in 2014 with 21 times appearances. In North Korea's VNR report, the wind resource map and wind resource browsing system were introduced in 2014, which 2013 was the phase in preparation for the launch of relevant systems.

North Korea emphasized food insecurities, and the deterioration of the ecological environment by stating that the world is facing an energy crisis in January 2013. Creating solutions to save and effectively use solar, wind, and new energy sources is crucial. After accentuating alternative energy sources, North Korea highlights that developing nuclear fusion energy to escape the energy crisis is critical due to its cheap, robust, safe, and clean nature as evident in Figure F.³⁰



Figure F. Key Energy Terminology 2013

³⁰ Rodong Sinmun (2013).

The Key Energy Terminology of 2013 shows that nuclear energy development appeared 18 times, including nuclear fusion energy, nuclear energy (peaceful use), and nuclear energy development. Along with wind energy significance, the country heavily makes a speech on the peaceful utilization of nuclear energy.

Interestingly, before the third nuclear testing, North Korea's White Paper on February 2nd demonstrates a growing interest and trend in global energy development. Directly linking nuclear energy to the development of electricity, North Korea signified that the reason for continuous nuclear development is to obtain electricity support. Also, the newspaper pinpoints the reason for continuous nuclear energy development as a result of a man-made reckless Fukushima nuclear disaster. The newspaper reported, "objectively, there are no realistic alternatives to replace the production of energy by nuclear power in the current term."³¹ After such a claim, the author added that permanent energy development for renewable energy sources such as water, solar, wind, geothermal, raw materials, and ocean energy is needed. The significance of nuclear and renewable energy speech acts came at the same time in the year of 2013 to convince the audience as a threat to its own country, securitization of the already existing nuclear threat overwhelmed the energy factor.

Although there were efforts to continue projects related to new renewable development, a lack of scientific technology and monetary support are stumbling blocks in reality. For such reasons, North Korea portrays the importance of nuclear energy development despite the same year's actions of wind energy development. As nuclear and wind energy are verbally active and physically developing internally,

³¹ Rodong Sinmun (2013).

assistance for wind energy development can be a strategic trade-off for nuclear deterrence.

4. 2014 Rodong Newspaper Analysis:

Energy Insecurities, Water, and Solar Energy Development

In 2014, North Korea demonstrated that the most urgent and critical problems that the country face are food and energy. Further claiming if energy issues are not resolved, it would be shameful for domestic scientists and technicians. The newspaper reporter highlights that scientists and engineers should maximize the power generation capacity of 'hydroelectric' and 'thermal' power plants and work on solving technological problems to complete power plant construction at a high-quality level in a short period. The country focuses on utilizing and maximizing the values of existing power plants internally without placing a new investment in renewable energy. Even though the country continuously shows the significance of alternative energy sources, the reality is to save. They put their term in Korean, "the realistic way to achieve maximum effect with the least investment in the shortest period is to save energy." ³² Continuous proclamation of how severe energy insecurity is within their domestic agenda depicts if the country is seeking help as the energy issue is unsolvable.

³² Rodong Sinmun (2014).

Figure G displays the country's perception of energy insecurity, shown through the speech act. The peaks were established in 2014 and 2017. In 2014, as savings were highlighted within the country, verbal actions increased. Also, in 2017, when the sanctions rose with the halting of international assistance to North Korea, internal energy fragility was revealed. However, the numbers that appeared are not high compared with other energy variables, foreshadowing how North Korea does not want to show that the country is fragile in the form of speech. In other words, North Korea does not want *Jaryeokgaengsaeng*, a self-reliant economy, to be hindered.



Figure G. Energy Insecurity Term Analysis 2012-2018

Energy insecurity

In September 2014, a shortage of water resources in the world led to a lack of energy resources. Experts argue that producing clean water requires a considerable amount of energy. Producing energy also requires lots of water. Water shortages can lead to a lack of energy. In the world, hydro resources account for a considerable part of guaranteeing energy.

Moreover, a large amount of water is used as cooling water in other energy production processes, including thermal power plants. Under these conditions, the energy production sector will inevitably be affected if water resources decrease. With such a point of view, various international organizations and experts predict that the relationship between water and energy will become a global concern.³³

North Korea, within its domestic issue, discusses sustainable development. Green energy or architecture is becoming a global trend to provide a civilized and sustainable living environment. Recognizing the seriousness of the lack of earth's resources, North Korea followed the global trend of saving and reducing environmental harm. Green architecture reduces both spending and environmental deterioration. Although focusing on green architecture is majorly for protecting the country's capital, recognizing the international trend as a non-participant of the global community is significant.

In November 2014, the reporter highlighted that the desperate need of today is electricity as the economy rapidly develops internationally. However, the world faces severe power shortages. The world is actively expanding projects to accommodate electricity demand through developing solar, wind, renewable, and nuclear energy. Quoting the reports from the International Energy Agency, "solar

³³ Rodong Sinmun (2014).

energy could become the world's largest source of electricity by 2050".³⁴ North Korea connects its domestic issue with the international problem.

Securitizing energy problems through speech acts describes how a nonparticipant of the international actor continues to showcase themselves to the world by conducting security practices, further connecting to the solar heating system. Solar PV technology was developed in 2014, according to the VNR reports. The rise in the trend of solar energy in verbal acts is also shown in the Figure H graph on solar energy has a positive slope from 2014 to 2016.



Figure H. Solar Energy Term Analysis 2012-2018

Solar Energy

³⁴ Rodong Sinmun (2014).

A positive slope indicates that when sanctions were imposed after the 2013 nuclear testing, solar energy development continued to rise. The rising slope indicates that the weighted development of nuclear energy was insufficient to suffice the domestic need for energy. In other words, lack of electricity support is crucial to the lives of the people where developing alternative energy is inevitable. Increased appearance in the Rodong Newspaper shows that domestic need is strategically promulgated to the international community for technical development assistance, which can lead to a meaningful trade-off of reducing nuclear energy development with an essential supply of solar energy development tools and panels.

5. 2015-2016 Rodong Newspaper Analysis:

Heightened Sanctions and Adoption of the International System

In February 2015, Kim Jong-un made a speech. 'Energy saving' is described as the manifestation of patriotism. Patriotism cannot be measured in size.³⁵ Kim exemplifies Vietnam, a country that put forward renewable energy development as the most preemptive project in its national strategy. To meet the sizeable domestic energy demand by 2030, Kim says that the country needs many energy sources. Researchers believe that "an average of 13-15% per year increase of renewable energy should be developed."³⁶

Stating the case of Vietnam and its achievement goal of 2030, the target year for achieving sustainable development goals, North Korea continues to demonstrate how the outsider of the international society is aligning their domestic goals to the

³⁵ Rodong Sinmun (2015).

³⁶ Ibid.

global promise.

In August 2015, North Korea highlighted that the International Energy Agency has set a goal to reduce greenhouse gas emissions by 2100 since the global average temperature is predicted to increase by 2.6 Celsius. As a result, in many countries, there is a growing movement to utilize natural energy, a wholesome resource to meet the demand for energy without affecting the human body and the earth's ecological environment.

In December 2015, North Korea accentuated that preventing global warming is essential as it is an increasingly severe problem that acquires billions of people to work together to protect it. The effort to prevent global warming is an active movement worldwide. Activities to protect the environment are being strengthened by reducing greenhouse gas emissions.

In many countries, utilizing natural energy, including solar, wind, and tidal power is a trend toward ensuring the demand for energy that causes no environmental pollution. In urban construction, buildings that reduce heat consumption as much as possible are encouraged, such as the construction of solar energy and energy-saving houses. Green space will also be built based on population density, in which cooperation between countries is strengthened.

As much as North Korea accentuates the world trend of utilizing natural energy, increased term appearance also depicts the country following the trend of natural energy significance.

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Figure I. Natural Energy Term Analysis 2012-2018

2015 was the year the UN adopted the SDGs. Figure I above delineates how the term natural energy continued to rise and hit its peak in 2016. The term natural energy appeared 85 times, reaching the second highest peak from the overall graph, indicating that in the year, 2015, when North Korea decided to prepare to cooperate with the VNR report, an international trend also appeared in the domestic agenda, influencing their domestic development agenda.

The drop from 2016 to 2017 appears in decreasing number of Natural Energy from 118 to 61, expresses that the internal significance of utilizing natural energy radically reduced in 2017 due to heightened nuclear testing and international sanctions towards North Korea. Ironically, 2016 was the year when nuclear testing and natural energy term exposures intensified, as shown in Figure J.



Figure J. North Korea's Missile Launches 1984-2022

CFR Research, 2022

Physical and verbal action stretch to opposite ends of each other, meaning that natural energy can be a crucial bargaining chip in negotiations with North Korea. DPRK continues to highlight increasing the proportion of peaceful nuclear power generation to meet the national demand for electricity production, adding that countries worldwide will further strengthen peaceful nuclear energy development to overcome power shortages.³⁷ Cooperation with DPRK can start with recognizing the internal fragility and finding solutions for a relative trade-off or support.

Moreover, North Korea underlines *The United Nations Climate Change Conference* in Paris, France, as the conference aims to adopt a new international framework for reducing greenhouse gas emissions after 2020. The conference is seen

³⁷ Rodong Sinmun (2016).

positively for the planet's future, admitting that there could be disagreement between some countries over the difference in historical responsibilities and implementation of greenhouse gas emissions reduction.

Admitting the seriousness of the issue, North Korea uses a firm wording that greenhouse gas emissions must be reduced. Emphasis on how the international responsibility is the country's responsibility clarifies that greenhouse gas emissions reduction is a key to human survival. North Korea further adds that turning one's back on the greenhouse gas emissions issue for fear of losing economic benefits is imprudent. North Korea acknowledges international issues as its issues. In other words, domestic agendas are influenced by the global agenda. The first greenhouse gas emission reduction plan was introduced in 2016 in DPRK and planned from previous years. According to the VNR report, the plan foresees that a total of "15.63% greenhouse gas emission reduction below the level of normal economic activities" will be seen, given international help.³⁸ As envisioned in the verbal speech, the country readily applied the international plan to its domestic agenda.

The domestic agenda hugely takes account of strategic measures of the SDG framework. In September 2016, North Korea emphasized that economic development and stable development of the society are impossible not to consider during the current times in any country, adding that struggles for energy resources are raging. It is essential to establish energy strategies to meet each country's situation and conditions. A key to success is in the hands of the country's people. Surprisingly, the domestic strategy is aligned with the international development goals. Strategic alliance shows the intention for the country's ownership in affiliating

³⁸ DPRK, VNR (2021).

the development agenda based on the needs of North Korea. By 2017, 52% of the measurement indicators for the 2016-2020 five-year plan are related to the SDGs and the Multiple Indicator Cluster Survey data.³⁹

Energy saving was inevitable during the years 2015 and 2016. Escaping from energy insecurities was a driving factor for North Korea as economic sanctions from the U.S. to North Korea tightened due to the continuous development of nuclear weapons. Multi-focus on saving energy and taking ownership of a global concern on greenhouse gas emissions is paradoxical as North Korea's greenhouse gas emissions by global standards are minuscule in comparison with other countries. North Korea is acquiring attention from the global community as a sustainable development partner, inevitably admitting that *Jaryeokgaengsaeng* is hindered. International participation is unavoidable and the neighboring countries' actions should centralize on providing a yearly specific development strategy targeting natural energy.

6. 2017-2018 Rodong Newspaper Analysis: Significance of Hydropower Development

North Korea continues to accentuate in its propaganda that saving is a source of increased production and happiness in which savings will lead to the enrichment of people. Savings cannot be considered separately from scientific development since savings will increase the efficiency of economic growth. Savings also refer to domestic energy savings. The chart below demonstrates how the overall growing trend is shown with keyword analysis of 'Energy saving' input to the Rodong Newspaper in Figure K.

³⁹ DPRK, VNR (2021).



Figure K. Energy Saving Term Analysis 2012-2018

The continued increase of the graph from 2012 to 2017 also indicates scarce energy sources and a limited influx of energy. In other words, energy saving is inevitable. The years 2016 to 2018 hit the peak in energy saving significance. In 2017, 'energy saving' appeared 93 times, with continued relevance 78 times in 2018 in term appearance. Saving was highlighted in January 2017 as the first agenda of the year, along with new power resources to solve the electricity problems. The top two peak points of 2017 and 2018 for energy saving indicate that the best method of developing science and technology is often to convert the country's economy to energy-saving development. The survey data on energy demand also indicates the worsened North Korean energy crisis. Under the UNDP SES project in 2017, rural areas' access to electricity is low, meaning power generation is decreasing compared to the increasing population.⁴⁰

Low access to electricity and growing sanctions resulted in the country focusing on saving and maximizing internal resources. UN Security Council's sanctions tightened from late 2016 to 2017 as an international reaction to the 5th nuclear test in November 2016 and the 6th in September 2017. UN limited exports of minerals, agriculture, helicopters, and restricted oil imports. As sanctions from the UN towards North Korea grew from the late 2016s, DPRK focused on internal saving of energy sources. Energy saving is critical for the country's economy. The government also emphasizes the active development of alternative energy sources such as hydro, thermal, and wind energy.

⁴⁰ DPRK, VNR (2021).

Especially during 2017 and 2018, hydropower research projects have been actively promoted. As shown in Figure L, the construction of large and mediumsized water powerplants continued to develop to utilize the country's abundant hydropower resources.



Figure L. Hydropower Term Analysis 2012-2018

Hydropower is the primary source of electricity production a significant number of hydroelectric power stations are developed during the era of Kim Jong Il. Huichon Power Station generates 300,000 kilowatts, fulfilling the power needs of the country's capital city Pyongyang. Huichon became a representative symbol of North Korea's achievement. Kim Jong Un continued with the project after assuming office in 2012. However, there were setbacks due to construction and climate impacts as a continued power station problem. Extreme cold weather impacted water flow by slowing turbine speeds affecting the overall electrical output.⁴¹

In 2014, Kim Jong Un changed the energy production plan to build small to medium-sized stations in the Chongchon area to fulfill the local needs to ensure continued water supply, leading to abundant electricity output. The significance is also seen in 2014. The Hydropower term appeared 6 times in Rodong Sinmun, which is the second highest point of the graph. A total term appearance is comparably lower to broader energy terms such as renewable and natural energy. However, since hydropower is a specific energy source, the trend still indicates importance. Hydroelectric power continued to appear and develop throughout the New Year's Speeches from 2015 to 2017. A highlight and rise in 2018 in the graph are shown as Kim asserted an area-specific power generation during the address in the same year, narrowing the scope to target a small-sized population. The world bank data tracking SDG 7 indicates that access to electricity for North Korea's rural population has grown from 55.4% in 2017 to 60% in 2018, reaching up to 63.1% in 2019, indicating the success of the strategy shift of impacting local communities.⁴²

A continued significance of hydroelectric power and action of shifting strategies from constructing large power plants to medium and small sized plants and finally to area-specific minor power plants to target people from the regions.

Hydropower significance is also recognized in SDG 7. Goal 7 is "to ensure access to affordable, reliable, sustainable and modern energy for all."⁴³ Hydropower accounts for the above criteria of affordable, reliable, sustainable, and modern energy, affecting individuals of the 1.3 billion population lacking energy sources. DPRK's

⁴¹ Makowsky, Peter, Town, Jenny and Pitz, Samantha (2019).

⁴² The World Bank (2020).

⁴³ The United Nations, SDGs (2015).

reduction of hydroelectric power plants size from large to area-specific construction resembles the purpose of specified targets of SDGs to widen access to hydropower energy. Previously in MDGs, 'energy access' has been disregarded. However, such a measure is signified in SDGs from 2015. Interestingly, North Korea also narrowed down the scope of the hydropower plant construction project from 2014 to 2018, targeting regional sectors to increase the impact on more individuals.⁴⁴ Moreover, hydropower research projects have been actively promoted in 2017 and 2018 regarding 'energy access,' following the targets of the SDGs.

Hence, DPRK's internal onboarding process with the SDGs targets compared with the MDGs with the hydropower plant construction in North Korea indicates two key significances. First, North Korea accepted the international trend for it to influence its domestic actions. Second, hydropower can be an area of focus for future cooperative support as DPRK shows continued significance with strategy alterations in-line with the SDGs.

⁴⁴ International Hydropower Association (2015).

VI. Comprehensive Analysis: Rodong Newspaper 2012-2018

Comprehensive implications relate to North Korea's VNR and domestic economic development plan. A keyword input analysis addresses the overall importance of energy in North Korea internally and what kind of energy resources have been signified within the country. The self-reliant economy and system of DPRK are fragile and specific areas for possible future cooperation are notified. A pattern of securitization from speech acts to security practice is seen from 2012 to 2018. However, key energy variables' relevant impacts on its domestic actions, further leading to international participation still is an opportunity. Hence, increased international participation can be seen when North Korea is given support on specific domestic energy targets.

The purpose of Rodong Newspaper analysis from 2012 to 2018 is to show that the securitization of North Korea's energy insecurity is significant in its participation in the international trend. Key term analysis demonstrates the securitization process from speech acts to security practice, consequently leading to international involvement.

First, North Korea continued to imply the international trend into their domestic agenda, repeating key energy variables that are signified in the SDGs such as 'Renewable,' 'Energy Saving,' 'Energy and Cooperation,' 'Solar Energy,' 'Wind Energy,' 'Alternative Energy,' and more. DPRK continued to engage with the international system, such as using the LEAP program and submitting the second climate change national report to the UNFCCC. The country is willing to take external measures to influence its domestic agenda. Continued repetition of

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wordings and references to the international system shows that North Korea expanded its systematic approach under the long-term strategy within the global framework. This goes back to my first hypothesis:

H1: Trend analysis of energy securitization shows North Korea is onboarding with the international trend.

- A non-participant of the world to accept the international trend is meaningful.
- North Korean energy development system is fragile.

North Korea following the international trend is highlighted, especially in the 2016 Five-year plan frequently appeared in Rodong Newspaper. Kim Jong-un accentuates building a sustainable economy by solving energy issues under the plan. Kim highlights that resolving the energy problem is a prerequisite for implementing the five-year economic development strategy and increasing people's lives. Power plant improvement and expanding new and renewable energy are significant implementation measures emphasized throughout the Newspaper.

Nuclear energy has been a key energy source in North Korea, whereas renewable energy development appeared equally important in terms of energy development. In other words, when nuclear energy was almost 100% of the focus of development, currently the percentage shifted from 60% of nuclear development to 40% of renewable energy development. The rising significance of alternative energy development demonstrates that North Korea's internal energy development system is fragile. *Jaryeokgaengsaeng*, a self-sufficient economy, is hindered.

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Hence, seeking an outside development agenda to incorporate into its domestic system is inevitable.

Key term exposures throughout 2012 to 2018 show specific targets for possible energy cooperation in the future, which can be traced back to my second hypothesis with followed analysis:

H2: The process of North Korea's domestic energy securitization provides areas for relevant future cooperation.

- Key term exposures in the North Korean Newspaper highlight the country's main areas of fragility for future global support.

In 2012, 'solar energy' and 'renewable energy' were majorly highlighted with increased domestic verbal acts on energy as case studies of diverse countries' development strategies appeared for future implementation. The graph on renewable energy shows the increased appearance from 2015 to 2016, foreshadowing that SDGs implementation became a turning point for the North Korean development plan. 'Solar energy' as the most apparent speech act in 2012 led to the security practice of the country purchasing solar panels from China and international charity groups to be distributed in the domestic market. Speech acts quickly escalated to security practice overpassing securitizing moves. When an energy variable is securitized domestically, actions follow and securitization in North Korea can occur in multiple energy variables. However, in 2012, international participation is yet to be seen.

In 2013, the key highlights were the 'peaceful use of nuclear energy' and 'renewable energy', especially on wind energy. A focus on the peaceful use of

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nuclear development to obtain electricity support continued throughout 2013. It was the year of the 3rd nuclear testing, with 8.2% of total alternative and nuclear energy usage, mostly accounting for building nuclear resources.⁴⁵ As a result of testing, UN Security Council imposed sanctions (Resolution 2087) against North Korea. When nuclear tension was heightened in 2013, renewable energy was also signified through speech acts. The term appearance of renewable energy is higher (12 times appearance) compared to the peaceful use of nuclear energy (11 times appearance). Opposite energy variables led to securitizing moves as if the sanctions became a stimulus for renewable energy emphasis in North Korea. However, only nuclear weapons led to security practices with the physical action of the 3rd nuclear testing. According to the VNR report in 2014, the year after increased speech acts of renewable energy, a hybrid renewable energy power station was piloted. Hence, timely support from the international community in assisting the country's development of yearly specific energy needs based on speech acts can result in a different outcome, possibly leading to changing the behavior of DRPK on international cooperation.

In 2014, 'energy insecurity,' 'green architecture' and 'solar energy' were signified through speech acts when energy insecurity sets the framework that a self-reliant economy of DPRK is hindered. 'Green architecture' or green construction is one of the prior national development agendas under Goal 12, "ensuring sustainable consumption and production according to the VNR."⁴⁶ Green architecture is a global trend to provide a sustainable environment. 'Solar energy' emerges in the newspaper in a rising slope up to 2016. The term appeared in the VNR report with

⁴⁵ The World Bank (2020).

⁴⁶ DPRK, VNR (2021).

the active development of Solar PV technology in 2014 under Goal 3 which is "to ensure healthy lives and promote well-being for all."⁴⁷ Green architecture is in the phase of securitizing moves, whereas solar energy, one of the prominent sources of renewable energy in North Korea, is undergoing a phase of security practice. 21.23% of renewable energy consumption was seen in 2014, according to the world bank data in DPRK, indicating that significant trade-offs such as solar heating technologies or solar panels with nuclear weapons can be possible in the future. In other words, alternative energy sources under the relevant development agenda can be a bargaining chip for energy cooperation with North Korea.

From 2015 to 2016, 'natural energy' and 'nuclear energy' were highlighted. 'Natural Energy' continued to rise and hit its peak in 2016, with 118 times appearances with the second highest peak of 85 times in 2015. 2015 was the year that VNR, North Korea signified the development of natural energy to meet international standards. The same year when natural energy was signified, nuclear testing intensified shown through the CFR research of North Korea's missile launches. Physical action and verbal actions stretched to the opposite side. Also, nuclear energy is linked with peaceful nuclear power generation to meet the national demand for electricity production. However, the data on electricity production from nuclear sources in percentage is not reported through the world bank data, meaning that there is no accurate proof that North Korea is utilizing nuclear power as a source of electricity production.⁴⁸ Also, the data on primary electricity production in North Korea, nuclear energy in billion kWh data provides no electricity according to the U.S. Energy Information Administration, indicates

⁴⁷ Ibid.

⁴⁸ The World Bank (2020).

how natural energy can be a key driver for continued energy support.⁴⁹ Although the securitization of 'natural energy' processed to securitizing moves, the physical action of nuclear testing overrides the significance of 'natural energy' assistance. Hence, with physical actions, verbal actions need to be carefully analyzed so that the international community can act on different strategical approaches.

From 2017 to 2018, 'energy saving' and 'hydropower' were signified. 'Energy saving' appeared 93 times with a continued significance of 78 times in 2018 in term appearance. Saving is highlighted in January 2017 as the first agenda of the year as a speech act to solve electricity problems. The UNDP SES project of 2017 indicates that rural areas' power generation is decreasing in comparison with the increasing population. As sanctions from the UN towards North Korea grew from the late 2016s, DPRK focused on internal saving of energy sources. DPRK's focus on shifting the national economy to energy saving economy as a priority plan depicts the transition from securitizing moves to security practice, announcing goals to the international community. North Korea also narrowed down the scope of the hydropower plant construction project from 2014 to 2018, aligning specified targets of SDGs. Compared to MDGs, regional sector objectives heighten the impact on local individuals.

Moreover, hydropower research projects have been actively promoted in 2017 and 2018 with the security practice of constructing minor power plants. 'Energy saving' is an immediate securitize issue for North Korea, demonstrating domestic energy fragility. 'Hydropower' indicates that North Korea accepted the international trend and influence its domestic actions. Hence, hydropower can be an

⁴⁹ Energy Information Administration (2022).

area of focus for future cooperative support as DPRK shows continued significance with strategy alterations in-line with the SDGs.

When the international community identifies North Korea's needs based on its securitization process, cooperative projects or support should target the specific energy sector. In other words, a solution to the energy crisis is linked with seeking outbound answers to solve internal problems.

VII. Conclusion and limitations

North Korea's energy crisis is securitized through speech acts involving the international trend. A trend analysis of the data from 2012 to 2018 illustrates yearly significant energy variables compared with the VNR report. Such analysis proves that a self-reliant system is fragile, and a non-participant of the international system is accepting the international trend. Since North Korea's energy support has downturned due to heightened international sanctions, yearly specific energy securitization analysis provides areas of support needed for cooperative international engagement. Previous studies focus heavily on halting the nuclear threat; thus, any kind of energy assistance is not feasible. However, energy shortage is securitized and results as a significant cause of internal insecurity. As past studies are highly focused on the negative side of energy support, this research contributes to finding a nexus between North Korea's energy securitization and engagement with the international community. The VNR report and the North Korean development plan undergoing security moves to security practices suggest that North Korea is immersing global behaviors, increasing the possibility for future international cooperation.

Throughout the research, there were some limitations. Rare data sets and North Korean data verification with specified energy usage were challenges for identification. However, North Korea's international participation is an appealing topic in international cooperation. More studies in this area are essential to devise country-specific and need-based assistance to engage with North Korea in the future. Hopefully, my findings will support international decision-makers for alternative engagement methods with North Korea.

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Appendices















North Korea Energy Term Significance 2012-2018

Top Energy Variables	2012	2013	2014	2015	2016	2017	2018
Solar Energy	23	13	22	34	42	33	40
Energy Saving	13	9	15	31	70	93	78
Green Energy	10	3	7	6	0	12	7
Energy and Cooperation	9	0	1	1	4	0	4
Renewable energy	8	12	17	16	43	19	22
Nuclear Energy (peaceful use)	13	11	3	3	9	1	2
Wind Energy	9	7	21	17	13	9	19
Energy	3	40	29	33	26	24	64
New Energy	4	9	5	3	5	24	4
Natural Energy	2	0	31	85	118	61	72
Light Energy	1	1	0	53	0	1	1
Energy insecurity	1	1	4	3	3	4	1
Green Energy	10	3	7	6	0	12	7
Hydropower	0	0	6	3	3	4	7

Abstract in Korean

북한 에너지 위기가 국가 안보에 미치는 영향 2012-2018년도를 기점으로

최제현

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본 논문은 2012년부터 2018년도까지 북한 에너지 위기가 안보에 미치는 영향에 대하여 연구하고자 한다. 북한 에너지 위기는 국가 안보에 영향을 미치는 중대한 문제이다. 지금까지의 많은 연구는 북한의 핵 안보에 초점을 맞추고 있어 북한과의 협력을 위한 다양한 접근법이 제시되어야 하는 상황이다. 그러나 태양 에너지와 풍력 에너지와 같은 대체 에너지는 북한의 개발 의제에 영향을 미치면서 2012년부터 2018년까지 지속해서 안보화 되었다. 따라서 본 연구는 북한의 기관지인 '로동신문'을 통해 북한이 어떻게 에너지를 안보의 일종으로 각인 시켰는지 알아보고, 그중 국제사회의 의제가 북한의 발전 계획에 어떠한 영향을 미쳤는지 살펴본다. 내부 에너지 안보화 동향 분석 결과에 따르면 북한은 국제적 흐름에 맞춰 개발 계획을 추진한 것으로 나타난다. 따라서 북한의 다양한 에너지에 대한 연구는 향후 대북 관계에 많은 도움을 줄 수 있는 토대가 될 것으로 기대한다.

핵심용어: 북한 에너지 안보, 국제 협력, 지속가능발전

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