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Political Viability of the Russia-North Korea-South Korea Gas Pipeline Project: An Analysis of the Role of the U.S.

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Abstract: This study analyzes the political viability of the Russia-North Korea-South Korea (RNS) gas pipeline project. This analysis demonstrates that North Korea's fourth nuclear test in January 2016 changed the dynamic of the project. Before the test, when inter-Korean relations were good, South Korea and Russia could make efforts to secure political support for the project. However, after the fourth nuclear test, this was no longer the case. As North Korea's nuclear power status became more evident, this nuclear problem began to have profound implications for U.S. security. In response, Washington not only led the UN Security Council to impose very severe sanctions against North Korea, but also placed its own sanctions on the country. These sanctions began to contain provisions that could prevent the implementation of the pipeline project. In addition to these sanctions, the U.S. sanctions against Russia in 2017 over its intervention in the U.S. election and aggression against Ukraine also contained clauses that could hamper it. Therefore, unless the U.S. lifts or eases all of these sanctions, South Korea and Russia are unwilling to take any concrete actions to secure political support for the RNS pipeline project. Based on this analysis, this paper argues that the U.S. now holds the most important key to its political viability.

Keywords: gas pipeline; Russia; North Korea; South Korea; inter-Korean relations; U.S.; UN; sanctions

1. Introduction

With his inauguration in May 2017, South Korean President Moon Jae-in began to carry out energy transition policy aimed at promoting safer and cleaner energy. Two factors largely explain this transition policy. First, the 2016 earthquake in Gyeongju, around where many of South Korea's nuclear reactors are located, raised public concern about nuclear safety. Second, the problem of fine dust, which became a huge social issue, necessitated a need for more environmentally friendly energy. Naturally, a critical element of the transition policy was to decrease the use of nuclear energy and coal while increasing the use of natural gas and renewable energy.

The 8th Basic Plan for Long-Term Electricity Demand and Supply (BPE), approved around seven months after Moon's inauguration, excellently demonstrates this change. According to this plan, the share of nuclear energy in electricity production will decrease from 30.3% in 2017 to 23.9% in 2030, and the share of coal-fired power will decrease from 45.4% to 36.1% during the same period. In contrast, the share of natural gas and renewables will increase during the same period. The former will increase from 16.9% to 18.8% and the latter will increase from 6.2% to 20% (See Table 1).

To be sure, the increase of 1.9% in the share of natural gas is smaller than expected, especially given that Moon Jae-in as a presidential candidate pledged to increase its share by approximately 20% by 2030. However, the volume of future natural gas demand is likely to increase more than the mere increase of 1.9% suggests, largely because the total electricity consumption is expected to increase by around 14.3% from 2017 to 2030 [1].

Table 1. South Korea’s electricity generation mix to 2030 [1].

Year	Nuclear	Coal	Gas	Renewables	Others
2017	30.3%	45.4%	16.9%	6.2%	1.3%
2030	23.9%	36.1%	18.8%	20.0%	1.1%

The increase in the volume of future natural gas demand becomes clearer when we compare the 13th Long-Term Natural Gas Demand and Supply Plan (NGP) with the 12th NGP. One of the biggest differences between these two plans is that the former reflects the 8th BPE. Comparing the two plans is not easy because they differ in terms of the base year and end year. However, we can roughly compare future gas demand under the two different plans. As Table 2 shows, gas demand in 2029 under the 12th NGP is 34.65 million tons (47.12 billion cubic meters (bcm)), whereas gas demand in 2031 under the 13th NGP is 40.49 million tons (55.07 bcm). Even if we take into account a two-year difference in terms of the end year between the two plans, future gas demand under the 13th NGP is much larger than that of the 12th NGP.

Table 2. Gas demand projections under the 12th Long-Term Natural Gas Demand and Supply Plan (NGP) and the 13th NGP (million tons) [2,3].

Year	12th NGP (December 2015)	13th NGP (April 2018)
2015	33.70	-
2018	-	36.46
2029	34.65	-
2031	-	40.49

It was in this context that the Moon administration sought to revive the Russia-North Korea-South Korea (RNS) gas pipeline project that had been discussed on and off since the late 1980s. President Moon expressed on numerous occasions his interest in building the gas pipeline. For example, in his telephone conversation with Russian President Vladimir Putin shortly after the inauguration, President Moon indicated that he would attempt to implement the pipeline project [4]. This interest was expressed again when Moon gave a speech at the Eastern Economic Forum held in Vladivostok in September 2017. Noting that South Korea’s New Northern Policy and Russia’s New Eastern Policy are connected, he proposed that the two countries lay “nine bridges” for the pursuit of cooperative projects including the gas pipeline project [5].

This study analyzes the political viability of the RNS gas pipeline project. It proceeds as follows. The second section provides an analytical framework and discusses the data sources. The third section presents background information. In particular, it discusses various factors that affect the position of the three concerned states—South Korea, Russia, and North Korea—on the gas pipeline project. It then scrutinizes its political viability by relying on the analytical framework. Based on this analysis, this paper argues that the U.S. now holds the most important key to the political viability of the pipeline project because it cannot move forward unless the country lifts or eases its own sanctions against North Korea and Russia as well as several UN sanctions against North Korea. The final section concludes the study and provides policy implications.

2. Materials and Methods

2.1. Analytical Framework

2.1.1. Importance of Political Support

This study first justifies why it analyzes the political viability of the RNS gas pipeline project. In their work on cross-border pipeline projects in the Caspian region, Chow and Hendrix argue that their successful implementation requires the following four “ingredients”: major dedicated volumes

of oil and gas, a committed and capable “commercial champion,” the economic viability of pipeline projects, and political support [6].

Among these four “ingredients”, this study focuses on analyzing political support for one main reason. The discussion of cross-border pipeline projects usually starts with an economic interest. This discussion, however, cannot proceed further in politically sensitive areas unless it first secures political support. The importance of this political support was best evidenced in the TAPI gas pipeline project traversing Turkmenistan, Afghanistan, Pakistan, and India. After numerous negotiations with the backing of the U.S., the four concerned states made substantial progress in securing political support for the TAPI pipeline project. This was most clearly epitomized in December 2010 when the four states signed an intergovernmental agreement to build the TAPI pipeline. The signing of this intergovernmental agreement paved the way for the signing of a gas sales and purchase agreement in May 2012. In this way, the TAPI project moved from the stage of political discussion to the stage of commercial discussion [7]. It must be stressed that this move does not necessarily guarantee its successful implementation. However, without it, the project has no chance of being implemented.

This explains why several cross-border pipeline projects in politically sensitive areas have not been implemented. The Kazakhstan-Iran oil pipeline project passing through Turkmenistan is a case in point. In the 1990s, Kazakhstan and Iran began to seek to build this pipeline because it was the shortest and cheapest route to the world market. However, the U.S. sanctions on Iran have prevented them from securing political support for the pipeline project, and thus it still only remains on paper [8].

This discussion implies that unless the RNS gas pipeline project first secures political support, it cannot proceed to the next stage of commercial discussion and thus have any chance of being implemented. This is why this study analyzes the political viability of the project.

2.1.2. Hypothesis

This study selects 2006 as the starting year of the analysis for two main reasons. First, it was around this time that South Korea began to consider Sakhalin instead of the Sakha Republic as the starting point of the RNS gas pipeline. Second, North Korea’s nuclear tests, which had been the most important factor affecting not only inter-Korean relations but also U.S.–North Korea relations, began in 2006. From 2006 to the present, this study hypothesizes that North Korea’s fourth nuclear test in January 2016 changed the dynamic of the RNS gas pipeline project.

Before the fourth test, improved inter-Korean relations were the necessary condition for securing political support for the pipeline project. In other words, if inter-Korean relations were not good, South Korea and Russia could not exert efforts to secure political support for the project. To be sure, the U.S. played the most important role in imposing UN sanctions against North Korea when it conducted provocative military actions such as nuclear and missile tests. Nevertheless, these sanctions did not contain any provision that could prevent the implementation of the project. Therefore, if heightened tensions arising from the provocative military actions subsided over time and inter-Korean relations improved, South Korea and Russia could pursue the signing of a trilateral intergovernmental agreement with North Korea to build the RNS pipeline.

However, after the fourth nuclear test, this was no longer the case. As North Korea’s nuclear power status and its capability of launching long-range missiles became more evident, this nuclear problem began to have profound implications for U.S. security. In response, Washington not only led the UN Security Council (UNSC) to impose severe sanctions against North Korea, but also placed its own sanctions on the country. These sanctions contained provisions that could prevent the implementation of the gas pipeline project. In addition, the U.S. sanctions against Russia in 2017 over its intervention in the U.S. election and aggression against Ukraine, Countering America’s Adversaries Through Sanctions Act (CAATSA), also contained clauses that could hamper the project. Therefore, unless the U.S. lifts or eases all these sanctions, South Korea and Russia are unwilling to take concrete actions to secure political support for the project. Relying on this analytical framework, this study analyzes its political viability.

2.2. Data

This study is a qualitative case study that relies heavily on data from primary sources such as newspaper articles, electronic materials, UN documents, government documents, and energy statistics. It also relies on secondary sources such as policy briefs, working papers, and academic journals. Moreover, it utilizes experts' opinions in these sources to buttress its argument.

3. Results and Discussion

3.1. The RNS Gas Pipeline and the Three Stakeholders

This section discusses various factors that affect the position of the three concerned states—South Korea, Russia, and North Korea—on the RNS gas pipeline project.

3.1.1. South Korea

The RNS pipeline project certainly entails several risks for South Korea. For example, its implementation can be stopped in the middle of construction if inter-Korean relations suddenly deteriorate. The experience of the Korean Peninsula Energy Development Organization (KEDO) best illustrates this risk. KEDO was established in 1995 to implement the 1994 U.S.-North Korea Agreed Framework aimed at dismantling North Korea's nuclear program. Its primary task was to finance and construct two light-water reactors in North Korea, but this project was suspended in the midst of worsening inter-Korean relations in the early 2000s and then completely abandoned in 2006. As a result, South Korea's contribution of \$1.13 billion to the \$4.6 billion project was wasted [9]. Another possible risk can occur after the completion of the RNS pipeline project. In particular, North Korea could disrupt Russia's gas exports to South Korea amid deteriorating inter-Korean relations. Seoul is then likely to face the problem of a gas shortage [10].

These risks, however, have not prevented South Korea from pursuing the RNS pipeline project. As will be discussed later, South Korea has sought to secure political support for the project as long as there were no political barriers such as rising tensions in the Korean peninsula and the UN sanctions after North Korea's fourth nuclear test. Four main factors explain this position. First, South Korea can gain economic benefits by building the RNS pipeline. In particular, it can lessen its gas import bill because piped natural gas (PNG) is expected to be 25%~30% cheaper than liquefied natural gas (LNG) [11]. Thus, if South Korea can import 7.5 million tons (10.2 bcm) of Russian PNG, it can save approximately \$780 million~\$936 million per year based on the average LNG import price of \$416 per ton in 2017 [12]. Importing PNG also helps South Korea enhance its bargaining position vis-à-vis LNG exporters.

Second, South Korea can diversify its gas supply sources by building the RNS pipeline. South Korea imported 51.3 bcm of gas in 2017. As Table 3 shows, the country imported 42.1% and 23.39% from the Middle East (Qatar and Oman) and Southeast Asia (Malaysia, Indonesia, and Brunei), respectively. Therefore, if South Korea imports 10.2 bcm of gas from Russia, this will reduce its heavy dependence on the Middle East and Southeast Asia and lower the risks associated with transporting gas from the Middle East through the Malacca Strait.

Table 3. South Korea's gas imports by country, 2017 [13].

Country	Volume (bcm)	Share (%)
Qatar	15.9	30.99
Oman	5.7	11.11
Malaysia	5.1	9.94
Indonesia	4.9	9.55
Brunei	2.0	3.90
Australia	9.6	18.71
Russia	2.6	5.07
Others	5.5	10.73
Total	51.3	100

Third, the South Korean government expects that the RNS pipeline project will have a positive impact on inter-Korean relations. Speaking at a forum on regional cooperation in March 2018 in Seoul, South Korean Foreign Minister Kang Kyung-wha noted that the pipeline project would serve “as a catalyst” for reducing geopolitical tensions on the Korean peninsula [14].

Fourth, the South Korean government perceives that the RNS gas pipeline project will play an important role in facilitating the energy transition policy. As noted above, the government seeks to decrease its dependence on coal-fired power to tackle the problem of fine dust. Therefore, the government needs to find a source of alternative energy and the RNS project will help it solve this problem [15].

3.1.2. Russia

The RNS pipeline project also entails risks for Russia. Russia, like South Korea, cannot rule out the possibility that its implementation can be stopped in the middle of construction. Moreover, Russia faces the risk that North Korea could disrupt its gas exports to South Korea. If this occurs, Russia will lose its gas revenue. Russia is well aware of this risk because its gas exports to Europe had been disrupted on numerous occasions largely due to its dispute with the transit state of Ukraine [16]. The possibility of this disruption is probably higher in the RNS pipeline in part because North Korea is a more unpredictable partner than Ukraine [10].

However, these risks have not deterred Russia from pursuing the RNS pipeline project. As will be discussed later, the country has sought to secure political support for the project as long as its gas consumer South Korea has done the same. Three factors bore large responsibility for this position. First, Russia can diversify its gas exports by implementing the pipeline project. As Table 4 demonstrates, its gas exports are concentrated in Europe, constituting 82.02 % of the total gas exports. In contrast, the share of its gas exports to the Asia-Pacific only amounts to 6.64 %. To be sure, it will increase substantially when the Power of Siberia gas pipeline connecting Russia and China is built in the near future. Nevertheless, Russia has determined that it needs to greatly increase the share of its gas exports to the Asia-Pacific region. Russia’s Energy Strategy for the period up to 2030, approved in December 2009, best reflects this manner of thinking. The strategy specified that Russia would seek to increase its share of gas exports from 0% to 19~20% by 2030 [17]. The draft of Russia’s Energy Strategy for the period up to 2035, first released in January 2014 and still discussed among government officials, raised the target. According to the draft strategy, the share will increase to 43% by 2035 [18].

Table 4. Russia’s gas exports by region, 2017 [13].

Region	Volume (bcm)	Share (%)
Europe	189.4	82.2
CIS	26.2	11.34
Asia-Pacific	15.4	6.64
Total	231.0	100

Accomplishing this target, however, will not be easy, primarily because competition over the Asia-Pacific gas market is likely to greatly intensify. In particular, Australia, which had invested tremendous financial resources in developing gas fields and building LNG export capacities in the recent past, emerged as a main gas exporter. As a result, the Asia-Pacific gas market became a fierce battleground between Qatar and Australia. As Table 5 illustrates, Qatar’s exports reached their peak in 2014 and then began to decline. In contrast, Australia’s exports had consistently increased and then overtook Qatar’s exports in 2017. The U.S. intends to join this fierce competition. Thanks to its shale revolution, the country significantly increased its gas production and became a net gas exporter in 2017. According to the Energy Information Administration (EIA), the U.S. was capable of exporting around 50.64 bcm of LNG annually by the end of 2018, and this capacity is projected to reach around 91.99 bcm annually by the end of 2019. This means that the volume of the U.S. LNG exports will almost

double in one year. As a result, the U.S. is expected to become the third largest LNG exporter after Australia and Qatar in 2019 [19]. In these conditions, Russia has a strong incentive to build the RNS pipeline. By constructing the pipeline, it can achieve two goals of preempting the Korean gas market and increasing its gas exports to the Asia-Pacific.

Table 5. Qatar and Australia’s gas exports to the Asia-Pacific, 2011~2017 [13].

Year	Qatar (bcm)	Australia (bcm)	Total (bcm)
2011	48.6	25.6	74.2
2012	66.5	28.0	94.5
2013	75.0	30.1	105.1
2014	74.4	31.6	106.0
2015	69.5	38.9	108.4
2016	68.0	55.1	123.1
2017	69.6	75.9	145.5

Second, Russia can reduce its dependence on China by building the RNS pipeline. Currently, Russia exports only a small volume of gas to China. However, if the Power of Siberia pipeline is built, it will allow Russia to export 38 bcm of gas per year to China. Russia’s dependence on China will then significantly increase. This is likely to decrease Moscow’s negotiating power vis-à-vis Beijing in the Asia-Pacific gas market largely because Beijing tends to believe that gas in Russia’s eastern Siberian fields has no market except China [20].

Third, Russia can increase its sphere of influence in the Korean peninsula by constructing the RNS pipeline. After the collapse of the Soviet Union, its influence substantially decreased. Thus, Moscow has attempted to regain it. The Russian parliament’s ratification of the 2012 agreement to write off 90% of North Korea’s \$10.9 billion debt in 2014 is a case in point. Around this time, some observers noted that this move is partially related to the country’s effort to build the RNS pipeline [21].

3.1.3. North Korea

The RNS pipeline project entails little risk for North Korea, primarily because it is unlikely to bear any financial burden for constructing the pipeline. In contrast, the country can gain two important benefits by allowing the construction of the gas pipeline. Above all, it can earn a transit fee when the pipeline becomes operational. Kogas revealed its estimate of this fee in October 2018 based on Gazprom’s comparable contracts with transit countries such as Ukraine, Belarus, and Slovakia. It noted that North Korea can earn around \$175.9 million annually [22]. This sum is substantial especially given that the country’s total exports in 2017 only amounted to \$1.74 billion [23].

Moreover, North Korea can lower its substantial dependence on China. More than 90% of North Korea’s foreign trade takes place with China. Due to this heavy dependence, Pyongyang finds it difficult to stay out of China’s orbit. In this context, the RNS pipeline will allow Russia to play a more important role in North Korea. This in turn provides North Korea with more room to maneuver in carrying out its foreign policy.

However, as will be discussed later, North Korea conducted numerous nuclear and missile tests and has been unwilling to give up its nuclear weapons, which have greatly darkened the prospects for the implementation of the RNS pipeline project. North Korea appears to have taken these actions largely because it has prioritized its regime survival through the possession of nuclear weapons over the gas pipeline project.

3.2. Shift in the Dynamic of the RNS Gas Pipeline Project

3.2.1. Inter-Korean Relations and the Pipeline Project

As noted above, before North Korea’s fourth nuclear test in January 2016, detente in inter-Korean relations was the necessary condition for securing political support for the RNS gas pipeline project.

That is, if inter-Korean relations were good, South Korea and Russia could make concrete moves to secure political support for the gas pipeline project. This was most clearly evidenced shortly after North Korea carried out its first nuclear test on October 9, 2006. Five days after this test, the UNSC unanimously adopted resolution 1718 imposing sanctions against North Korea (See Table 6). These sanctions mostly focused on banning the trade of heavy weaponry and materials related to its nuclear and missile programs [24]. Therefore, they did not contain any provision that could prevent South Korea and Russia from pursuing the implementation of the pipeline project. In fact, three days after the resolution, the South Korean government signed a framework agreement with the Russian government to build the RNS gas pipeline without concern for violating the sanctions [10,25].

Table 6. Timeline of North Korea’s nuclear tests and corresponding UN Security Council (UNSC) resolutions [26].

No. of Test	Date	UNSC Resolution
1st test	9 October 2006	1718
2nd test	25 May 2009	1874
3rd test	12 February 2013	2094
4th test	6 January 2016	2270
5th test	9 September 2016	2321
6th test	3 September 2017	2375

This agreement was possible because inter-Korean relations did not deteriorate in spite of the North Korean nuclear test. Indeed, then progressive South Korean President Roh Moo-hyun did not abandon his predecessor’s “sunshine policy” of engagement with North Korea. For instance, South Korea did not suspend the Kaesong Industrial Complex (KIC), a crucial symbol of inter-Korean cooperation. More importantly, it refused to join the Proliferation Security Initiative (PSI) launched by the U.S. aimed at preventing the spread of weapons of mass destruction by saying that this move would create unnecessary tension with North Korea [27]. At that time, North Korea warned that it would consider South Korea’s participation in the PSI as a declaration of war [28]. President Roh’s policy obviously contributed to reducing tensions between the two Koreas, but had a negative impact on South Korea–U.S. relations [29].

South Korea and Russia continued to make efforts to secure political support for the RNS gas pipeline project after Lee Myong-bak became president in February 2008. He and then-Russian President Dmitry Medvedev agreed to cooperate on implementing the pipeline project during the summit held in Moscow in September 2008. This agreement was followed by a legally non-binding memorandum of understanding (MOU) between South Korea’s state-run gas company Kogas and Russia’s state-run Gazprom. This MOU specified that Kogas would import 7.5 million tons (10.2 bcm) of Russian gas annually for a period of 30 years starting in 2015 [10]. Thus, South Korea and Russia appeared to move a step closer to signing a trilateral intergovernmental agreement with North Korea to build the pipeline.

However, this possibility evaporated because inter-Korean relations were significantly strained in 2009. In May of that year, North Korea conducted its second nuclear test (Table 6). The conservative Lee administration reacted differently to this test. Unlike the previous administration, it announced that South Korea would join the PSI [30]. Inter-Korean relations deteriorated further in 2010. In March of that year, a North Korean submarine carried out a torpedo attack on the South Korean naval ship Cheonan, killing its 46 sailors. In response to this attack, the South Korean government announced that it would implement retaliatory measures against North Korea in May 2010. These measures included cutting nearly all trade with North Korea, resuming “psychological warfare” propaganda after a six-year suspension, and exerting diplomatic efforts to place tighter UN sanctions against North Korea [31]. Around three months after these measures, the U.S. imposed additional sanctions on North Korea. These sanctions were targeted at the highest echelons of the North Korean government by blocking the flow of luxury goods into the country [32].

These sanctions, however, did not tame North Korea. Pyongyang further increased the tension in the Korean peninsula in mid-November 2010. It invited a U.S. nuclear expert to the Yongbyon nuclear complex and then showed him a uranium enrichment facility with 2000 centrifuges that could “be readily converted to produce highly-enriched uranium (HEU) bomb fuel” [33]. Shortly thereafter, North Korea carried out an artillery attack on a South Korean island in the Yellow Sea, Yeonpyeongdo, which killed two marines and two civilians. In response, South Korea fired 80 shells on North Korea [10]. Under these circumstances, South Korea and Russia could not exert any efforts to secure political support for the RNS gas pipeline project.

However, heightened tensions in the Korean peninsula later began to show signs of thawing. At a press conference after his summit with German Chancellor Angela Merkel in Berlin in May 2011, President Lee said that if North Korea was committed to denuclearization, he would invite its leader Kim Jong-il to the Nuclear Security Summit to be held in Seoul in May 2012 [34,35]. These signs became more evident in late July 2011. During the Association of Southeast Asian Nations (ASEAN) Regional Forum in Indonesia in July 2011, chief negotiators of South Korea and North Korea to the six-party talks met to discuss denuclearization; this discussion was followed by a meeting between the Foreign Ministers of the two Koreas the next day [36].

Amid this rapprochement, the possibility of securing political support for the RNS gas pipeline project greatly increased. As a matter of fact, shortly after the meeting, the three concerned states of South Korea, Russia, and North Korea began to intensify their political efforts to implement the pipeline project. After his negotiations with South Korean Foreign Minister Kim Sung-hwan in Moscow in early August 2011, Russian Foreign Minister Sergei Lavrov noted that consultation on the pipeline project was “fairly concrete” [37]. Around two weeks later, North Korean leader Kim Jong-il visited Russia and held a summit meeting with then Russian President Medvedev. A crucial agenda of this summit was the RNS gas pipeline project and the North Korean leader exhibited great interest in its implementation [10].

All these efforts created the most favorable environment for signing a trilateral intergovernmental agreement among the three concerned states to build the RNS pipeline. This largely explains why South Korean President Lee said in his interview with the Korean national broadcaster KBS in September 2011 that the gas pipeline project is “likely to progress faster than expected” [38]. Indeed, shortly after this interview, Kogas and Gazprom signed a roadmap for the project. Under this roadmap, construction would begin in 2013 and be completed in 2016 [10]. Gazprom also signed an MOU with North Korea to implement the pipeline project [39]. Therefore, South Korea and Russia expected that they would soon conduct trilateral negotiations with North Korea [10].

This expectation, however, was dashed especially in February 2013 when North Korea carried out its third nuclear test (See Table 6). This test significantly chilled inter-Korean relations. Thus, Park Guen-hye, inaugurated as South Korean President approximately two weeks after the third nuclear test, could no longer make any efforts to secure political support for the RNS pipeline project, even though she pledged to implement it while she was a presidential candidate [40].

Strained inter-Korean relations did not change much until at least August 2013. In fact, inter-Korean relations in the early stages of the Park administration deteriorated to the point that a military confrontation between the two countries was possible. In early April 2013, North Korea advised foreign embassies stationed in Pyongyang to evacuate their staff [41]. Shortly thereafter, North Korea made another dramatic move by announcing that it would withdraw its workers from the KIC, the last link between the two Koreas, and temporarily suspended its operations. In response, the South Korean government also withdrew its workers from the KIC because it was concerned about their safety. Therefore, its operations completely halted in May 2013 for the first time since its opening in 2004. In the midst of these heightened tensions, South Korea stopped conducting bilateral negotiations with Russia regarding the RNS gas pipeline project. Accordingly, the project was thought to have been abandoned [42].

The heightened tensions in the Korean peninsula, however, began to ease as the two Koreas began to seek ways to reopen the KIC. These efforts bore fruit in August 2013. Both sides agreed to ensure that political factors would not affect its operation. To accomplish this aim, they decided to take several measures such as guarantees not to limit employees' access or withdraw workers unilaterally, the resumption of communication lines, and the creation of a joint North-South committee for overseeing the complex [43]. A month after the agreement, the KIC reopened and began to operate again [44].

These reduced tensions in inter-Korean relations created an environment for at least resuming talks on the RNS gas pipeline project. During a media briefing at the World Energy Congress held in South Korea in October 2013, Russian Energy Minister Alexander Novak commented that Gazprom and Kogas had begun to discuss the gas pipeline project [42]. However, primarily due to the lingering North Korean nuclear problem, the attitude of the conservative Park administration toward the pipeline project was lukewarm. The joint declaration issued after the South Korea-Russia summit held in Seoul in November 2013 excellently illustrated this attitude. It stated that “[t]he decisions to supply Russian pipeline gas to South Korea in the mid-term and long-term perspective will take into account the availability of resources, economic viability and other preconditions necessary for the fulfillment of this [gas pipeline] project” [45]. This statement indicated that even though South Korea would continue to pursue the RNS gas pipeline project, it would not consider it a priority. In other words, South Korea perceived that the project is likely to be realized in the mid-term perspective at best.

However, inter-Korean relations did not develop the way that the South Korean government had hoped in the mid-term perspective. In particular, North Korea conducted its fourth nuclear test in January 2016 and around a month later fired a long-range rocket. In response, the Park administration unilaterally shut down the KIC in February 2016 by announcing that its operations provided funds for North Korea's nuclear and missile programs [46].

Before the fourth nuclear test, several UN sanctions imposed against North Korea did not contain any provision that could prevent the implementation of the pipeline project. The sanctions focused on banning arms sales, and prohibiting trade in materials that could contribute to North Korea's nuclear and missile programs [47]. These sanctions obviously did not affect the implementation of the pipeline project. Indeed, as discussed above, when inter-Korean relations were good, South Korea and Russia exerted efforts to secure political support for the project without concern for violating the sanctions.

3.2.2. The U.S. Factor and the Pipeline Project

As hypothesized above, North Korea's fourth nuclear test changed the dynamic of the RNS gas pipeline project. In particular, in March 2016, approximately two months after the nuclear test, the UNSC, prodded by the U.S., adopted resolution 2270 imposing severe sanctions on North Korea. From this moment, improvement in inter-Korean relations alone could not facilitate the political viability of the gas pipeline project. As will be discussed below, North Korea continued to take provocative military actions after its fourth nuclear test until November 2017. In response, the U.S. not only led the UNSC in imposing several sanctions against North Korea, but also placed its own sanctions on the country. These sanctions began to contain provisions that could prevent the implementation of the RNS pipeline project. In addition to these sanctions, the U.S. sanctions under CAATSA against Russia in 2017 also contained clauses that had the same effect. Therefore, unless the U.S. lifts or eases its own sanctions against North Korea and Russia as well as the UN sanctions against North Korea, Seoul and Moscow are unwilling to make concrete moves to secure political support for the RNS gas pipeline project.

For example, resolution 2270 contains provisions that ban existing and new financial channels to and from North Korea [48]. To be sure, resolution 2094, adopted after North Korea's third nuclear test, also contains similar provisions. However, these provisions do not include existing financial channels. More importantly, they start with the non-binding phrase “Calls upon States to take appropriate measures to prohibit” instead of the binding phrase “Decides that States shall prohibit” [49]. Therefore,

it became mandatory for all member states to prohibit existing and new financial channels to and from North Korea after the fourth nuclear test. Without these financial channels, it would be difficult to implement the trilateral gas pipeline project that goes through North Korea. For example, it will be difficult to pay North Korean workers who are likely to be employed in constructing the pipeline. Furthermore, North Korea cannot receive transit fees when the pipeline becomes operational. Naturally, these provisions make it difficult for South Korea and Russia to make any efforts to secure political support for the pipeline project.

The UN sanctions, however, did not deter North Korea from taking provocative military actions. North Korea fired a submarine-based ballistic missile and an intermediate-range missile in April and June 2016, respectively. North Korea fired another submarine-based ballistic missile in August 2016 that flew around 500 km in the direction of Japan. This missile test demonstrated North Korea's improved missile technology [45]. Around two weeks later, North Korea carried out its fifth nuclear test (See Table 6).

In response, the UNSC adopted resolution 2321 sponsored by the U.S. that imposes even more severe sanctions against North Korea. This resolution contains a provision prohibiting public and private financial support for trade with North Korea. It specifies that all UN member states "shall prohibit public and private financial support from within their territories or by persons or entities subject to their jurisdiction for trade with the DPRK (including the granting of export credits, guarantees or insurance to their nationals or entities involved in such trade)" [50]. This provision differs from a similar provision contained in resolution 2270 in one important respect. The previous provision is conditional in that prohibiting financial support is restricted to the area that could contribute to North Korea's nuclear or ballistic missile programs, or other activities such as the trade of heavy weaponry [48]. In contrast, the new provision erases this condition, and accordingly, member states should implement it except as approved in advance by the UN Sanctions Committee [50]. The provision makes it more difficult for South Korea and Russia to take concrete actions to secure political support for the gas pipeline project.

In spite of the UN sanctions, however, North Korea continued to carry out missile tests. These tests became more frequent especially after Donald Trump's presidential inauguration in January 2017. In fact, North Korea conducted six more missile tests until July 2017. Among these tests, the last two were intercontinental ballistic missiles (ICBMs) and this began to pose significant implications for U.S. security. In particular, the last test in late July 2017, according to several experts, demonstrated that North Korea is capable of striking the western part of the United States [51]. This dramatically changed the country's perception of the North Korean threat [47].

Naturally, Washington led the UNSC to adopt the strongest resolution 2371 yet in August 2017. It contains a provision stating that all UN member states shall prohibit "the opening of new joint ventures or cooperative entities" with North Korea [52]. Approximately one month after the resolution, North Korea conducted its sixth nuclear test (See Table 6). In response, the UNSC adopted resolution 2375 initiated by the U.S. This resolution contains a provision that expands the previous one by adding existing ventures. It specifies that all UN member states shall prohibit "the opening, maintenance, and operation of all joint ventures or cooperative entities, new and existing, with DPRK entities and individuals . . ." [53]. These two provisions make it almost impossible for South Korea and Russia to exert any efforts to secure political support for the RNS gas pipeline project because it requires forming joint ventures with North Korea.

In addition to leading efforts in imposing several UN sanctions against North Korea, the U.S. also imposed its own sanctions to place greater pressure on the country. CAATSA is a case in point. It must be stressed at this point that CAATSA primarily targets Russia because the U.S. Congress overwhelmingly passed this act in July 2017 as a response to Russia's interference in the U.S. election and its aggression against Ukraine. However, the act includes sanctions that add several measures to the already existing U.S. sanctions on North Korea and Iran. President Trump signed it into law in early August 2017.

CAATSA could affect the implementation of the RNS gas pipeline project in two ways. With respect to North Korea, it contains a provision that prohibits conducting financial transactions with North Korea [47]. This provision also makes it difficult for South Korea and Russia to secure political support for the RNS pipeline project. With respect to Russia, CAATSA gives the U.S. President the authority to impose secondary sanctions on foreign entities that knowingly make investments of more than \$5 million over a 12-month period that directly and significantly contributes to the enhancement of the ability of Russia to construct energy export pipelines [54]. This provision implies that if South Korean companies are financially involved in building the RNS gas pipeline, they will face the risk of suffering U.S. sanctions. This possibility is very high because \$5 million is a very small sum for the multi-billion dollar gas pipeline project.

Therefore, unless the U.S. lifts or eases all of these sanctions, South Korea and Russia cannot show any willingness to take the risk of pursuing a trilateral intergovernmental agreement with North Korea to implement the pipeline project. This explains why even though inter-Korean relations significantly improved in 2018, South Korea and Russia no longer pursued the agreement. Inter-Korean relations began to improve in early 2018 when North Korea decided to participate in the Pyeongchang Winter Olympics held in South Korea. North Korea also sent a delegation including Kim Yo-jong, sister of the country's leader Kim Jong-un, to attend its opening ceremony in February 2018. This was followed by the summit of the two Koreas in the southern part of the Joint Security Area in Panmunjom in April 2018. The two leaders signed the Panmunjom declaration, which promises to end the military conflict and implement the denuclearization of the Korean peninsula [43]. This declaration significantly reduced tensions between the two Koreas. Approximately a month later, the leaders of the two Koreas held a second summit in the northern part of the Joint Security Area in Panmunjom.

These two summits paved the way for the historic U.S.-North Korea summit in Singapore in June 2018. The summit produced a joint statement in which U.S. President Trump "committed to provide security guarantees" to North Korea, and North Korean leader Kim "reaffirmed his firm and unwavering commitment to [the] complete denuclearization of the Korean peninsula" [47]. The historic U.S.-North Korea summit also contributed to the further improvement of inter-Korean relations. In this context, South Korea and Russia made a symbolic gesture regarding the RNS gas pipeline project. During the South Korea-Russia summit in Moscow held two weeks after the historic summit, Moon and Putin agreed to conduct a joint study to assess the feasibility of the RNS pipeline project [55].

However, South Korea and Russia did not take any concrete actions to secure political support for the project because of the international sanctions against North Korea. Indeed, less than a week after the agreement, Chung Seung-il, CEO of Kogas, noted that "... the denuclearization of the Korean Peninsula and also [the] lifting of international sanctions are the prerequisites to promote that [gas pipeline] project The conditions should be met before we talk about the project in detail" [56]. Likewise, after her meeting with the North Korean leader Kim in Pyongyang in September 2018, Valentina Matviyenko, speaker of the Russian Federation Council, stated that "[w]e openly tell our North Korean partners that we cannot violate sanctions, cannot violate the sanctions regime in the areas sanctioned by the UN sanctions committee" [57].

This concern about the sanctions was natural given that the U.S. did not lift or ease any sanctions against North Korea after the historic summit in June 2018. Both countries obviously disagreed on how to interpret the Singapore framework containing few details on implementing denuclearization. Washington insisted that it would not withdraw sanctions unless North Korea first abandons its nuclear program. In contrast, Pyongyang claimed that since it made several concessions such as the dismantling of the nuclear test site in Punggye-ri and returning some of the bones of dead American soldiers from the Korean War, the U.S. should lift some of its sanctions [58]. Primarily because of this discord, the nuclear talks between the U.S. and North Korea did not make any progress, and thus, Washington did not show any sign of lifting or easing the sanctions against North Korea.

It was in this context that the U.S. issued a warning to South Korea about the potential violation of the UN sanctions. This warning was made as South Korean President Moon went to North Korea

for the third summit with his North Korean counterpart Kim in September 2018, accompanied by a business delegation including top executives of South Korea's four major conglomerates. When asked whether the South Korean plan to implement the RNS gas pipeline project with Russia's Gazprom would be in violation of the UN sanctions, an official from the U.S. Department of State spokesperson's office stated that "[a]ll UN Member States are required to implement UN Security Council sanctions resolutions and we expect them all to continue doing so" [59,60]. This was the first time that the U.S. made a public statement opposing the South Korean plan. In these conditions, South Korea and Russia were unwilling to take the risk of pursuing a trilateral intergovernmental agreement with North Korea to implement the RNS pipeline project.

The second U.S.-North Korea summit held in Hanoi in February 2019 could have changed this situation if the two leaders had made substantial progress in resolving the nuclear issue. However, the summit did not produce any agreement because the U.S. and North Korea staked out different positions. Washington demanded substantial denuclearization from North Korea in return for lifting the sanctions, whereas Pyongyang wanted substantial lifting of the sanctions from the U.S. in exchange for partial denuclearization [61]. This disagreement is unlikely to be resolved in the near future. Thus, the sanctions will remain in place.

To make matters worse, South Korea faces another hurdle, namely, U.S. sanctions under CAATSA against Russia in implementing the RNS pipeline project. These sanctions will remain in force even if the North Korean nuclear problem is fully resolved and the U.S. consequently lifts its own as well as the UN sanctions against North Korea. As noted above, CAATSA allows the U.S. President to impose secondary sanctions against foreign entities that enhance Russia's ability to construct energy export pipelines. To be sure, this provision is discretionary rather than mandatory, meaning that the President is not required to impose such sanctions. Moreover, the provision states that the President imposes sanctions "in coordination with allies of the United States" [62]. Therefore, South Korea can hope for the best scenario, namely, that the U.S. consults South Korea on the issue of the RNS gas pipeline project and then decides not to impose any secondary sanctions against its companies involved in the project.

However, the possibility of this scenario is quite slim, largely because the U.S. seeks to increase its gas exports to South Korea. In fact, CAATSA contains a clause stating that "the United States Government should prioritize the export of United States energy resources in order to create American jobs . . ." [62]. As discussed above, the U.S. is likely to greatly increase its LNG exports in the future. According to the EIA, it will increase from 76.5 bcm in 2020 to 145.5 bcm in 2040 [63]. BP predicts that the U.S. and Qatar will dominate global LNG exports, accounting for almost half of these exports by 2040 [64]. Naturally, Washington perceives South Korea as an important market [65].

Thus, this has been a strong incentive to invoke the sanctions under CAATSA against Russia to prevent the implementation of the RNS gas pipeline project. The possibility of the U.S. making this move is quite high, especially given its policy toward Russia's Nord Stream 2. The Nord Stream 2 is an underwater gas pipeline that directly connects Russia and Germany, bypassing countries such as Ukraine and Poland. Russia's Gazprom together with five European energy companies—France's ENGIE, Austria's OMV, Anglo-Dutch Royal Dutch Shell, and Germany's Uniper and Wintershall—sought to build this pipeline. These five energy companies agreed to provide long-term financing for 50% of the €9.5 billion project in April 2017 [66].

Under these circumstances, the U.S. issued numerous warnings that it would impose secondary sanctions on these energy companies. For example, Francis Fannon, assistant secretary at the U.S. State Department Bureau of Energy Resources, stated in July 2018 that companies involved in the Nord Stream 2 would face the risk of U.S. sanctions [67]. Likewise, U.S. National Security Advisor John Bolton noted in his interview with the Wall Street Journal in December 2018 that Washington would consider a range of option to stop the construction of the Nord Stream 2 [68]. Richard Grenell, U.S. Ambassador to Germany, even sent letters to German companies involved in the Nord Stream 2, warning them of the risk of sanctions [69]. The U.S. justified this by saying that the Nord Stream 2

will have a negative impact on EU energy security and Ukraine's economy [70,71]. However, several observers have pointed out that this is not the primary reason why the U.S. opposes its construction. Rather, it has an ulterior motive to export its gas to Europe [72,73].

Thus, South Korea cannot rule out the possibility that if its companies are involved in implementing the RNS gas pipeline project, the U.S. will impose secondary sanctions on them. South Korean companies in the RNS pipeline will then be far more vulnerable to U.S. sanctions than the five European companies involved in the Nord Stream 2. In the case of the Nord Stream 2, these five European companies are based in diverse European countries, some of which are major powers such as Germany, France, and the U.K. Therefore, these countries have greater capabilities to protect their companies from U.S. sanctions. In the case of the RNS pipeline, however, only South Korean companies are likely to be involved in the project. South Korea is obviously less powerful than the five European countries combined. Naturally, if the U.S. imposes secondary sanctions on South Korean companies, Seoul will find it very difficult to protect them from U.S. sanctions.

4. Conclusions

This paper has analyzed the political viability of the RNS gas pipeline project. This analysis has demonstrated that North Korea's fourth nuclear test in January 2016 changed its dynamic. Before the test, improvement in inter-Korean relations alone could facilitate the political viability of the pipeline project. After the test, however, the role of the U.S. became the most important factor in the political viability of the project. To be more precise, unless the U.S. lifts or eases its own sanctions against North Korea and Russia, as well as several UN sanctions against North Korea, Seoul and Moscow are unwilling to take concrete actions to secure political support for the project.

With respect to North Korea, the sanctions that could prevent its implementation are likely to remain in force unless the country's nuclear problem is substantially resolved. With respect to Russia, the sanctions are unlikely to be lifted or eased unless the country softens its foreign policy stance. This implies that there is too much uncertainty regarding the political viability of the RNS pipeline project because it is almost impossible to predict how political situations such as North Korea's nuclear problem and U.S.-Russia relations will develop. Therefore, South Korea needs to develop a strategy to secure stable gas supplies based on the assumption that the RNS pipeline project is unlikely to be implemented in the near future.

Before concluding this paper, it is necessary to discuss the Russia-China-South Korea (RCS) gas pipeline project passing through the Yellow Sea because it has been intermittently proposed as an alternative, especially when the prospects for the RNS pipeline project have been slim. The RCS project has several advantages. For example, it is likely to allow South Korea to cooperate with China, and thus provide these two countries with more negotiating power vis-à-vis Russia in gas price negotiations. Most importantly, it can avoid the risks associated with North Korea. In this respect, the implementation of the RCS project will be easier than that of the RNS project. Nevertheless, if South Korea decides to pursue the construction of the RCS pipeline, the country should first verify whether it faces the risk of U.S. sanctions under CAATSA against Russia. South Korea cannot rule out the possibility that the U.S. considers the RCS pipeline as a project that enhances Russia's ability to construct energy export pipelines.

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