Are Vested Interests Still "Vested"? Japan's Domestic Climate Change Policy-Making Process under Cabinet Leadership

Yuika Iwabuchi

Student Number: 51-218015

Supervisor: Professor Hideaki Shiroyama

A Thesis Submitted to the Graduate School of Public Policy

The University of Tokyo

In Partial Fulfillment of the Requirements for the Degree of

Master of Public Policy

March 13, 2023

Abstract

Many literatures on Japan's policy-making process of climate change point out that "vested interests" have been formulated by energy-intensive industries and their interest groups and policy has been shaped through conflicts between government ministries. However, industry may not have a unified stance as before, and the strengthening of cabinet leadership may have reduced the influence of the traditional business community. Therefore, this thesis analyzes Japan's domestic climate change policy-making process by focusing on the role of industry and pro-business policy actors and whether the way they get involved in the policy-making process has changed. This thesis finds that energy-intensive sectors are still influential within industry but following the Fukushima Daiichi Nuclear Disaster and adoption of the Paris Agreement, more climate-friendly companies and industry groups have come to participate in deliberative councils. While the main arguments of traditional industry members have not much changed and are still considered within policy making, strong cabinet leadership as well as the participation of climate-friendly businesses in the policy-making process has clearly enabled the government to adopt more aggressive policy frameworks and measures. Especially under the revisited LDP government, even traditional industries began to commit to climate change countermeasures, considering that such efforts would induce investment. In this regard, vested interests are not entrenched in the policy-making process as before.

Table of Contents

List of Abbreviations

CO2	Carbon Dioxide
COP	Conference of Parties
DPJ	Democratic Party of Japan
ETS	Emissions Trading Scheme
EU	European Union
FEPC	Federation of Electric Power Companies of Japan
FIT	Feed-in Tariff
GHG	Greenhouse Gas
INDC	Intended Nationally Determined Contribution
JCCI	Japan Chamber of Commerce and Industry
JCIA	Japan Chemical Industry Association
JCI	Japan Climate Initiative
JCLP	Japan Climate Leaders' Partnership
JISF	Japan Iron and Steel Federation
LDP	Liberal Democratic Party
METI	Ministry of Economy, Trade and Industry
MOE	Ministry of the Environment
NGO	Non-Governmental Organization
REI	Renewable Energy Institute
UK	United Kingdom
US	United States

Introduction

In August 2020, London-based think tank InfluenceMap published a report on industrial influence over Japan's climate change policy making (InfluenceMap 2020, 1-6). The results of the study matched with the common understanding that Japan's national climate change policy-making process has been strongly impacted by industry, which has been unwilling to take progressive actions due to concerns about economic growth. Industry has been described as "vested interests" consisted of carbon-intensive sectors, such as power utilities, automobile manufacturers, and iron and steel makers (Shelfrick and Obayashi 2020). With these entrenched interests embedded in the policy-making process, greenhouse gas (GHG) emissions reduction targets have been developed through accumulative procedures (The Energy Conservation Center, Japan 2021), ending up in less-enthusiastic numbers. Yet in October 2020, Japan's Prime Minister Yoshihide Suga announced that the country would pursue to achieve net-zero emissions by 2050. Following this statement, in April 2021, he pledged that Japan would aim for a forty-six percent reduction of GHG emissions by 2030 compared to 2013 levels and even challenge for fifty percent. The number was considerably raised from the previous target set during the Abe administration in July 2015, which was a twenty-six percent cut (Kameyama 2021b). Not only that, Prime Minister Suga's declarations showed changes from prior decision-making processes of emissions reduction targets; he enabled top-down policy making under strong leadership, consistent with his political slogan of "breaking down vested interests" (Mainichi Shinbun 2021, 5).

However, this perception of Japan's domestic climate change policy-making process may be inaccurate. Looking closely at the new carbon neutrality commitment, industry appears to

have altered its resistant position toward confronting climate change. The Japan Business Federation (hereafter "*Keidanren*"), one of the most traditional business associations in Japan, welcomed Prime Minister Suga's leadership in presenting a long-term vision for GHG emissions reduction. This was an evident change considering that Keidanren, dominated by energy-intensive sectors, has long interfered with national-level climate change abatement measures through political lobbying (Shelfrick and Obayashi 2020). This implies that carbon-intensive companies may no longer be such dominant within industry. On top of that, Suga's exercise of cabinet leadership can be seen as an extension of changes observed in Japan's political and administrative system from the late 1990s. Existing literatures show how the cabinet's role in the policy-making process has been strengthened since the political and administrative reforms (Kubo 2014, 188, 197, 201-202; Watanabe 2015, 136). Some research indicate that this tendency has become much stronger during the second Abe administration, where the power of the Prime Minister's Office has expanded while interest groups and politicians from the ruling party no longer have much influence (Takenaka 2017, 279-82). This means that in the first place, industry may not be able to determine Japan's domestic climate change policy anymore.

Previous literatures which examine Japan's national policy-making process of climate change have attempted to grasp changes in the political and administrative sides, but changes within the business community and its effect on the policy-making process are yet to be explored. Therefore, the purpose of this thesis is to analyze Japan's climate change policy-making process at the domestic level by exploring the interactions among politics, administration, and industry. It particularly focuses on the role of industry and business-friendly policy actors in climate change policy making. By doing so, this thesis investigates whether the way vested interests get involved in the policy-making process of climate change has altered,

enabling the Japanese government to adopt more progressive climate change countermeasures. More specifically, the following research questions need to be addressed: 1) has the composition of influential sectors within industry changed, and if so, to what degree have those changes been reflected in Japan's domestic policy-making process of climate change? 2) have traditional, vested interests been overcome by structural changes in the political and administrative system and internal changes in the business community itself? By building on existing literatures, this thesis aims to provide a more accurate understanding of Japan's domestic climate change policy-making process.

To answer the aforementioned research questions, this thesis explores Japan's domestic policy-making process of climate change after the political and administrative reforms to perceive recent changes, with its main focus on the second Abe administration and succeeding Suga administration. This thesis conducts qualitative research based on analyses of academic books and journals, official reports and minutes of meetings of the Japanese government, and newspaper articles. While there are various policy options to combat climate change, this thesis explores national-level policy frameworks and measures for climate change mitigation. Specific areas to be covered are mid- and long-term GHG emissions reduction targets as well as economic incentives to encourage climate change abatement by stakeholders: an environmental tax or more broadly a carbon tax, domestic emissions trading scheme (ETS), and feed-in tariff (FIT), which are widely defined as carbon pricing initiatives. These measures have long been promoted by the Ministry of the Environment (MOE) and former Environment Agency but repeatedly failed due to the strict opposition of traditional, energy-intensive industries and their interest groups, most of all Keidanren (Dōman 2013, 99). Therefore, by examining industry's

attitude toward such measures, this thesis may be able to identify possible changes in the business community.

The remaining parts of this thesis is structured as follows. The first chapter presents a review of existing studies on Japan's climate change policy-making process at the domestic level and provides a problem statement based on the literature review. The second and third chapters examine the policy-making process after the reorganization of the political arena and government ministries and agencies. The second chapter inspects the policy-making process under the Liberal Democratic Party (LDP) government from 2001 to 2009, particularly focusing on the Fukuda and Aso administrations, and the Democratic Party of Japan (DPJ) government from 2009 to 2012. It shows how the display of cabinet leadership led to progress in Japan's climate change policy to some extent, but the composition of industry in government councils remained unchanged, allowing vested interests to intervene in the policy-making process. The third chapter, which is the primary focus of this thesis, investigates the policy-making process under the revisited LDP government from 2012 to 2021 under Abe and Suga administrations. It describes how the prime minister's initiatives along with the rise of climate-friendly industries led to the adoption of more ambitious policy frameworks. Based on these chapters, the fourth chapter explains the mechanism of changes in business actors' interests behind Japan's climate change policy making. Finally, the conclusion of this thesis discusses research implications and gives concluding remarks.

Chapter 1: Overview of Japan's Domestic Climate Change Policy-Making Process

1.1 Literature Review

This chapter reviews previous literatures on Japan's climate change policy-making process at the domestic sphere. Either comprehensively or focusing on a specific period, existing research study various factors which have promoted, or hindered, the adoption of ambitious policy targets and measures. A key component is the strong relationship between industry; the Ministry of Economy, Trade and Industry (METI), formerly the Ministry of International Trade and Industry (MITI), which had great political strength and close ties with industry; and "tribe" legislators from the LDP, who represented interests of industry; reflected in the policy-making process (Kameyama 2017, 14; Kubo 2014, 185, 193). This structure is referred to as the "iron triangle" (Kameyama 2017, 10; 2021a, 78; Iguchi, Luta, and Andresen 2015, 136; Schreurs 2019, 99) or the "industry government agency community", which was backed up by divided administrative responsibility of ministries and advance review of legislations by the LDP (Kubo 2014, 185, 187-88). Even though MOE or its forerunner, the Environment Agency, was responsible for environmental issues, climate change policy had to be formulated through conflicts with industry-friendly parliamentarians and bureaucrats (Kameyama 2017, 55-56; Kubo 2014, 188, 193). Government ministries had different interests (Oshitani 2006, 209), and policy decisions were finalized through cumulative, informal adjustments based on inter-ministerial coordination (Kameyama 2021a, 78; Hirata 2018, 6). A further explanation for Japan falling behind other countries was the immatureness of environmental NGOs and their limited access to the policy-making process due to close government-industry relations (Schreurs 2009, 247, 253).

In general, industry is regarded as an actor which negatively affects Japan's climate change policy making. Power utilities and heavy industry companies, such as cement or iron and steel, have been very resistant to policy change (Dewit and Iida 2011, 2; Sofer 2016, 9, 15). Electric utilities had significant power since Japan's electricity market has long been dominated by ten regional monopolies (Dewit and Iida 2011, 5). These energy-intensive sectors had the desire to maintain cheap energy costs for economic competitiveness (Sofer 2016, 15) and were against any modification to climate change policy which would be a burden on their businesses. The voices of traditional, carbon-intensive industries have been represented by Japan's most politically influential business association, Keidanren (Dewit and Iida 2011, 5; InfluenceMap 2020, 16; Kameyama 2017, 14; Sofer 2016, 15). Keidanren's strong linkage with METI and the LDP has enabled it to intervene in climate change policy making (Dewit and Iida 2011, 6; InfluenceMap 2020, 14; Kameyama 2017, 14), and its emphasis on economic growth has been deeply considered within the policy-making process (Sofer 2016, 15). Other than Keidanren, interest groups of carbon-intensive industries, such as the Japan Iron and Steel Federation (JISF) and the Federation of Electric Power Companies of Japan (FEPC), have taken negative attitudes toward climate change policy (InfluenceMap 2020, 4), obtaining membership in government committees.

From time to time, Japan was able to overcome industry's strong influence. For instance, external pressure (Oshitani 2006, 211) or the cabinet's willingness to make international contributions has pushed Japan's climate change policy forward (Kubo 2014, 186, 202). This was clearly observed during the decision-making period of the Kyoto Protocol. While Okayama (2008, 216-18) highlights inter-ministerial struggles between METI and MOE, Hattori (2000, 425-26, 443) reveals that in prior to hosting the Kyoto Conference in 1997, then Prime Minister

Ryutaro Hashimoto employed political leadership to overcome inter-ministerial disputes. He set up the Joint Conference on Relevant Advisory Councils on Domestic Measures Addressing the Global Warming Issue, which facilitated the formulation of an integrated climate change policy. This also led to the establishment of the Global Warming Prevention Headquarters headed by the Prime Minister. Schreurs (2009, 259) focuses on the role of the environment policy community during the Kyoto Conference; it was successful in gaining support from environment tribe politicians of the LDP and the Ministry of Foreign Affairs. Due to the back up of these entities, the Environment Agency, together with environmental NGOs, was able to advance countermeasures for climate change. At the same time, Schreurs (2019, 103-104) notes that the business community somewhat considered emissions reduction as a chance to enhance international competitiveness and pressured the government to take leadership.

Yet the business community has influenced the Japanese government to prevent from being enacted stiff regulatory approaches. METI had authority over climate change policy since it oversaw industrial and energy sectors, the main emitters of GHGs (Hirata 2018, 5). Climate change was indeed considered within policy making, but this was to preserve basic policy structure and the connection between industry and the government (Oshitani 2006, 216). As a result, the outcome of Japan' climate change policy had been focused on reducing emissions as much as possible while maintaining low energy costs (Dewit and Iida 2011, 5-6; Kubo 2014, 194, 202), and Japan had increased the use of nuclear energy and energy conservation and efficiency to achieve that goal (Kameyama 2021a, 71-72; Kubo 2014, 194). At the center of Japan's domestic climate change policy were bottom-up, voluntary measures by industry, namely the Keidanren Voluntary Action Plan on the Environment started in 1997 (Kameyama 2017, 97; Kawakatsu, Lee, and Rudolph 2017, 2-3; Kubo 2014, 194, 202), revised to

Keidanren's Commitment to a Low-Carbon Society in 2009 (Japan Business Federation 2009). The problem was that emissions reduction targets were intensity-based, not absolute numbers (Skea, Lechtenböhmer, and Asuka 2013, 40). Even when mandatory targets were enforced, industry was successful in limiting the numbers to make them less effective (Dewit and Iida 2011, 2). In addition, policy for tackling climate change was just a gathering of existing measures, not specifically focused on climate change (Kubo 2014, 193, 202). It was difficult to introduce new initiatives which industry did not favor and needed cross-boundary cooperation of government ministries, such as an environmental tax, ETS, or a FIT (Kubo 2014, 194).

On the other hand, Kubo (2014, 197) states that the concrete nature of Japan's domestic climate change policy-making process has gradually evolved after the reorganization of the political arena and government ministries and agencies from the mid-1990s to the early 2000s. Political reforms led to changes in the government agency community, where the relationship between industry, politicians, and bureaucrats loosened and their power to distort policy making relatively decreased. Kubo (2014, 188, 197, 201-202) describes that in the past, the Cabinet Secretariat had limited authority to facilitate coordination among ministries, but the central government reform reinforced such cabinet functions and strengthened cabinet leadership in the policy-making process. These reforms also altered the structure of inter-ministerial coordination from confrontation to cooperation by more usage of joint council meetings, frequent daily communication, and increased joint management of tasks between METI and MOE. This resulted in different policy outcomes than before; it can be assumed that top-down policy making enabled stronger policy measures against industry. However, Kubo (2014, 202) cautions that the industry government agency community still exists, so the institutionalization of the above changes cannot be confirmed and must be further examined. Kameyama (2021a, 78) makes a

similar argument that the iron triangle has become less influential due to government restructuring, although still evident in the policy-making process.

In addition to cabinet leadership, Watanabe's (2014, 218-19, 229-30) comparison of Japan and Germany's climate change policy-making process defines factors which cause policy transformation: multilevel governance, changes in governing-coalition, and policy entrepreneurship. Multilevel governance had effect in Japan; for example, international pressure and the positions of major countries, such as the US and China, urged the Aso administration to propose a GHG emissions reduction target of fifteen percent in 2009. While regime change from the LDP to DPJ had limited influence, Prime Minister Naoto Kan, a policy entrepreneur, paved way for avoiding nuclear power and implementing a FIT. Schreurs (2019, 109-12) argues that path dependencies are hard to change and entrenched interests which value nuclear energy may remain. Still, the Fukushima Daiichi Nuclear Disaster urged the government to expand renewables and strengthen energy conservation, which Skea, Lechtenböhmer, and Asuka (2013, 41-42) also mention. Kameyama (2017, 121-22, 161-62) investigates the social, economic, and political elements which have shaped Japan's climate change policy-making process. Non-state actors have been supporting progressive climate change policy making, following the adoption of the Paris Agreement in particular. Local governments and private enterprises have individually set ambitious GHG emission reduction targets. Prefectural administrations of Tokyo and Saitama have implemented an ETS, which has not realized at the national level. Still, these movements have not been significant enough to fracture the iron triangle.

Some literatures contend that industry has still dominated the climate change policy-making process in Japan, along with supportive politicians and government officials. Aburaki (2010, 18) states that Japan lacks consensus in domestic climate change policy due to the

relationship among political elites, industry, and labor unions. Dewit and Iida (2011, 2, 12-13) argue that industry has formulated vested interests much before the DPJ won the elections in 2009 and blocked drastic policy change even after regime change. Iguchi, Luta, and Andresen (2015, 132-35) also describe Keidanren, METI, and the LDP as vested interests or "veto players", which block long-term change. While the Fukushima Daiichi Nuclear Disaster encouraged the increase of renewable energy, the LDP still considers the opinions of the business community, which regards renewables as insufficient to substitute nuclear energy. Sofer (2016, 12, 14) explains in detail the dominant structure of climate change policy making after the LDP has returned to power by showing the example of the decision-making process up to COP21 in 2015. Interest groups representing industry have affected the policy-making process by negotiating and building consensus in advisory groups. Together with METI officials, interest groups have shaped climate change policy in the way industry prefers, and the Prime Minister's Office hardly intervened in such bottom-up procedures.

1.2 Problem Statement

Nevertheless, previous literatures seem to have some flaws. Existing studies presume that energy-intensive industries have shaped Japan's climate change policy making, but some research infer that those sectors may no longer be such influential due to institutional changes. For example, Skea, Lechtenböhmer, and Asuka (2013, 41-42) contend that the dominance of traditional power companies may have weakened due to the expansion of renewable energy businesses and the liberalization of the electricity market conducted after the Fukushima Daiichi Nuclear Disaster. This could affect the structure of climate change policy making since climate change policy has largely related to energy policy, with the energy sector, including electric

utilities, composing of about a quarter of Japan's CO2 emissions (Hughes 2021, 379). In addition, less carbon-intensive companies are gaining more presence especially after the adoption of the Paris Agreement. Some enterprises have set drastic GHG emissions reduction targets in advance to the government and established coalitions committed to climate change, such as the Japan Climate Leaders' Partnership (JCLP) and Japan Climate Initiative (JCI) (Kameyama 2017, 163; 2021a, 69, 76). Iguchi, Luta, and Andresen (2015, 134) state that traditional businesses aim to block regulations through political lobbying, but other businesses could challenge vested interests by accepting stricter rules. For this reason, it is important to examine changes within the business community and its effect on the policy-making process of climate change.

Moreover, it is doubtful whether the traditional business community is powerful as before. Takenaka (2017, 279, 283) suggests that the "centralization of policy making" is occurring within the process of Japan's domestic policy making. The political and administrative reforms have underpinned the role of the prime minister as well as politicians and government officials close to the prime minister. Contrastingly, the impact of interest groups and politicians belonging to the ruling party but excluded from the cabinet seems to have decreased. Furthermore, the political authority of government ministries and agencies has weakened, and bureaucrats are able to demonstrate their ability only when they are to legislate policies which politicians from the cabinet support. The centralization of policy making has become more apparent during the second Abe administration. This questions the relevance of existing work on Japan's domestic climate change policy-making process, which assumes the tight connection between energy-intensive industries, bureaucrats, and politicians and that conflictual coordination among government ministries shape policy making. To add on, industry may not

have a unified voice as in the past due to the rise of new business players, as mentioned in the previous paragraph. These points might indicate that Japan's climate change policy making is gradually shifting away from the traditional interests of industry.

Although climate change policy is somewhat affected by diplomatic affairs, policy decisions on climate change related to international negotiations have been largely determined through domestic, bottom-up procedures of Japan's political and administrative system. Government ministries and agencies have been involved in diplomatic negotiations on climate change by acting for the interests of respective stakeholders, and interest groups pressured government officials to make sure that their interests have been considered (Kubo 2014, 186). The domestic policy-making process of climate change has become more important than ever since the adoption of the Paris Agreement. Following the failure of the Kyoto Protocol, which its legally binding target on GHG emissions reduction led to the withdrawal of major nations, the Paris Agreement enabled each country to individually submit their own emissions reduction plans (Sofer 2016, 3). Aside from the global goal of keeping the rise of temperature below 2.0℃ and even 1.5℃ (Kameyama 2021a, 74), each country can now set GHG emissions reduction targets in the way they prefer, meaning that domestic actors will be influential in the climate change policy-making process more than ever (Sofer 2016, 3-4). Therefore, it is crucial to analyze the domestic policy-making process of climate change in Japan, especially if the way traditional actors get involved in policy making is changing.

Chapter 2: Policy-Making Process before and after Transition of Power

2.1 LDP Government (2001-2009)

2.1.1 Adoption of Kyoto Protocol Target Achievement Plan

This chapter examines policy making under the LDP government from 2001 to 2009 and DPJ government from 2009 to 2012. In the early 2000s, drastic reforms were carried out in Japan's political and administrative system. At the same time, the Japanese government made significant progress in domestic climate change policy making while the enforcement of the Kyoto Protocol was approaching (Kubo 2014, 197). One of the major achievements was the adoption of the Kyoto Protocol Target Achievement Plan in 2005 (Watanabe 2015, 115, 132). The Kyoto Protocol Target Achievement Plan included a consideration of an environmental tax and, although on the premise of voluntary participation, a domestic ETS (Kubo 2014, 198; Watanabe 2015, 115, 131). However, its main focuses were on energy conservation (Kubo 2014, 198) and the use of nuclear power (Watanabe 2015, 131), and listed initiatives were a gathering of existing programs. It encouraged voluntary measures which were favored by industry (Kubo 2014, 198), and the Keidanren Voluntary Action Plan on the Environment was institutionalized as a main countermeasure for industry's GHG emissions reduction (Watanabe 2015, 115). The actual implementation of an environmental tax and a domestic ETS were excluded due to industry's resistance (Kameyama 2017, 120). Thus, it was not until the latter part of the 2000s that differences were observed within Japan's national climate change policy making, when cabinet leadership was clearly displayed.

2.1.2 Proposal of Fukuda Vision and Action Plan for Achieving a Low-Carbon Society

From the late 2000s, discussions on climate change were accelerated in preparation for an international framework succeeding the Kyoto Protocol (Kubo 2016, 244, 259). At that time, many environment tribe members from the LDP, who were around at the Kyoto Conference, lost seats in Japan's Diet (Watanabe 2015, 121). It was the prime minister's initiative which supported climate change policy making. Behind was the government's will to avoid numerical targets inconvenient for Japan by leading international negotiations on the post-Kyoto framework (Kubo 2014, 199). Domestic debates on climate change were furthered by the Fukuda administration, which established an expert panel, the Council on the Global Warming Issue. The Assistant Cabinet Secretary's Office of the Cabinet Secretariat managed administrative work in cooperation with METI and MOE (Watanabe 2015, 122-23). The chairperson was served by Hiroshi Okuda, Executive Advisor of Toyota Motor, and members included Tsunehisa Katsumata, President of Tokyo Electric Power, and Akio Mimura, Chairman of Nippon Steel (Prime Minister of Japan and His Office 2009). Economic incentives to address climate change were discussed in the Subcommittee on Policy Measures in depth, and selected members included representatives of FEPC and JISF (Prime Minister of Japan and His Office 2008a). The interim report presented by the Subcommittee on Policy Measures in May 2008 revealed industry's negative views especially toward the effectiveness of a domestic ETS and concluded that considerations would be continued (Prime Minister of Japan and His Office 2008b, 2-3).

In June 2008, Prime Minister Yasuo Fukuda delivered a speech known as the Fukuda Vision just before the expert council revealed its proposal (Watanabe 2015, 124). Subsequently, the Action Plan for Achieving a Low-Carbon Society was announced in July 2008 (Kubo 2014, 198), which provided detailed measures for realizing the Fukuda Vision. Prime Minister Fukuda

declared that the achievement of a low-carbon society should be seen as a new opportunity for economic growth, not a burden on the economy (Watanabe 2015, 123). For GHG emissions reduction, Prime Minister Fukuda proposed a long-term target of sixty to eighty percent by 2050 from 2008 levels (Kameyama 2021a, 72). He assumed that a medium-term target of fourteen percent by 2020 from 2005 levels would be possible by piling up numbers from various sectors, but an official number would be set at some time in 2009. He also stated that the greening of the tax system must be pursued, including the introduction of an environmental tax, and an integrated domestic emissions trading market on a trial basis would be started in October 2008 (Watanabe 2015, 124). The proportion of renewable energy was to be greatly expanded (Kubo 2014, 198), increasing the amount of solar power by ten times by 2020 and forty times by 2030 (Dōman 2013, 90).

Details of Prime Minister Fukuda's plans implied that the fundamental structure of climate change policy had not changed. The integrated domestic emissions trading market was considered as a gathering of current programs managed by METI and MOE. While the expansion of renewables was included, nuclear power continued to be prioritized as a stable, zero-emissions energy source, which reflected the preference of dominant electric utilities (Kubo 2014, 198-99). Nevertheless, cabinet leadership progressed Japan's climate change policy making. Just before the proclamation of the Fukuda Vision, the LDP's Energy Strategy Joint Division, consisted of business tribe members, was appealed by power and iron and steel industries and showed disapproval of the launch of an ETS (Asahi Shinbun 2008). Still, Prime Minister Fukuda was able to provide an agenda for carrying out various measures. Moreover, power utilities and heavy industries denoted their participation to the trial domestic emissions trading market. While extremely reluctantly, they altered their stances to ensure success of the

Toyako Summit, which was to be hosted by Japan in July 2009 (Kubo 2014, 198-99). Unfortunately, Prime Minister Fukuda resigned soon after the cabinet approved of the Action Plan for Achieving a Low-Carbon Society (Watanabe 2015, 124), and the formulation of a mid-term GHG emissions reduction target and other policy measures were carried on to the Aso administration.

2.1.3 Formulation of Mid-Term Greenhouse Gas Emissions Reduction Target for 2020

The Aso administration established the Mid-Term Target Committee under the Council on the Global Warming Issue. The chairperson was served by Toshihiko Fukui, former Governor of the Bank of Japan, but industry's interest groups were excluded from members (Watanabe 2015, 124-25). To develop GHG emissions reduction scenarios and calculate related economic costs for reference (Kameyama 2017, 106), five research institutions were selected: the Institute of Energy Economics, Japan and Research Institute of Innovative Technology for the Earth affiliated with METI, the National Institute for Environmental Studies associated with MOE, and the Japan Center for Economic Research and Keio Economic Observatory which were more neutral (Kubo 2014, 200). Normally, METI and MOE would commission work to affiliated research institutions, respectively, and those institutes would provide analysis results close to the interests of each ministry's stakeholders. Nonetheless, this time more well-balanced organizations, such as the Japan Center for Economic Research and Keio Economic Observatory, were also selected, and research institutions collaborated beyond boundaries of government ministries under the Cabinet Secretariat. To check the validity of models presented by each research institution, the Mid-Term Target Committee established four working teams for model

analyses, which each consisted of officials from the five research institutions (Watanabe 2015, 125, 136).

However, as discussions went further, it was unlikely that the strong influence of industry on the policy-making process could be eliminated. Within the model analyses, the most valued aspect was the negative consequences of climate change countermeasures on economic growth, which industry highly cared about. Models for GHG emissions reduction expected business-as-usual scenarios that current economic conditions would remain unchanged, and new methodologies such as incorporating the positive effects of technological innovation were not adopted. Such methods could not provide enough evidence to replace conventional approaches. Moreover, data used for model analyses were chosen regarding the interests of METI and industry (Kubo 2014, 200). Statistics were provided through interviews with industry's interest groups, such as FEPC, JISF, the Japan Automobile Manufacturers Association, and Japan Federation of Housing Organizations (Watanabe 2015, 126). Members of the Mid-Term Target Committee expressed their concerns about economic burdens, hesitating to choose assumptions for a more drastic GHG emissions reduction target (Kameyama 2017, 106, 109). Under these circumstances, the four modeling teams used selected preconditions and evaluated six options for the mid-term target (Kameyama 2017, 109). Based on presented options, national discussions were held by arranging opinion exchanges, public comments, and opinion polls (Watanabe 2015, 128).

Although various stakeholders of government ministries were not able to directly participate in the decision-making process of GHG emissions reduction options, the Mid-Term Target Committee conducted interviews with business associations, labor unions, and environmental groups (Watanabe 2015, 128). Among the six presented options, industry strongly

supported a four percent reduction from 2005 levels, while environmental NGOs pushed for a twenty-five percent reduction from 1990 levels (Kameyama 2017, 110). Considering the stances of Keidanren, power utilities, and heavy industries, business tribe politicians of the LDP also supported a four percent reduction (Watanabe 2015, 128), disagreeing with environment tribe members (Kubo 2014, 201). To adjust between these conflicting stances, Prime Minister Taro Aso chose a fourteen percent reduction (Kubo 2014, 201). The number was cited by former Prime Minister Fukuda and supported the most among public surveys (Watanabe 2015, 128). Adding one percent to the original option by increasing the proportion of solar power, in June 2009, Prime Minister Aso decided on a mid-term GHG emissions reduction target of fifteen percent by 2020 from 2005 levels (Kameyama 2017, 110; Watanabe 2015, 128). The target itself was not much ambitious, since it was an eight percent reduction from 1990 levels, which meant only a two percent addition to the existing six percent reduction target under the Kyoto Protocol (Kameyama 2021a, 72; Watanabe 2015, 129).

2.1.4 Start of Trial Domestic Emissions Trading Market

Among the specific measures stated by Prime Minister Fukuda, the trial implementation of the domestic integrated emissions trading market started in October 2008. Around this time, METI and MOE had to work together within cabinet-led initiatives, so they began to coordinately interact with each other (Kubo 2014, 201; Watanabe 2015, 129). The two ministries increased the number of joint council meetings to reduce overlaps (Hirata 2018, 5). They also jointly managed some policy areas, including the ETS (Kubo 2014, 202). While ministry-level considerations on an ETS had already started, related government entities were instructed to establish a Study Team and work together from preparation (Watanabe 2015, 114-15, 134-35).

The trial market was kept voluntary with no mandatory cap due to industry's strong objection (Kameyama 2017, 106). Business associations and enterprises could set the level of GHG emissions reduction targets independently and choose whether to adopt an absolute cap on total emissions or a relative cap on emissions per unit of production (Kameyama 2017, 106; Watanabe 2015, 135). Still, the government was able to start a national-level initiative on emissions trading. On the contrary, an environmental tax could not be introduced, since METI and business tribe politicians disagreed, especially reflecting Keidanren's stance. The revenue of the petroleum and coal tax introduced in 2003 (Kawakatsu, Lee, and Rudolph 2017, 8-9) was co-managed by METI and MOE for GHG emissions reduction (Kubo 2014, 201), but this was not considered as an environmental tax (Kawakatsu, Lee, and Rudolph 2017, 8).

2.1.5 Change from Renewable Portfolio Standard to Excess Electricity Purchasing Scheme for Photovoltaic Power

The government also worked on promoting renewable energy, particularly solar power. Unlike the ETS, economic incentives for the expansion of renewables remained under control of METI. METI, power companies, and business tribe politicians disagreed with introducing a FIT, which would force power companies to purchase renewable energy at a certain price. Therefore, they supported the introduction of a renewable portfolio standard (Dōman 2013, 87), which obliges electric utilities to use a certain amount of renewable energy (Watanabe 2015, 105-106). The Japanese government decided to introduce the renewable portfolio standard in 2002 (Kameyama 2017, 131), but it remained ineffective since the targeted percentage for electricity generated by renewables was a mere several percent among the entire energy proportion (Dōman 2013, 87). The main reason for this situation was the dominant ten regional power utilities,

which limited the introduction of renewable energy by monopolizing power lines and controlling energy prices (Kameyama 2017, 131) so that other electricity generators could not freely participate in the electricity market. Power utilities thought that the cost of producing renewable energy was more expensive compared to that of introducing nuclear energy (Skea, Lechtenböhmer, and Asuka 2013, 39). They also argued that renewables would threaten the stability of energy supply (Ohta 2020, 12), and policy makers reinforced these logics.

Prime Ministers Fukuda and Aso both indicated that solar power would be prioritized (Watanabe 2021, 10-11), but they did not intend the implementation of a FIT. METI was against the FIT since the price of purchasing renewables would be borne by electricity consumers. However, environment tribe politicians from the LDP's Global Warming Prevention Headquarters proclaimed their aim to implement a FIT for solar generation (Dōman 2013, 90-91), and MOE supported their idea (Ohta 2020, 13). The DPJ, which was likely to win the upcoming elections, was also preparing a FIT scheme. Thus, METI had to change its stance to protect its interests (Dōman 2013, 90-91) and keep control over the process (Dewit and Iida 2011, 7; Ohta 2020, 13). In February 2009, METI announced the Excess Electricity Purchasing Scheme for Photovoltaic Power. Power operators were required to purchase surplus solar power from houses and business offices at prices almost as two times higher than before (Dōman 2013, 91). Although this partial FIT for solar power would still result in higher electricity prices, it was industry-friendly in the sense that it would support international competitiveness of solar-related manufacturers (Watanabe 2021, 27). The actual implementation of the new scheme was during the DPJ Government in November 2009 (Dewit and Iida 2011, 11). However, it could not contribute to an increase in the total amount of renewables within the energy supply (Watanabe 2021, 10-11).

2.1.6 Summary

In sum, during the LDP government in the first half of the 2000s, the exercise of cabinet leadership enabled the adoption of more progressive climate change policy frameworks and facilitated cross-boundary coordination between government ministries, which led to the implementation of policy measures to some extent. This was the consequence of the political and administrative reforms, which relatively strengthened the role of the cabinet and weakened the political influence of tribe diet members (Watanabe 2015, 136). However, politicians from the ruling LDP were still able to intervene in the policy-making process, and the negative effect of business tribe politicians remained rather than the positive influence of environment tribe politicians. METI tried to protect the interests of its ministry, in which they stood on the side of energy-intensive industries. Therefore, while industry's interest groups sometimes had to change their attitudes toward climate change policy due to the Prime Minister's initiative, vested interests were evident within Japan's domestic policy-making process of climate change. As a result, economic measures were somewhat enacted, but target numbers were kept unambitious and advantageous to industry, and the use of nuclear power was still valued to maintain stable electricity prices and energy supply rather than promoting renewable energy.

2.2 DPJ Government (2009-2012)

2.2.1 Announcement of New Mid-Term Greenhouse Gas Emissions Reduction Target for 2020

In September 2009, the DPJ realized a transition of power from the LDP (Kameyama 2021a, 72). The Hatoyama administration sought to achieve political leadership and its election

promises through “de-bureaucratization”. It attempted to reduce the LDP’s influence by eliminating vested interests of bureaucrats and their stakeholders from the policy-making process (Kubo 2014, 203; 2016, 264). One notable event was Prime Minister Yukio Hatoyama’s ambitious declaration of a mid-term GHG emissions reduction target of twenty-five percent by 2020 from 1990 levels (Kameyama 2021a, 72), although with the premise that major emitters, such as the US and China, would make similar commitments (Kubo 2014, 203). Behind was the government’s motive to lead international negotiations on the post-Kyoto framework and promote economic growth by innovative climate change countermeasures (Aburaki 2010, 7-9). In contrast to the formulation process of the previous target, Prime Minister Hatoyama did not consider the feasibility of the new target ahead of its announcement (Watanabe 2015, 137), and it was to be justified afterwards under cabinet leadership (Kubo 2016, 263). For measures to achieve the new medium-term target, Prime Minister Hatoyama explicitly mentioned the need of a domestic ETS, FIT, and an environmental tax. He later stated that the long-term target would be an eighty percent reduction by 2050 (Kurobe 2013, 46-47).

The Hatoyama administration established the Ministerial Committee on the Global Warming Issue under the cabinet, and below created was the Senior Vice-Minister Level Review Team to hold discussions on methods to fulfill the mid-term GHG emissions reduction target (Watanabe 2015, 137-38). The head was served by the Minister of National Strategy, and the Minister of Environment was appointed as secretary-general (Kubo 2016, 263). This reflected the fact that the DPJ government valued the role of ministers, vice ministers, and parliamentary secretary within policy making (Kamikawa 2017, 69). Furthermore, the Task Force was organized under the Senior Vice-Minister Level Review Team (Kubo 2016, 264) to conduct model analyses and cost calculations for the mid-term target (Watanabe 2015, 138). The

National Strategy Office of the Cabinet Secretariat oversaw general affairs of the Task Force (Kubo 2016, 264). Model analysis working groups were also formed by the five institutions selected under the Aso administration: the Institute of Energy Economics, Japan, Research Institute of Innovative Technology for the Earth, National Institute for Environmental Studies, Japan Center for Economic Research, and Keio Economic Observatory. In addition, an expert panel consisting of academics specializing in economics and heads of environmental thinktanks was established to evaluate the model analyses (Watanabe 2015, 138). Analysis results were to be used at COP15 in December 2009 as explanatory material for the mid-term target, so there was no time to newly select research institutions and have them conduct calculations (Kubo 2016, 264).

The Task Force seemed to have taken a step forward from the formation process of the previous target. This time, not only costs required to realize the mid-term target but also costs which would arise if insufficient measures were to be taken were considered within model analyses (Watanabe 2015, 138). In addition, the government ordered to include the positive effects of implementing means for achieving the target, such as the creation of new markets, industries, and innovation. This was clearly different from the Aso administration, which stressed that GHG emissions reduction was a costly burden (Kubo 2016, 263-64). However, the DPJ government could not avoid vested interests completely. The Task Force adopted the same analysis models used in the Mid-Term Target Committee under the Aso administration, which assumed no change in economic situations and emphasized the costs of addressing climate change (Dewit and Iida 2011, 8). This could have been easily expected considering the unchanged choice of research institutions. Some experts argued that models should be revised, but METI-affiliated institutions of the Institute of Energy Economics, Japan and Research

Institute of Innovative Technology for the Earth rejected such suggestions (Watanabe 2015, 138). In October 2009, the Task Force revealed an interim report that provided four different types of estimates to explain the twenty-five percent reduction target (Watanabe 2015, 138), but it was not able to justify the new target (Kubo 2016, 265).

2.2.2 Mid- and Long-Term Roadmap for Global Warming Measures and Domestic Emissions Trading Scheme

Discussions were furthered by the Mid- and Long-Term Roadmap Subcommittee set beneath MOE's Central Environment Council (Kubo 2016, 265) to present detailed measures for realizing the proposed GHG emissions reduction targets. This showed a partial return to the traditional process, where climate change policy was formulated at the ministry level reflecting the interests of MOE. Participants included representatives of industry, such as Tokyo Electric Power, Tokyo Gas, and Toyota Motor, but model analyses were done only by NIES (Watanabe 2015, 140), and researchers who had been analyzing positive effects of taking climate change measures were selected (Kubo 2016, 265). Based on the draft proposal revealed by the Minister of the Environment Sakihito Ozawa in March 2010**,** several working groups were established, and interviews toward a broad range of experts were conducted along with national debates. The interim report disclosed in December 2010 showed that the mid and long-term targets could be achieved. Concurrently, the government planned to review energy policy to coordinate with climate change policy (Watanabe 2015, 140-41, 146). METI presumably aimed to influence the government's decisions (Dewit and Iida 2011, 10), and it brought up a new energy plan which assumed the expansion of zero-emissions energy sources, mainly nuclear

power (Watanabe 2015, 146-47). The DPJ government's approval of such policy clearly favored vested interests.

Simultaneously with formulating the Mid- and Long-Term Roadmap, the DPJ government also aimed to implement a domestic ETS (Kubo 2014, 204). Following the Hatoyama administration's proposal of climate change abatement measures, MOE established the Domestic Emissions Trading Scheme Subcommittee under the Central Environment Council (Watanabe 2015, 142). Industry considered its voluntary action plans as sufficient (Iguchi, Luta, and Andresen 2015, 132) and remained strongly against a domestic ETS, arguing that it would hinder long-term technological development and international competitiveness and be ineffective in a country like Japan, which had already made tremendous progress in energy conservation (Watanabe 2015, 142-43). MOE's proposal was later to be integrated with METI's draft, which was closer to industry's stance. The initial plan prepared by MOE assumed that a mandatory, absolute cap on total emissions would be set, except for power utilities which were to be obliged to a relative cap on emissions per unit of production, precisely power generation. However, this plan was revised so that other energy-intensive companies would be exempted from the absolute target as well due to industry's insistence (Asahi Shinbun 2010, 4). In December 2010, the Domestic Emissions Trading Scheme Subcommittee revealed a report which concluded that considerations should be continued (Dewit and Iida, 10-11), which meant that a domestic ETS could not be introduced at this time (Watanabe 2015, 143).

2.2.3 Failure of Basic Act on Global Warming Countermeasures

The Hatoyama and Kan administrations were both not able to materialize most of the climate change countermeasures it upheld. The government was preparing the Basic Act on

Global Warming Countermeasures, which composed of the medium-term GHG emissions reduction target and a domestic ETS, FIT, and an environmental tax (Kurobe 2013, 47-48). This was because the existing Law Concerning the Promotion of the Measures to Cope with Global Warming was largely based on voluntary approaches (Kawakatsu, Lee, and Rudolph 2017, 2), and strategies adopted under the LDP government were mostly based on cabinet approval (Kameyama 2017, 115). Yet the new act received criticism from interest groups and trade unions of energy-intensive industries (Kameyama 2017, 115), including DPJ's main supporter, the Japanese Trade Union Confederation (Aburaki 2010, 18). Therefore, achieving the mid-term target highly depended on the expansion of nuclear power (Dewit and Iida 2011, 10; Kameyama 2021a, 72-73) which the DPJ favored to earn support from trade unions (Watanabe 2021, 29-30). Industry argued that both an ETS and environmental tax would be double regulation (Kameyama 2017, 134, 136); Keidanren mentioned that there was no need of measures other than industry's voluntary actions, while JISF condemned that a mandatory cap on emissions would affect economic growth and lead to carbon leakage (Aburaki 2010, 14). Thus, the domestic ETS remained as an extension of the trial market introduced by the previous LDP government (Dewit and Iida 2011, 10). In the end, the Basic Act on Global Warming Countermeasures could not pass the Diet (Kameyama 2017, 116; Kubo 2014, 203).

2.2.4 Formulation of Innovative Strategy for Energy and the Environment

The occurrence of the Great East Japan Earthquake and Fukushima Daiichi Nuclear Accident in March 2011 forced Japan to alter domestic climate change policy making. Prime Minister Kan chose to reconsider the mid-term GHG emissions reduction target under cabinet leadership since it relied on the increase of nuclear power. Shortly after the Fukushima Daiichi

Nuclear Accident, the Energy and Environment Council was launched. It was headed by the Minister of National Strategy, and the secretariat was served by the National Strategy Office of the Cabinet Secretariat (Kubo 2016, 266). The Energy and Environment Council was to compile policy options on climate change and energy separately presented by deliberative councils of MOE and METI and then conduct public debate. In charge of drafting future mid-term reduction targets and climate change countermeasures was the Subcommittee on Measures and Policies for 2013 and Beyond set under MOE's Central Environment Council (Kubo 2016, 267; Watanabe 2015, 149). Most members were the same as those of the Mid- and Long-Term Roadmap Subcommittee, but Tokyo Electric Power was excluded (Ministry of the Environment 2014), probably because it was responsible for the Fukushima Daiichi Nuclear Accident. The Options for Energy and the Environment provided three scenarios for GHG emissions reduction and the percentage of nuclear energy within the energy mix (Watanabe 2015, 150). The government also reviewed previous estimations on energy costs; although costs for nuclear energy and fossil fuels were increased, the numbers were still lower than that of renewable energy (Kameyama 2017, 131).

During this process, Prime Minister Kan quitted, replaced by Yoshihiko Noda. GHG emissions reduction options were checked by four modeling teams made up by the National Institute for Environmental Studies, Research Institute of Innovative Technology for the Earth, and university professors (Kameyama 2017, 134). In September 2012, the Energy and Environment Council publicized the Innovative Strategy for Energy and the Environment (Kameyama 2017, 135; Kubo 2016, 272). It stated that GHG emissions reduction by 2020 would be about five to nine percent and Japan would phase out nuclear power by 2030 and aim for approximately a twenty percent reduction of total GHG emissions by 2030 from 1990 levels

(Kurobe 2013, 49). The Innovative Strategy for Energy and the Environment also noted the expansion of renewable, geothermal, biomass, and hydro energy sources and reform of the electricity market by breaking down monopolies and supporting competition (Midford 2021, 204). Both pro-business and pro-environment actors criticized the Innovative Strategy (Kurobe 2013, 49); industry groups such as FEPC and the Federation of Electric Power Related Industry Worker's Unions of Japan (Ohta 2020, 22) were concerned that zero reliance on nuclear would lead to national burden and the loss of international competitiveness. Environmental groups considered measures for increasing renewables and energy conservation as unambitious (Kurobe 2013, 49). Therefore, the cabinet decided not to approve the Innovative Strategy for Energy and the Environment, which weakened its force (Skea, Lechtenböhmer, and Asuka 2013, 41). The DPJ government lost elections before forming any further policy plans (Kurobe 2013, 49).

2.2.5 Introduction of Tax for Global Warming Countermeasures

Among the three pillars promoted as climate change countermeasures, the DPJ government was able to introduce an environmental tax. The DPJ set up the Subcommittee for Global Warming Countermeasures Tax under the party's Project Team on Tax Reform to facilitate policy making within relevant government ministries (Kawakatsu, Lee, and Rudolph 2017, 9). Furthering discussions at the Government Tax Commission, the introduction of the Tax for Global Warming Countermeasures was decided in December 2010 (Abe 2011, 145). Although it was postponed due to the Great East Japan Earthquake, there was political pressure to achieve GHG emissions reduction and energy conservation by introducing an environmental tax, so it was officially implemented in October 2012 (Kawakatsu, Lee, and Rudolph 2017, 3; Skea, Lechtenböhmer, and Asuka 2013, 40). To lessen the amount of energy-related CO2

emissions, tax rates based on emissions were added to the existing petroleum and coal tax. The Tax for Global Warming Countermeasures was designed to avoid excessive burden on industry by broadly and thinly levying the tax and gradually raising tax rates. Tax exemptions and refunding measures under the existing tax were also maintained (Watanabe 2015, 145). As a consequence of adjusting between multiple interests (Kawakatsu, Lee, and Rudolph 2017, 10), the tax rate was relatively low compared to other countries and not enough to rapidly reduce emissions (Skea, Lechtenböhmer, and Asuka 2013, 40), but an environmental tax was finally implemented after years of struggle between MOE and METI.

2.2.6 Implementation of Feed-in Tariff

Another measure the DPJ government succeeded to introduce was the FIT. From its start, the DPJ government sought to alter the Excess Electricity Purchasing Scheme for Photovoltaic Power, which was decided based on the interests of METI (Dewit and Iida 2011, 11). To design the outline of a complete FIT for all renewables, Prime Minister Hatoyama organized a Project Team on Total Purchase of Renewable Energy under METI (Watanabe 2021, 29). However, same as the Task Force for examining the mid-term target, expert members remained unchanged from those who had been involved in policy making under the LDP government (Dōman 2013, 92). This resulted in a proposal which set same purchase prices and exemption measures for all kinds of renewables except for solar, which was inconsistent with the DPJ's election commitments (Watanabe 2021, 29, 31-32). A window of opportunity opened in the aftermath of the Fukushima Daiichi Nuclear Accident, where power utilities were strongly criticized for promoting nuclear power (Kubo 2014, 204). This urged the DPJ government to promote renewable energy than before. The LDP, considering the introduction of the FIT as inevitable,

also attempted to shape the formulation process through its Special Committee on General Energy Policy, which was not consisted of traditional business tribe members and politicians more eager to spread renewables were involved, such as Taro Kono (Watanabe 2021, 30, 33, 36).

The Kan administration managed to introduce the FIT by earning support from the LDP in exchange for Prime Minister Kan resigning (Kubo 2014, 203-204). Several changes were included in the revised proposal due to the intervention of the LDP. First was to set up a third-party committee for the decision making of purchase prices for renewables, which needed the consent of the Diet. This was mainly to address criticism against the interference of METI, which owed responsibility for causing the Fukushima Daiichi Nuclear Disaster (Dōman 2013, 95, 101). Second was the differentiation of tariffs for various renewable sources and installation scales, with the highest purchase price for solar power. Third was exemption measures for victims of the Great East Japan Earthquake and electricity-intensive industries, one of the major supporters of the LDP, from enduring the surcharge of renewables (Watanabe 2021, 37). The second point was especially important for renewable energy businesses to gain competitiveness and to promote renewables even in places with geographical constraints (Dōman 2013, 102). This indicated that in the wake of the Fukushima Daiichi Nuclear Accident, the strong influence of business tribe members had decreased (Dōman 2013, 101), while more renewable-friendly actors were gaining influence. In July 2012, a FIT for all renewables was introduced (Kameyama 2017, 131). Still small in absolute terms (Hughes 2021, 384), the share of renewables within the whole electricity supply became seven times higher (Watanabe 2021, 12).

2.2.7 Summary

The DPJ government attempted to display strong political leadership by removing METI and industry's interest groups from the policy-making process rather than facilitating coordination among government ministries. However, it was soon apparent that the government's attempt was failing. While the government expected the Minister of the Environment and MOE to lead climate change policy making clearly aiming to keep vested interests away, the strong influence of industry, METI bureaucrats, and business tribe politicians were embedded in the political and administrative structure (Kubo 2014, 204). The DPJ also gained support from trade unions of energy-intensive industries (Dewit and Iida 2011, 8), which restrained the government from taking drastic measures. This could be observed from the relatively unchanged members of deliberative councils compared to the LDP government, which allowed carbon-intensive industries to reflect their arguments to the policy-making process. This situation gradually changed after the Fukushima Daiichi Nuclear Accident in March 2011. Power utilities and policy makers who supported them were publicly condemned for increasing reliance on nuclear power, and the government strengthened its support for renewables (Kubo 2014, 204). Although with the background of the Fukushima Daiichi Nuclear Accident and the cooperation of LDP politicians, the DPJ government was able to realize some of the climate change policy measures it proposed.

Chapter 3: Policy-Making Process under Returned LDP Government

3.1 Abe Administration (2012-2020)

3.1.1 Revision of Mid-Term Greenhouse Gas Emissions Reduction Target for 2020

This chapter investigates policy making under the revisited LDP government from 2012 to 2021. The LDP returned to power in December 2012, and Prime Minister Abe soon announced that the government would reconsider the Innovative Strategy for Energy and the Environment from scratch (Kubo 2016, 273). The mid-term GHG emissions reduction target was to be revised, considering that it relied on the expansion of nuclear power which had halted after the Fukushima Daiichi Nuclear Accident. No prior discussions on target options were held at deliberative councils (Kubo 2016, 273), and the target was formulated solely through internal coordination within the government. MOE requested for an ambitious target, while METI insisted that an official target should not be generated until the status of nuclear power was to be confirmed. Chief Cabinet Secretary Yoshihide Suga stepped in, and it was agreed at the ministerial level that the number needed to be comparable to major nations (SankeiBiz 2013). In November 2013, the new mid-term target of a 3.8 percent reduction by 2020 from 2005 levels was revealed. This was a 3.1 percent addition from 1990, the base year of the Kyoto Protocol, meaning that GHG emissions would increase after fulfilling the first commitment period of the Kyoto Protocol (Kameyama 2021a, 73). The target remained temporary at this moment (Kubo 2016, 274).

3.1.2 Creation of Japan's Intended Nationally Determined Contribution

The next step was to formulate a GHG emissions reduction target for 2030. From the early 2010s, international negotiations on climate change had proceeded to create a legal framework succeeding the Kyoto Protocol, and to encourage discussions, participating countries were required to submit an Intended Nationally Determined Contribution (INDC), which included mitigation plans for 2020 and beyond (Kameyama 2021a, 73). A significant difference from past decision-making processes was that although deliberations were made at the ministry level, the cabinet's strong will was reflected (Kubo 2016, 274). This was a characteristic of the political and administrative system of the second Abe administration, where cabinet leadership was further strengthened so that the prime minister and the Prime Minister's Office led policy making (Takenaka 2017, 279-80). Prime Minister Abe informed involved government ministries that Japan's INDC should be made equivalent to those of the US and EU, which would reaffirm the country's leadership in climate change. However, he also valued lower energy costs to support economic growth (Incerti and Lipscy 2018, 629-30). This probably affected the composition of the energy mix (Kubo 2016, 275) which became the basis of the new mid-term target (Prime Minister of Japan and His Office 2015, 3). At this point, the government seemed to share similar views toward climate change policy with METI and traditional industries, which advocated the rehabilitation of nuclear power to lower electricity prices (Kameyama 2017, 138).

The INDC was discussed at joint meetings of the Subcommittee on Global Warming Countermeasures for 2020 and Beyond of MOE's Central Environment Council and Working Group for Consideration of Intended Nationally Determined Contribution of METI's Industrial Structure Council (Kubo 2016, 274, 276). Members from MOE's side mostly came from academia and environmental research institutions (Ministry of the Environment 2015a), while participants from METI's side were economic think tanks and traditional industry groups,

such as Keidanren, JISF, and the Japan Chamber of Commerce and Industry (JCCI) (Ministry of the Environment 2015b), Japan's traditional business federation for small and medium-sized enterprises. Representatives of industry did not show any acceptance of new measures. JISF revealed that seven industry groups, including itself, had sent a proposal to the government so their positions would be respected within policy making, which emphasized the importance of inexpensive and stable energy supply and lowering electricity prices to levels before the Fukushima Daiichi Nuclear Disaster. JCCI had similar views, calling for the complete reform of the FIT and restart of nuclear power plants whose safety had been confirmed, and stressing that climate change policy including the INDC should be consistent with energy policy. Both JCCI and Keidanren indicated that the country should contribute to international, rather than domestic, GHG emissions reduction (Ministry of the Environment 2015c) since it had made national energy conservation efforts to the greatest extent.

The outline of the INDC showed that the government accumulated existing measures which industry preferred. The mid-term target for 2030 was set to twenty-six percent compared to 2013 levels (Kubo 2016, 276); this was an eighteen percent reduction from 1990 and a 25.4 percent reduction from 2005 (Kobayashi 2015, 1). The base year 2013 was used partly because Japan experienced huge GHG emissions in that year (Sofer 2016, 4), making the new target slightly advantageous for the nation. A twenty-six percent reduction was the only option presented by the secretariat, with no preceding discussions on possible options conducted by the members of the joint council. Some members questioned that there was not enough evidence to prove the credibility of the new target (Kubo 2016, 276-77) and doubted that diverse opinions had been reflected to the INDC (Ministry of the Environment 2015c). Main plans for industry were based on Keidanren's Commitment to a Low-Carbon Society, and measures to support the

mid-term target were basically the improvement of energy conservation and efficiency compiled from various sectors (Prime Minister of Japan and His Office 2015, 9-13). The energy mix which relied on low-cost, base-load power sources of nuclear and coal-fired power blocked GHG emissions reduction of power utilities (Kobayashi 2015, 2), a major emitter from the energy sector. The mid-term target for 2030 was officialized in July 2015 within the INDC (Prime Minister of Japan and His Office 2015, 1).

3.1.3 Formulation of Plan for Global Warming Countermeasures

Situations slowly changed after the adoption of the Paris Agreement in December 2015, which became the driving force behind Japan's national climate change policy. To make domestic policy measures consistent with the new international agreement, the Japanese government first started to develop the Plan for Global Warming Countermeasures composing of specific measures to achieve the INDC (Ōshima 2016, 146-47). This was to be the first comprehensive, national scheme for climate change created after the Kyoto Protocol Target Achievement Plan. Prime Minister Abe ordered to lead international efforts by balancing economic growth and climate change abatement, and the Japanese government aimed to finalize the plan by its hosting of the Ise-Shima Summit in May 2016 (Ministry of the Environment 2016c). The content was discussed twice under joint meetings between the Central Environment Council and Industrial Structure Council (Ōshima 2016, 146); due to time constraint, it was difficult to have thorough discussions. At this stage, only representatives of energy-intensive sectors were selected as members from industry, with Keidanren, FEPC, and JCCI participating on behalf of both councils, and other members coming from Toyota Motor on MOE's side and

Japan Automobile Manufacturers Association, JISF, and the Japan Chemical Industry Association (JCIA) on METI's side (Ministry of the Environment 2016a; 2016b).

The main point which members of the joint meetings conflicted were whether to include actions beyond the scope of Japan's INDC. For GHG emissions reduction, some members claimed that the long-term target of an eighty percent reduction by 2050 should be explicitly mentioned, while others strongly disagreed that preconditions had changed from the past (Ōshima 2016, 147), referring to the Fukushima Daiichi Nuclear Accident. Keidanren, JCCI, and JISF criticized that the feasibility of the long-term target had not been fully examined through the energy mix compared to the mid-term target (Ministry of the Environment 2016c). However, MOE aimed to present a long-term target before the Ise-shima Summit to show Japan's contribution to climate change abatement since countries were to seek net-zero GHG emissions under the Paris Agreement. METI was initially against this idea but eventually altered its position, rethinking that a specific target would bring domestic investment needed for technological innovation to meet climate change goals (Asahi Shinbun 2016, 7). Therefore, the new plan stated that Japan would achieve the twenty-six percent target by 2030 and aim for the eighty percent target by 2050 (Prime Minister of Japan and His Office 2016, 6), even though the duration of time for the Plan for Global Warming Countermeasures was set to 2030 (Ōshima 2016, 147).

Specific countermeasures to reach the mid-term target did not much surpass efforts put together as the basis of Japan's INDC. There was a clear emphasis on energy conservation and efficiency or the use of nuclear power while expanding renewables (Ōshima 2016, 148), along with voluntary approaches (Sofer 2016, 15, 20) based on industry's independent action plans. The domestic ETS, which was one of the remaining economic methods MOE sought to introduce

to address climate change, was heavily criticized since it was not part of the commitments included in the INDC (Ōshima 2016, 147). Keidanren, FEPC, and JISF argued that a domestic ETS would hinder efforts in technological development. Moreover, FEPC emphasized that its introduction would be against Prime Minister Abe's objective of overcoming climate change with new technology or promoting domestic investment and strengthening international competitiveness of Japanese industries (Ministry of the Environment 2016c). Thus, although description of the domestic ETS was not deleted, it remained under careful consideration (Ōshima 2016, 147). Even so, the Plan for Global Warming Countermeasures mentioned that the achievement of GHG emissions reduction targets would be difficult by simply expanding conventional efforts and pledged the development of innovative energy technology, such as hydrogen (Prime Minister of Japan and His Office 2016, 6, 49-50).

One major deal METI and MOE made within the Plan for Global Warming Countermeasures was how to manage coal-fired power. Previously in July 2015, FEPC and new power producers and suppliers drafted its first common target for GHG emissions reduction. They were urged by METI and especially MOE, viewing the power sector's increasing GHG emissions as problematic. This was because power utilities had increased dependence on coal-fired power after the Fukushima Daiichi Nuclear Accident to substitute nuclear energy and looking ahead to the electricity market reform (Kameyama 2017, 154). The electricity sector quickly responded to the ministries' request, especially since large companies were planning to newly construct coal-fired power plants (Nihon Keizai Shinbun 2015, 1). In February 2016, Minister of the Environment Tamayo Marukawa accepted the construction of coal-fired power plants as long as they would be most energy efficient (Kameyama 2017, 174). The newly founded Electric Power Council for a Low-Carbon Society was to formulate GHG emissions

reduction plans, and MOE would check its progress. If GHG emissions of the power sector were to exceed the national-level target, MOE would enact stronger regulatory measures (Nihon Keizai Shinbun 2016, 2). Although MOE had already been participating in follow-up meetings of industry's voluntary action plans (Kubo 2014, 201-202), it strengthened authority over the once powerful electric utilities. The Plan for Global Warming Countermeasures was approved by the cabinet in May 2016 (Ōshima 2016, 146).

3.1.4 Discussions on Japan's Long-term Strategy under the Paris Agreement as a Growth Strategy

The Paris Agreement obligated countries to submit a long-term low GHG emissions development strategy for the mid-century, and both METI and MOE attempted to influence the formulation process of Japan's long-term strategy by establishing committees and starting discussions (Ōshima 2016, 147). MOE set up the Long-Term Low-Carbon Vision Subcommittee under the Central Environment Council, which held meetings with a variety of experts from the government, academia, industry, and environment groups (Ministry of the Environment 2017b, 95-97). Although members included representatives of Keidanren, FEPC, and JISF, it was notable that JCLP was invited as a member. Another participant was the Renewable Energy Institute (REI) (Ministry of the Environment 2017c, 94), which was not a business association but established by Masayoshi Son, Founder of SoftBank, who was a well-known advocate of renewables and the FIT (Dōman 2013, 93, 97). REI encouraged to implement usable technology and achieve drastic reductions, while JCLP urged to strengthen measures beyond energy conservation and the spread of renewables. Both JCLP and REI positively viewed carbon pricing as a method to promote technological innovation and social transformation; JCLP

particularly stated that it would contribute to industry's investment and cost-cutting in low-carbonization and decarbonization (Ministry of the Environment 2017a). It was meaningful that not only environmental NGOs but business groups and associations close to industry had become proactive toward combating climate change, revealing their stances within the policy-making process.

In March 2017, MOE publicized the Long-Term Low Carbon Vision, which stressed that GHG emissions reduction would be an opportunity for economic growth, and provided aspects for achieving long-term, significant GHG emissions reduction while solving economic and social issues (Ministry of the Environment 2017b, 1, 31-32). It reflected MOE's stance which highly regarded long-term, substantial GHG emissions reduction at the domestic level (Denki Shinbun 2018) by making full use of existing technology as well as strengthening energy conservation and employing renewables. In addition, the proposal recognized the importance of creating innovation and introducing new policy measures. The future use of low-carbon energy sources for more than ninety percent was encouraged, and carbon pricing was positively illustrated as an initiative to stimulate market activity (Ministry of the Environment 2017b, 42, 57, 62). This showed that the perspectives of climate-friendly business actors were incorporated. With the Long-Term Low Carbon Vision as a basis, the Long-Term Low-Carbon Vision Subcommittee continued debates on further perspectives which would be needed for Japan's long-term strategy. In March 2018, it revealed the Basic Concept Toward Long-Term Significant Reduction. Considering decarbonization as a business opportunity, it put more emphasis on the importance of technological development and innovation in the economic and social system, which were not a mere extension of the past (Ministry of the Environment 2018a, 2, 4, 10-11).

METI organized the Long-Term Global Warming Countermeasures Platform to impact the decision-making process of the long-term strategy (Ōshima 2016, 147). Participants were from traditional business associations of Keidanren and JCCI but also the financial industry, which were Morgan Stanley MUFG Securities and SMBC Nikko Securities (Ministry of Economy, Trade and Industry 2017, 84). The representative of Morgan Stanley MUFG Securities mentioned the necessity and urgency of creating innovation and making clean energy cheaper more than ever. Keidanren also agreed to achieve drastic GHG emissions reduction through innovative technological development. However, Keidanren claimed together with JCCI that the country should contribute to global GHG emissions reduction through its technological capacity rather than mitigating relatively small domestic GHG emissions; it further asserted that the long-term reduction target of eighty percent should be reconsidered if it becomes demanding to manage both the environment and economy. It also disagreed with regulatory measures of a domestic ETS and carbon tax, arguing that their introduction would have a negative impact on economic activities. SMBC Nikko Securities too stressed the role of nuclear power in terms of long-term GHG emissions reduction (Ministry of Trade, Economy and Industry 2016, 15-20, 31-32). Although industry's arguments were slightly more proactive than previously, its preferences seemed to be overall unchanged.

Economic policy measures were discussed within the Domestic Investment Expansion Task Force under the Long-Term Global Warming Countermeasures Platform, in which the representative of JISF participated and Keidanren and JCCI were invited as observers. Compared to the Long-Term Low Carbon Vision Subcommittee under MOE, interviews were mainly conducted with industry, such as manufacturing and financial companies, interest groups of energy-intensive sectors, and economic think tanks associated with industry (Ministry of

Economy, Trade and Industry 2017, 84-86). An official report of the Long-Term Global Warming Countermeasures Platform was released in April 2017, which highlighted the stances of traditional industries and METI that drastic GHG emissions reduction at the domestic level would be hard to accomplish (Denki Shinbun 2018) and stressed the difficulty of simultaneously achieving economic growth and GHG emissions reduction (Ministry of Economy, Trade and Industry 2017, 11). Part of the report was devoted to carbon pricing, mostly tracing the typical arguments of vested interests. It especially opposed to an ETS, citing that Japan had already introduced carbon prices at an internationally high level, and further measures would reduce the effectiveness of the current FIT and industry's voluntary actions (Ministry of Economy, Trade and Industry 2017, 62). In short, METI and MOE's reports showed the different views toward climate change mitigation of each ministry and even within the industry community.

At the same time, the Ministry of Foreign Affairs also set up an expert meeting, the Advisory Panel of Experts on Climate Change (Ministry of Foreign Affairs 2018b), to also prepare for the formulation process of Japan's long-term strategy. Then Minister of Foreign Affairs Taro Kono was a strong anti-nuclear politician and had been involved in the decision-making process of Japan's FIT scheme (Watanabe 2021, 36). Selected members seemed to share similar views with the minister, such as JCLP, REI, and the Network of Business Leaders and Entrepreneurs for a Sustainable Business and Energy Future (Ministry of Foreign Affairs 2018b), which later became member organizations of JCI (Japan Climate Initiative, n.d.). Private research specialists also participated, who were Miho Kurosaki, Analyst of Bloomberg New Energy Finance Japan, and Mari Yoshitaka, Chief Consultant of Mitsubishi UFJ Morgan Stanley Securities, Clean Energy Finance Division. Based on interviews with research institutions, environmental NGOs, and businesses committed to climate change (Ministry of Foreign Affairs

2018b), the Advisory Panel of Experts on Climate Change revealed a proposal in April 2018, which made recommendations on aspects to be included in the long-term strategy, such as strengthening energy efficiency, increasing the proportion of renewables, and developing technology to achieve decarbonization. The document also suggested the government to introduce carbon pricing at effective rates (Ministry of Foreign Affairs 2018a, 4-6). The proposal presumably reflected the stances of climate-friendly business actors.

Government-level discussions on Japan's long-term strategy started when Prime Minister Abe established an expert meeting, the Meeting on a Long-Term Strategy under the Paris Agreement as a Growth Strategy. Behind was the government's aim to formulate a strategy before Japan's hosting of the Osaka Summit in June 2019. The prime minister ordered relevant government bodies of the Cabinet Secretariat, METI, MOE, and the Ministry of Foreign Affairs to cooperatively manage general affairs of the meeting. The chairperson was served by Shinichi Kitaoka, President of the Japan International Cooperation Agency, and members from the business community included Chairmans Hiroaki Nakanishi of Keidanren, Takeshi Uchiyamada of Toyota Motor, and Shuzo Sumi of Tokio Marine Holdings; and Kosei Shindo, President of Nippon Steel and Sumitomo Metal (Prime Minister of Japan and His Office 2018a, 1-2). In comparison to the composition of the Council on the Global Warming Issue of the Fukuda administration, the power sector lost a seat while the financial industry was newly invited. This presumably reflected the fact that the financial sector was gaining more presence after the Paris Agreement, while power utilities were losing influence in the wake of the Fukushima Daiichi Nuclear Disaster. Prime Minister Abe clearly displayed leadership, describing how companies committed to climate change could attract investment and encouraging members to develop an

ambitious target rather than piling up sound pledges (Prime Minister of Japan and His Office 2018b, 1, 9-10).

Industry corresponded to the prime minister's initiative by making proactive commitments. Chairman Uchiyamada of Toyota Motor and President Shindo of Nippon Steel and Sumitomo Metal introduced their companies' efforts to achieve zero GHG emissions within the manufacturing process of products by 2050 and beyond (Prime Minister of Japan and His Office 2018c, 8; 2019a, 3-4). These measures were based on long-term visions individual businesses and industry associations had started to create from around the adoption of the Paris Agreement. Immediately after the expert meeting was founded, in October 2018, Keidanren made a statement to encourage member companies and industry groups to independently formulate a long-term action plan on climate change up to 2050. The objective of the business-level, long-term vision was to attract investment vital to promote technological innovation for climate change. This was explicitly different from Keidanren's Commitment to a Low-Carbon Society, which was more focused on measures in the short- to mid-term, such as introducing best available technology to promote energy conservation (Japan Business Federation 2019). Although bottom-up and would take a long period of time to realize, carbon-intensive industries made ambitious pledges on technological development to tackle climate change. This moved forward from previous government-level deliberations, which tended to compile existing measures to reduce emissions as much as possible.

Furthermore, industry's representatives showed relatively constructive attitudes toward coping with climate change. Chairman Uchiyamada of Toyota Motor mentioned that the Japanese government should set a vision or goal for decarbonization aside from the eighty percent GHG emissions reduction target for 2050 and accelerate technological innovation

through industry-academia-government collaboration to realize domestic decarbonization and attract investment. He also implied his support for renewable energy, saying that Japan should not be left behind of US and European countries, which had proceeded in the decarbonization of electricity and competitiveness of renewables. Chairman Sumi of Tokio Marine asserted that national innovation in the area of climate change would increase investment by financial institutions, if businesses were able to pursue cost competitiveness and technological strength at once. President Shindo of Nippon Steel and Sumitomo Metal had more prudent stances, backing nuclear power not only renewable energy and consenting to innovation for heavy GHG emissions reduction but opposing to carbon pricing, arguing that it would hinder industrial competitiveness. Chairman Nakanishi of Keidanren agreed that these were the opinions of the entire business community (Prime Minister of Japan and His Office 2018d, 2-3, 6-7, 10). Although the level of ambitiousness presented by members varied across sectors they represented, their comments uncovered the more forward-looking stances of leaders of energy-intensive companies than before.

Due to Prime Minister Abe's facilitation, a common direction was shared among experts, but the different positions of the environment and industry communities gradually became evident. After four official meetings, unofficial meetings were held twice to discuss the content of the draft proposal prepared by Chairperson Kitaoka (Asahi Shinbun 2019, 2), which was based on members' discussions and not the stances of government ministries (Mainichi Shinbun 2019, 3). The main point members disagreed was how thermal and nuclear power were treated within the draft. The initial draft suggested that coal-fired power should be eliminated in the long term, noting that it would cause reputational risk to Japan. However, Chairmans Nakanishi of Keidanren, Shindo of Nippon Steel, and Uchiyamada of Toyota Motor showed disapproval,

which reflected their favor of coal-fired power due to cheap generation costs. Thus, phrases were rewritten so dependence on coal-fired power would be lowered as much as possible. The draft also proposed that nuclear power was a realistic option to tackle climate change and would be needed to achieve carbon neutrality. Yet reflecting the stance of Minister Kono, the words were adjusted to reduce reliance on nuclear power to the furthest extent, although its use would still be discussed if the safety of the power plants could be reaffirmed (Asahi Shinbun 2019, 2).

In April 2019, the Meeting on a Long-Term Strategy under the Paris Agreement as a Growth Strategy revealed its proposal on perspectives to be included in Japan's long-term strategy. It said that the country should consider climate change countermeasures as a source of competitiveness rather than a cost and further domestic initiatives to lead international efforts on climate change. It stressed the need of business-driven efforts to attract investment for technological innovation and specifically proposed that Japan should aim for carbon neutrality at the fastest point in the latter half of the century, going beyond the current long-term target. Reliance on nuclear and coal-fired power was to be decreased, while renewable energy was to become a major power source. The report covered existing measures on energy conservation and efficiency but included the advancement of technological innovation based on industry's pledges. The description of carbon pricing was slightly aggressive, stating the need of expert-level, technical discussions (Prime Minister of Japan and His Office 2019b, 7, 11-12). While incorporated measures were based on vested interests' preference for bottom-up, voluntary approaches, it stepped forward from simply listing conventional efforts and assuming business-as-usual scenarios (Prime Minister of Japan and His Office 2019a, 8). This was a result of the prime minister's leadership, but also reflected changes in the business community, which had

started to aim for carbon neutrality encouraged by the financial industry (Prime Minister of Japan and His Office 2019b, 3).

Building on these recommendations, METI and MOE worked together on Japan's long-term strategy, and the draft was revealed at the joint meeting of the Central Environment Council and Industrial Structure Council. Keidanren and FEPC participated in both councils (Ministry of the Environment 2019a; 2019b), JCCI and Yoshitaka of Mitsubishi UFJ Morgan Stanley Securities were members of the Central Environment Council (Ministry of the Environment 2019a), and the Japan Automobile Manufacturers Association, JCIA, JISF, and Tokyo Chamber of Commerce and Industry came from the Industrial Structure Council (Ministry of the Environment 2019b). There were no substantive deliberations among joint council members beforehand and too many members participated from both councils, which some experts criticized that fruitful discussions could not be held. Some pro-environment members also cautioned that the content lacked clear objectives, meaning that it was a too ambitious vision, and the government should build a roadmap within the long-term strategy with more existing technology and policy options, which could contribute to immediate GHG emissions reduction. Industry organizations reiterated their positions, such as Keidanren's emphasis on Japan's contribution to global GHG emissions reduction rather than national efforts. Most industry representatives, strictly speaking Keidanren, JISF, JCCI, and Tokyo Chamber of Commerce and Industry, were especially against the introduction of carbon pricing (Ministry of the Environment 2019c).

Even so, some members of energy-intensive industry groups showed their commitments to counter climate change during the joint meeting. Japan Automobile Manufacturers Association, JCIA, and JISF shared their efforts on decarbonization in particular, and for

instance, JCIA explained that the chemical industry added an absolute GHG emissions reduction target other than a business-as-usual target within its Commitment to a Low-Carbon Society. Keidanren and FEPC still valued the use of nuclear energy on the premise of safety but commented that renewables must become a major power source (Ministry of the Environment 2019c). Finally, Japan was able to create the Long-Term Strategy under the Paris Agreement as a Growth Strategy in June 2019 just before the Osaka Summit, which illustrated the development of innovative technology that could reduce emissions and create business opportunities at the same time (Kameyama 2021a, 77-78). The document also pointed out to the importance of individual actions of businesses in addition to technological progress and promised the government's support of voluntary, industry-wide efforts; examples raised were setting Science-Based Targets, which stands for GHG emissions reduction targets consistent with the goals of the Paris Agreement, and participating in RE100, an international initiative which aims to run businesses only by the consumption of renewable energy (Prime Minister of Japan and His Office 2019c, 19, 24). Although bottom-up approaches were defined as industry's main initiatives, they were no longer limited to actions facilitated by Keidanren.

3.1.5 Deliberations on Utilization of Carbon Pricing

During the Abe administration, carbon pricing was not a primary concern of the government. However, the rate of the Tax for Global Warming Countermeasures introduced in October 2012 was relatively low and climate change actions were still based on voluntary commitments made by industry, which gave rise to voices supporting mandatory measures. Furthermore, the Plan for Global Warming Countermeasures mentioned that drastic reduction of GHG emissions would be difficult by simply extending ongoing efforts, and carbon pricing

regained attraction to achieve the long-term GHG emissions reduction target (Kōzai 2018, 126). Following the publishment of the Basic Concept Toward Long-Term Significant Reduction in March 2018, which considered carbon pricing as an economic incentive to strengthen competitiveness (Ministry of the Environment 2018a, 63), MOE established the Subcommittee on Utilization of Carbon Pricing under the Central Environment Council to continue discussions (Kōzai 2018, 127). Members came from traditional business groups of Keidanren, JISF, and FEPC, but businesses more committed to climate change were also invited, including representatives of JCLP and the Climate Change and Sustainability Service Team of EY Japan. Other than national research institutions, a researcher from private think tank Daiwa Research Institute was invited. Participants also included members of JCI (Japan Climate Initiative, n.d.), which were REI and CDP Worldwide-Japan (Ministry of the Environment 2019e), the Japanese branch of an international NGO which supports companies' disclosure of GHG emissions (Kameyama 2021a, 76).

Some business actors referred to changes in industry and showed eagerness toward strengthening carbon pricing. The attendee from EY Japan considered carbon pricing as a method to transform business models and shift toward decarbonization; he urged members to regard long-term value than short-term costs, that there would be no innovation without disruption. CDP Worldwide-Japan approved of carbon pricing to realize such transition. Related to these comments, REI referred to the risk of not introducing carbon pricing measures. However, Keidanren and JISF fiercely argued that carbon pricing would deprive of resources needed for innovative research and development and have a negative impact on international competitiveness of industries. FEPC insisted that carbon pricing in addition to existing energy taxes and a FIT would be a national burden and incur higher electricity prices. Although JCLP

and REI urged MOE to sort out issues based on the assumption that carbon pricing would be introduced (Ministry of the Environment 2019d), the intermediate summary of the Subcommittee on Utilization of Carbon Pricing revealed in August 2019 recapped both agreements and disagreements toward carbon pricing (Ministry of the Environment 2019e). Energy-intensive industries remained hesitant (Yomiuri Shinbun 2021, 3) and the Abe administration did not show willingness to introduce new carbon pricing initiatives, so discussions were interrupted at this point.

3.1.6 Review of Feed-in Tariff to Feed-in Premium

One major policy reform the Abe administration made at this time related to climate change was the alteration of the FIT. The FIT certainly contributed to the expansion of renewable energy in Japan (Incerti and Lipscy 2018, 617), but energy-intensive industries did not favor the scheme due to high electricity prices deriving from forced purchase of renewables (Kameyama 2017, 143). Another problem was that solar power spread so much that power utilities began to refuse purchasing solar power from around autumn of 2014 due to issues in transmission capacity (Kameyama 2017, 143). Prime Minister Abe valued low electricity prices to promote economic growth, and many METI officials supported the Prime Minister's Office (Kamikawa 2017, 76), so it was natural for the government to revise the FIT to lessen national burden and ensure equality between all kinds of renewables (Ohta 2020, 15). Therefore, the decision to reform the FIT was made in June 2016. Purchase prices of renewables were lowered, and power generators were required to follow stricter guidelines. Measures were formally introduced in April 2017 (Incerti and Lipscy 2018, 617). The new policy seemed to have

hindered further increase of renewable energy generation reflecting vested interests, which considered the FIT as a restriction on businesses and pursued lower electricity prices.

However, the review of the FIT was crucial to ensure independence and competitiveness of renewable energy businesses, and this indicated the decreasing influence of vested interests. This could be supported by the fact that the Abe administration carried out the liberalization of the electricity market, which put an end to the ten regional power monopolies and supported new entrants (Incerti and Lipscy 2018, 619); the power sector no longer obtained power to stop the reform (Kamikawa 2017, 70, 77). The government continued to review the FIT scheme and decided to introduce a feed-in premium in June 2020, which was to be officially implemented in April 2022. Under a feed-in premium, energy producers must sell renewable-generated power within the electricity market just as the same as other power sources but would receive a certain level of subsidy. The new scheme was important for stable expansion of renewable energy and making it a major power source by supporting power generation based on supply and demand of the market, such as increasing supply during peak demand periods with high market prices (Agency for Natural Resources and Energy 2021). While traditional power utilities still preferred nuclear energy and aimed to prevent new entrants of renewable businesses, their attempt had failed (Midford 2021, 124).

3.1.7 Summary

In sum, at the start of the Abe administration, policy changes made under the DPJ government were reverted; the mid-term GHG emissions reduction target was withdrawn and joint council meetings on climate change were revived. A feature of the administration was that climate change policy was formulated through bottom-up coordination among government

ministries, but the strong will of the cabinet was reflected to the policy-making process, much more than the LDP government before transition of power. The cabinet seemed to prefer METI's stances, and even the Central Environment Council of MOE became more business sided. However, following the adoption of the Paris Agreement, Prime Minister Abe showed strong leadership to generate ambitious pledges and urged industry to make significant contributions. In response, industry began to commit to innovative technological development clearly beyond current efforts in energy conservation, which even pro-environment actors questioned their achievability. Some changes observed were power utilities losing influence in policy making, with the government promoting renewables and MOE strengthening authority over the power sector. Moreover, climate-friendly industry organizations individually working on climate change were invited to MOE's deliberative committees. They were even supportive of mandatory measures of carbon pricing, but discussions were halted due to the opposition of traditional industry members.

3.2 Suga Administration (2020-2021)

3.2.1 Declaration of New Mid- and Long-Term Greenhouse Gas Emissions Reduction Targets

After Prime Minister Abe's sudden resignation, Yoshihide Suga became his successor in September 2020, promising to build on the political and administrative legacies of the Abe administration (Mainichi Shinbun 2021, 5). The Suga cabinet displayed great leadership due to Prime Minister Suga's strong will to eliminate sectionalism of government ministries and agencies and break down vested interests within various policy areas. There were also supporters of climate change policy, who were Shinjiro Koizumi, Minister of the Environment, and Taro

Kono, Minister of State for Regulatory Reform (Hasegawa 2022, 6). In October 2020, Prime Minister Suga declared that Japan would aim for carbon neutrality by 2050. He said that proactive climate change countermeasures would transform industrial structure and the social and economic system. For specific measures, he covered the development of innovative technology along with further improvement of energy conservation, maximum introduction of renewables, and use of nuclear power while prioritizing safety. He also mentioned that the country would alter its policy on coal-fired power generation (Suga 2020), following then Minister of Trade, Economy and Industry Hiroshi Kajiyama's announcement on the fade-out of inefficient power plants in July 2020 (Kameyama 2021a, 78). Although carbon neutrality had been raised from the previous administration, the achievement of a decarbonized society was to be accelerated.

While the new long-term GHG emissions reduction target was decided through political leadership, the government attempted to build domestic consensus afterwards. In December 2020, the National Forum on 2050 Carbon Neutrality was organized by the Cabinet Secretariat at the Prime Minister's Office. The objective was to build momentum toward decarbonization, and the government exchanged opinions with various stakeholders progressively working on climate change. Experts were selected from a variety of areas and generations, such as environmental advocates, youth organizations, and research institutions. Attendees from industry included Tsutomu Sugimori, Vice Chairman of Keidanren and Chairman of Eneos Holdings; Mami Ito, President of Nihon Dento Kougyo; Kahori Miyake, Co-Chair of JCLP and Chief Sustainability Officer of Aeon; and Yo Ozeki, President of Nissay Asset Management (Cabinet Secretariat 2020, 1-2). They were selected in a well-balanced manner, ranging from fossil fuels and metal industries to retail and financial sectors. The business community generally welcomed Prime

Minister Suga's commitment and showed willingness to increase efforts; even Keidanren was determined to confront climate change through technological innovation, saying that the economic system must be completely transformed from the basis. As Prime Minister Suga mentioned, Keidanren was no longer an opponent of climate change policy (Cabinet Secretariat 2020, 11-14, 17).

In April 2021, Prime Minister Suga proclaimed the new mid-term GHG emissions reduction target for 2030, which was a forty-six percent reduction from 2013 levels; he also mentioned that Japan would continue its challenge toward a fifty percent reduction (Kameyama 2021b). The revised target was again revealed under the prime minister's strong leadership. Government ministries gathered measures from different sectors to formulate the new target, but it only added up to somewhere around forty percent, and to what extent the target would be ambitious was left to the prime minister's decision. Minister Koizumi insisted that an ambitious target should be proposed which would promote industry's efforts, while Minister Kajiyama indicated that industry could not achieve such a number. Prime Minister Suga supposedly felt the need to make international contributions, having in mind that Japan was about to participate in the Climate Change Summit arranged by the US (Asahi Shinbun 2021, 2). The previous target was based on the energy mix developed beforehand, but this time, it was made before any revision of energy plans (Kameyama 2021b). Even members of advisory groups and expert panels on climate change were not notified of the number in advance. The new target was to be justified after its reveal by deepening policy measures through ministry-level deliberations (Ministry of the Environment 2021d).

3.2.2 Establishment of Climate Change Office and Expert Panel on Climate Change

Prime Minister Suga further presented his will to make the policy-making process of climate change more top-down by intervening in the political and administrative structure. The Climate Change Office was established under the Cabinet Secretariat, which was expected to lead coordination between METI and MOE, with the Prime Minister's Office at the center (Research Institute for Environmental Finance 2021). It managed general affairs of the Expert Panel on Climate Change, a cabinet-led initiative under the Global Warming Prevention Headquarters to discuss climate change policy from cross-sectional perspectives looking ahead to international conferences, such as COP26. The chairperson was served by Motoshige Ito, Professor of Gakushuin University (Cabinet Secretariat 2021e, 9). Experts from the business community included Nakanishi Hiroaki, Chairman of Keidanren, later replaced by Masaaki Tokura; Kahori Miyake, Co-Chair of JCLP and Chief Sustainability Officer of Aeon; Takashi Kunibe, Chairman of Sumitomo Mitsui Financial Group; and Kenichiro Yoshida, Chairman of Sony Group (Cabinet Secretariat 2021e, 9), which were both member companies of JCI (Japan Climate Initiative, n.d). Other participants were Miho Kurosaki, Chief Representative of Bloomberg New Energy Finance Japan, and Mari Yoshitaka, Principal Sustainability Strategist of Mitsubishi UFJ Research and Consulting (Cabinet Secretariat 2021e, 9), who had attended the advisory panel of the Ministry of Foreign Affairs under the previous administration. Just as the National Forum on 2050 Carbon Neutrality, industry members engaged in climate change actions were mainly invited.

The discussions of the Expert Panel on Climate Change were surely influenced by Prime Minister Suga's discourses, but also highly reflected the changed composition of industry's expert members and their more diversified interests. For instance, Kurosaki and Yoshitaka, research analysts engaged in the financial industry, explained shifts in corporate behavior to

address climate change and investment flowing into the field to support such actions (Cabinet Secretariat 2021a, 6-7, 11-12). Interest groups of energy-intensive industries, including JISF and JCIA, were invited for exchange of opinions, but they revealed their efforts toward decarbonization rather than reluctance (Cabinet Secretariat 2021c, 10-13). The proposal of the Expert Panel on Climate Change was finalized after Prime Minister Suga resigned, but it articulated that addressing climate change was now a prerequisite for businesses (Cabinet Secretariat 2021e, 5-6), which Co-Chair Miyake of JCLP and Chairman Nakanishi of Keidanren both indicated (Cabinet Secretariat 2021a, 3, 9). The report stressed the importance of not only technological innovation but its implementation which would lead to further innovation and the role of finance to attract investment to such efforts (Cabinet Secretariat 2021e, 5-6). While changes in industry were illustrated within the proposal of the Meeting on a Long-Term Strategy under the Paris Agreement as a Growth Strategy under the Abe administration, representatives of industry showed more assertive stances toward climate change.

More specifically, the proposal of the Expert Panel on Climate Change suggested the complete decarbonization of the energy sector, which had been responsible for a large proportion of Japan's GHG emissions and stated the maximum introduction of renewables and other clean and innovative energy-sources, such as hydrogen and ammonia, to achieve that goal (Cabinet Secretariat 2021e, 5-6). This part was suggested by most of industry's representatives, and although Chairmans Kunibe of Sumitomo Mitsui Financial Group and Tokura of Keidanren additionally referred to nuclear energy as a zero-emissions power source (Cabinet Secretariat 2021b, 4-5, 7, 9-10, 12), the document did not mention the rehabilitation of nuclear power generation unlike past expert meetings. In addition, it encouraged the government to introduce carbon pricing, which would be an incentive for business transformation and innovation to

achieve decarbonization, taking a carbon tax as an example (Cabinet Secretariat 2021e, 5). Surprisingly, even Chairman Tokura accepted carbon pricing on the assumption that it would lead to growth, showing willingness to create a level playing field (Cabinet Secretariat 2021d, 8). This was probably because Prime Minister Suga showed his intention to strengthen carbon pricing in December 2020 (Ministry of the Environment 2021a), but still, it was a huge advance that Keidanren altered its stance for the first time since the trial domestic emissions trading market prepared by the Fukuda Administration.

3.2.3 Review of Plan for Global Warming Countermeasures and Long-Term Strategy under the Paris Agreement as a Growth Strategy

At the same time, domestic climate change policy frameworks were to be redrafted through deliberations under advisory groups of government ministries. The joint council of the Subcommittee on Mid- and Long-Term Climate Change Countermeasures of MOE's Central Environment Council and Working Group for Consideration of Global Warming Countermeasures of METI's Industrial Structure Council was responsible for such reconsiderations (Ministry of the Environment 2021d). Back in March 2020, Japan submitted its "Nationally Determined Contribution", a formalized version of the INDC, but the content remained unchanged (Sustainable Japan 2022) despite that JCI, with less carbon-intensive retail and financial industries in behind, pressured the government to raise target numbers (InfluenceMap 2020, 16). Still, the government promised to start the review process along with the revision of the energy mix earlier than expected (Sustainable Japan 2022). Members from the Central Environment Council included participants of the Expert Panel on Climate Change, namely Co-Chair Miyake of JCLP and Yoshitaka of Mitsubishi UFJ Research and Consulting.

Representatives of Keidanren, JCCI, and JISF participated from the Industrial Structure Council (Ministry of the Environment 2022). Basic directions of national climate change policy had been decided through Prime Minister Suga's declaration of new mid- and long-term GHG emissions reduction targets, so members of the joint council were asked to delve into specific policy measures to reinforce those goals (Ministry of the Environment 2021d).

The actions of cabinet ministers also affected climate change policy making. Minister Kono stepped in the decision-making process of the new energy mix by organizing the Renewable Energy Regulatory Reform Task Force under the Cabinet Office in November 2020, which some of the members had participated in the Advisory Panel of Experts on Climate Change of the Ministry of Foreign Affairs during the previous government. Following this movement, JCLP asked for an increase in the target percentage of renewables within the energy mix to achieve net-zero GHG emissions by 2050 (Nihon Keizai Shinbun 2020), and Ministers Kono and Koizumi continued to pressure METI to prioritize renewables (Toda and Ōtsu 2021). As a result, the proportion of renewable energy was increased within the energy mix, largest among various power sources, while the target percentage for nuclear and fossil-fuels either remained unchanged or decreased (Hasegawa 2022, 7). The revised Plan for Global Warming Countermeasures and Long-term Strategy under the Paris Agreement as a Growth Strategy also gave top priority to renewable energy and referred to clean energy sources, such as hydrogen and ammonia, while reducing reliance on nuclear and thermal power and stated the reconsidered mid- and long-term GHG emissions reduction targets (Prime Minister of Japan and His Office 2021a, 11, 53-54; 2021b, 4, 20-22). These frameworks were adopted under the next administration, but they fully incorporated the Suga cabinet's initiatives.

Furthermore, the revised policy plans reflected the different positions of business actors. Within joint council meetings, interest groups such as Keidanren and JISF repeated their stances on maintaining industry's voluntary action plans to steadily reduce GHG emissions by implementing best available technology (Ministry of the Environment 2021d; 2021e). On the contrary, JCLP mentioned that businesses should use the new mid-term target to increase competitiveness and realize transformation of industrial structure (Ministry of the Environment 2021d). JCCI also introduced some positive comments from member corporations, which said that energy conservation efforts of small to medium enterprises would have an impact on decarbonization or considered innovation toward decarbonization as a business opportunity, with expectations of a new market to be created (Ministry of the Environment 2021e). Thus, other than industry's voluntary action plans coordinated by Keidanren, the government's support of corporate management in decarbonization was stated, such as mitigating GHG emissions within the entire value chain. As Prime Minister Suga pledged, professional discussions on a carbon tax and a domestic ETS were to be proceeded (Prime Minister of Japan and His Office 2021a, 32-33, 77; 2021b, 8, 34, 101). Changes in policy frameworks suggested that the opinions of climate-friendly industries were more valued than before.

3.2.4 Discussions on "Growth-Oriented" Carbon Pricing

In December 2020, Prime Minister Suga ordered Ministers Koizumi and Kajiyama to further considerations on "growth-oriented" carbon pricing through cooperation. Due to the prime minister's facilitation, METI and MOE joined each other's advisory groups as observers. MOE's Subcommittee on Utilization of Carbon Pricing restarted its deliberations (Ministry of the Environment 2021a), and the composition of members stayed the same as before, except for

JCCI being newly invited (Ministry of the Environment 2021c, 4). Throughout the meetings, businesses and relative institutions committed to climate change mitigation reaffirmed the significance of strengthening carbon pricing, especially a carbon tax and domestic ETS. JCLP underlined that carbon pricing could expedite transition to a decarbonized society and economic growth since financial resources from a carbon tax and an ETS could be used for technological development or investment in energy conservation. The representative of EY Japan claimed that a delay in implementation of carbon pricing would conversely lead to a decline in competitiveness, considering that Japanese industries may be exposed to international carbon border adjustment mechanisms. Attendees including REI and CDP Worldwide-Japan demanded that MOE move on to the phase of discussing institutional designs and specific frameworks of carbon pricing and the government make policy decisions on its implementation (Ministry of the Environment 2021b).

Nonetheless, traditional business associations were still hesitant to adopt carbon pricing. JISF especially argued that its situation differed from JCLP; energy-intensive, material industries had no practicable alternative to existing technology, so an increase in the surcharge of the FIT and subsequent rise in electricity price would threaten business survival (Ministry of the Environment 2021b). The interim summary of the Subcommittee on Utilization of Carbon Pricing revealed in August 2021 listed both arguments for and against carbon pricing measures, including a carbon tax and an ETS with a cap on absolute volume of emissions. Similar to the previous report published in August 2019, it reflected the negative views of vested interests, such as concerns about higher electricity prices or burdens on small to medium enterprises (Ministry of the Environment 2021c, 11, 13) and did not step into specific institutional designs as many experts asked for. However, the last chapter was dedicated to explanations of the relationship

between existing systems of energy and environmental taxes, FIT, and Keidanren's Commitment to a Low-Carbon Society and carbon pricing, how new initiatives could encourage more efforts. The subcommittee also made use of analysis results of economic models provided by the Value Management Institute and National Institute for Environmental Studies as reference material, which showed positive effects of carbon pricing (Ministry of the Environment 2021c, 44-47, 51-53). These parts indicated MOE's proactiveness toward enacting further measures.

METI began discussions on carbon pricing under the Study Group on Ideal Economic Approaches for Achieving Worldwide Carbon Neutrality. More than half of the members came from traditional business and industry groups, which were Keidanren, FEPC, JCCI, JCIA, and JISF (Ministry of Economy, Trade and Industry 2021, 35-36). The interim summary revealed in August 2021 focused on strengthening voluntary carbon pricing. It proposed the concept of the Carbon Neutral Top League, a new ETS which was to be based on voluntary participation of individual companies, with neither a cap on total, absolute volume of emissions nor penalties for failing to meet emissions reduction targets (Ministry of Economy, Trade and Industry 2021, 24-29, 30-31). The proposal reflected the reluctant viewpoints of the traditional industry community toward regulatory methods and METI's position which was cautious about introducing carbon prices beyond current energy taxes (Yomiuri Shinbun 2021, 3). A few months before both METI and MOE publicized interim reports, in June 2021, Prime Minister Suga clarified that voluntary, market-based carbon pricing should be promoted along with specialized, technical discussions on a carbon tax and an ETS (Ministry of the Environment 2021c, 50). At this point, METI's position seemed to be valued rather than MOE's aim to strengthen mandatory measures.

Prime Minister Suga's words also reflected the different opinions even within industry. As observable from remarks within deliberative committees, JCLP supported a carbon tax along

with an ETS; in July 2021, it submitted a written opinion to the government which requested to further institutional designs of carbon pricing, arguing that a delay in its introduction would decrease competitiveness of Japanese industries (Japan Climate Leaders' Partnership 2021). Keidanren also showed understanding to some extent. However, JCCI had more careful views, and JISF was strictly opposed to carbon pricing, arguing that financial sources for tackling climate change would be taken away if it were to be introduced (Yomiuri Shinbun 2021, 3). When members of MOE's Subcommittee on Utilization of Carbon Pricing were informed of the government's plans, many pro-environment experts argued that carbon pricing on a voluntary basis would be ineffective in reducing GHG emissions drastically and restated the importance of introducing regulatory and market-based measures (Ministry of the Environment 2021b). Nevertheless, the new ETS formulated by METI assumed the participation of independent companies, not industry organizations. This would be somewhat more effective in reducing emissions of each company, a bit more aggressive compared to the trial domestic emissions trading market announced during the Fukuda administration, which allowed industry groups to participate.

3.2.5 Summary

In sum, during the Suga administration, the exercise of cabinet leadership lead to progress in climate change policy, based on the prime minister's strong desire to eliminate bureaucratic sectionalism and vested interests. Prime Minister Suga's announcement of new mid- to long-term GHG emissions reduction targets clearly encouraged relevant government ministries and stakeholders to address climate change, although many of the policy frameworks discussed under the administration were officially adopted after the prime minister resigned. In

addition to the prime minister's leadership, the emergence of more climate-friendly businesses and industry groups and their participation in the policy-making process enabled the government to be more proactive toward climate change abatement. Less energy-intensive industries became involved in not only ministry-level deliberations but also cabinet-led initiatives, in which they supported for more ambitious targets and policy measures; one example was carbon pricing, which discussions had been constrained after the Fukushima Daiichi Nuclear Accident. This did not mean that vested interests were completely excluded from the policy-making process of climate change, and the government's consideration toward carbon-intensive business associations could be examined from adopted policy measures. Still, both Prime Minister Suga's willingness and industry's support of his decisions clearly advanced Japan's national climate change policy making, realizing a shift from aiming for low carbonization to decarbonization.

Chapter 4: Discussion

This chapter elaborates on important industry stakeholders regarding Japan's domestic climate change policy and their interests. It identifies for what reason and in what way have the interests of certain business players changed and what kind of outcome has been generated due to those changes. In the past, scholars have written about the "greening" (Schreurs 2009, 218) of Japanese industry: that it had become environmentally friendly to earn a better public image or evade any new regulations and taxes to be enacted. Some businesses showed more substantial differences working together with environmental NGOs; one example was the establishment of environmental foundations by companies. Still, the presence of such businesses was limited, for industry was generally reluctant to allow environmental groups participate in the decision-making process of various environmental issues, not to mention climate change (Schreurs 2009, 222-24). This situation lasted until the early 2010s, extending across the LDP and DPJ governments; power utilities and iron and steel makers, represented by industry groups and trade unions, remained very powerful within the policy-making process. Thus, Japan had to wait until the occurrence of the Fukushima Daiichi Nuclear Disaster for such industries to lose influence and acceptance of Paris Agreement for more climate-friendly businesses to emerge and come to participate in government-level discussions on climate change policy.

The most influential business actors in progressing Japan's climate change policy are JCLP and JCI, which have led business transformation. JCLP is a pure business group consisted of more than two hundred companies (Japan Climate Leaders' Partnership, n.d.). JCI is made up of businesses as well as local governments, universities, research institutions, and environmental groups. Nearly five hundred corporations and business organizations have joined, including

banks and investors (Japan Climate Initiative, n.d.). The number of members participating in the two organizations have been continuing to increase (Japan Climate Initiative, n.d.; Japan Climate Leaders' Partnership, n.d.; Kameyama 2021a, 76), but especially JCLP has grown about sevenfold in the past five years (Japan Climate Leaders' Partnership, n.d.; Kameyama 2021a, 76). JCI and JCLP have partnered up with each other (Japan Climate Initiative, n.d.), and both organizations have been increasing their involvement in national climate change policy making to enable Japan's transition to a decarbonized society. They have played a vital role in aggregating the stances of climate-friendly corporations and furthermore expanding the policy network of climate-friendly businesses by strengthening connections: domestically with government players of MOE and cabinet members eager toward climate change abatement and globally with international environmental NGOs supporting businesses to let them properly address climate change risks.

For specific sectors, less energy-intensive industries have increased participation in the policy-making process of climate change. During the returned Abe and Suga administrations, industry members invited to national deliberative councils became more diversified, including financial, retail, services, technology, and renewable energy businesses, being member organizations of either JCLP or JCI. Above all, the role of the financial industry should be highly appreciated. The financial industry has been most sensitive toward changes in the global business environment and urged companies to adopt climate-friendly measures. It has provided financial support to companies aiming to drastically reduce GHG emissions; for example, financial institutions have supported the development of innovative decarbonization technology and switching to renewable energy instead of coal-fired power. This attitude of the financial industry has promoted not only the actions of climate-friendly businesses but also the transformation of

conventional, carbon-intensive businesses. The financial industry was one of the first actors to participate in cabinet expert panels among businesses committed to climate change, replacing the power sector under the second Abe administration. During the Suga administration, various financial institutions and analysts from the financial sector secured seats in expert councils along with other member companies of JCI and JCLP, while manufacturing industries in addition to power utilities were not invited as official expert members.

The interests of climate-friendly business players differ from those of traditional business actors. They support for zero emissions at the domestic level rather than just low carbonizing the economy and contributing to global GHG emissions reduction. To achieve this goal, they promote climate-friendly measures, such as fully implementing clean energy sources and be imposed to mandatory carbon pricing methods, even if they might hurt business in the short term. This is because they recognize decarbonization as a business opportunity which would become more a revenue than burden in the long term and not addressing climate change would be riskier and more harmful to their business, considering that the world is certainly moving toward net-zero. As Japanese businesses become increasingly internationalized, they might suffer from severe regulatory measures in foreign countries meeting the challenge of climate change, if domestic measures are not taken adequately. Therefore, climate-friendly industry groups and companies have urged the Japanese government to accept global trends of domestic climate change policy to maintain the competitiveness of Japanese industry. The foundation of JCLP and JCI led to the establishment of a kind of arena for individual companies having the above interests to cooperate with each other, becoming more effective in the policy-making process.

Due to the interests of such climate-friendly businesses and their reflection in the decision-making process of climate change, different policy outcomes have been generated. Firstly, Japan's domestic climate change policy has made a shift from low carbonization to decarbonization, which means that climate change countermeasures can no longer remain to the enhancement of energy efficiency and conservation. Secondly, Japan has been able to introduce policy measures which energy-intensive industries have been against, but new business players have accepted. The government has increased support for clean energy sources, such as renewable and hydro power, while nuclear energy is not as valued as before. Carbon pricing initiatives have been more frequently discussed; schemes to enhance the competitiveness of renewable energy have been implemented despite the resistance of traditional industries, and an ETS seems to be in preparation, even though it may result in stricter regulations on the business community. Thirdly, climate change abatement measures, particularly those of industry, are not limited to conventional efforts anymore. Previously, industry's efforts were mainly based on Keidanren's voluntary action plans. However, newer initiatives beyond Keidanren's scope have been adopted by climate-friendly companies and industry groups and incorporated in national policy. Some examples are Science-Based Targets and RE100, which are both globally recognized for enabling more radical GHG emissions reduction.

Another imperative stakeholder is the traditional business community, including energy-intensive industries and their interest groups, specifically Keidanren, JISF, or FEPC. For a long time, these actors were criticized for being heavily responsible for Japan becoming a laggard in climate change policy. They considered climate change countermeasures as a constraint on their business and claimed that climate change policy should be in accordance with energy policy to avoid stronger actions. Thus, efforts were concentrated on energy conservation and efficiency,

which would have a limited effect on energy supply, or contributing to global GHG emissions reduction through Japanese industry's technological capability rather than curbing domestic emissions. Carbon-intensive industries pursued lower electricity costs and favored nuclear energy as a cheap, stable energy source. They were also against regulatory economic measures to internalize the external costs of climate change, such as a FIT, environmental tax, and domestic ETS, arguing that such methods would take away the sources of innovation and hinder international competitiveness of industry. Specific opinions varied across sectors; for instance, power utilities were largely opposed to a FIT and iron and steel makers were more disagreeing with a domestic ETS. Yet they had the same interests in prioritizing economic and industrial growth instead of protecting the environment.

However, these conventional interests of carbon-intensive industries slightly changed throughout the years. Energy-intensive industries began to understand that climate change countermeasures might be a new source of competitiveness and offer business opportunities rather than simply being a burden on industry or the domestic economy; developing novel technology or introducing clean energy sources would induce investment necessary to tackle climate change. Some global companies voluntarily started to strengthen climate change actions after COP21, being aware that Japan might be left behind of other major nations increasing investment in climate-related areas and racing to boost cost competitiveness of renewables. Most important was Keidanren's shift toward decarbonization. Keidanren improved plans on climate change noticeably under the regime of former Chairman Nakanishi. Serving the role as the leader of Japanese industry, Keidanren clearly affected the directions of various industries, although some companies reluctantly followed Japan's largest business organization. Of course, key driving factors were international pressure and the strong will of the prime minister other than

industry's change in interests, but the Fukushima Daiichi Nuclear Disaster and Paris Agreement created an atmosphere for climate change policy to move ahead. The financial industry also contributed to such changes by supporting, or sometimes pressurizing, traditional industries to be more climate sensitive.

Changes of interests within the traditional business community have also brought different policy outcomes. One main point is strengthened government support for technological development. This is because even energy-intensive industries have become more proactive toward drastic technological innovation, more than just saving energy to achieve decarbonization. While such development might take a long time to be visible, it is a major step forward that industries are working on initiatives with great difficulty. Subsequently, more carbon pricing measures are likely to be introduced, and government documents have given priority to renewable energy. These changes have been made mostly due to the interests of climate-friendly businesses, but traditional businesses have too made contributions. Energy-intensive industries do not completely accept carbon pricing, but at least they have agreed to its implementation as long as it contributes to growth. Although carbon-intensive industries still prefer stable, zero-emissions power sources such as nuclear and fossil fuels, they have approved of strengthening other clean energy sources. Lastly, even energy-intensive industries have strengthened voluntary target numbers or started efforts beyond Keidanren's action plans, which have led to more aggressive climate change policy frameworks. Even though these policy outcomes may be minor changes, a shift from low carbonization to decarbonization would not have realized without such movements of traditional industries.

Conclusion

This thesis analyzed Japan's domestic climate change policy-making process, especially focusing on how industry and pro-business policy actors have affected policy making. This thesis started from questioning the relevance of work on Japan's policy-making process of climate change, which were based on the assumptions that vested interests had been formulated among industry, supported by bureaucrats and politicians, and policy had been shaped through conflicts raised between government ministries. Institutional changes surrounding traditional industries and the rise of new business players indicate that industry may not have a unified stance as before, and the strengthening of cabinet leadership may have led to policy making slowly shifting away from vested interests of industry. To address these issues, this thesis first questioned whether the composition of influential sectors within industry have changed, and if so, to what degree have those changes been reflected in Japan's domestic policy-making process of climate change. It also questioned whether traditional, vested interests have been overcome by structural changes in the political and administrative system and internal changes within the business community itself. By posing these research questions, this thesis attempted to examine whether the way industry gets involved in the policy-making process of climate change has altered, encouraging the Japanese government to adopt more progressive climate change countermeasures.

This thesis found out that energy-intensive sectors are still influential within industry, but more climate-friendly companies and industry groups have come to participate in government-level deliberative councils, which has progressed Japan's climate change policy making. During the LDP government in the early 2000s, energy-intensive companies and their interest groups

retained power to affect domestic climate change policy making, gaining support from METI and business tribe politicians. The DPJ government aimed to eliminate such traditional industry groups and policy makers from decision-making processes. However, the DPJ earned support from trade unions of energy-intensive industries, which blocked the government from realizing ambitious policy measures before the Fukushima Daiichi Nuclear Disaster. This situation gradually changed during the revisited LDP government. At its start, the Abe administration seemed to prefer METI's stances, and even MOE became more industry friendly. Yet especially the adoption of the Paris Agreement gave rise to more climate-friendly industries and business organizations, which started to participate in MOE's deliberative councils. The influence of these players was initially limited, but they eventually emerged under the Suga administration. Companies individually working on climate change became involved in not only ministry-level discussions but also cabinet-led initiatives, in which they even supported for regulatory measures.

The main argument of this thesis is that although the stances of traditional industry members have not much changed and are still considered within Japan's national climate change policy making, strong cabinet leadership as well as the participation of climate-friendly enterprises and industry groups in the policy-making process have clearly enabled the government to adopt more aggressive policy frameworks and measures. Cabinet leadership was demonstrated after the political and administrative reforms under the previous LDP and DPJ governments, but vested interests were still powerful within the policy-making process. The role of the cabinet has been further strengthened under the revisited LDP regime; both Prime Ministers Abe and Suga showed strong leadership to formulate ambitious pledges and urged industry to make significant contributions, and less energy-intensive industries supported their

leadership. Industry began to commit to climate change countermeasures which were clearly beyond conventional efforts. Traditional industry groups continue to secure seats in government committees, and their reluctance toward mandatory measures or favor of nuclear power can still be examined. However, even such actors have started to think that working on climate change attracts investment needed for growth instead of simply a burden. In this sense, it could be argued that vested interests are not entrenched in the policy-making process as in the past.

The findings of this thesis indicate the importance of strong cabinet leadership to facilitate cooperation among government ministries and incorporate diverse interests in policy frameworks. However, when the strong will of the cabinet is reflected to the policy-making process, the basic content of policy is decided before any substantial discussions, and it becomes more difficult to formulate accountable and feasible policy options, which is clearly an undesirable condition for policy formulation. Furthermore, when cabinet members extremely value the positions of certain actors, such as climate-friendly businesses, that might lead to the creation of newly vested interests. The contributions of the business community to climate change should be respected considering its past reluctance, but domestic climate change policy cannot proceed without the contribution of various government bodies and actors other than industry. Currently, the cabinet plays a crucial role in policy coordination, but one possible solution is to establish an individual organization to support decision making regardless of the interests of politicians, bureaucrats, and their stakeholders; for instance, the proposal of the Expert Panel on Climate Change under the Suga cabinet raised the UK Climate Change Committee as an example (Cabinet Secretariat 2021e, 1). Climate change policy should be made for “public interests”, not vested interests.

After the resignation of Prime Minister Suga, the strongest supporters of climate change policy diminished from the cabinet, and the direction of Japan's climate change policy has become much more uncertain. Prime Minister Fumio Kishida took over Suga's position, but he appointed pro-nuclear politicians of the LDP as ministers of his cabinet, and it was likely that the government would slow down actions on climate change (Hasegawa 2022, 12). Keidanren also revealed its unchanged support for nuclear power as an established, decarbonized power source in a recent policy proposal. Still, it also showed understanding toward an ETS with a mandatory cap on GHG emissions, stating that it would be a reasonable option than a carbon tax if an appropriate system could be designed with burdens on industry reduced (Japan Business Federation 2022, 22-24, 35-36). Moreover, Prime Minister Kishida has revealed that Japan would introduce an ETS from 2026 and onward, which not only power utilities but wholesalers and trading companies of fossil fuels are to bear certain costs (NHK NEWS WEB 2022). Although with the background of cabinet leadership and international pressure to reduce GHG emissions, Japan may finally be able to introduce a mandatory ETS after more than two decades of deliberations. It may be an incremental change, but Japan's domestic climate change policy is making progress.

Appendix

Timeline of Major Events

Year	Month	Event
2008	June	Proposal of Fukuda Vision
		Cabinet Approval of Action Plan for Achieving a Low-Carbon Society
	October	Trial Implementation of Domestic Integrated Emissions Trading Market
2009	June	Announcement of 15% GHG Emissions Reduction Target for 2020
	September	Declaration of 25% GHG Emissions Reduction Target for 2020
	November	Introduction of Excess Electricity Purchasing Scheme for Photovoltaic Power
2010	December	Failure of Basic Act on Global Warming Countermeasures
2012	July	Introduction of FIT
	September	Announcement of Innovative Strategy for Energy and the Environment
	October	Implementation of Tax for Global Warming Countermeasures
2013	November	Announcement of 3.8% GHG Emissions Reduction Target for 2020
2015	July	Confirmation of 26% GHG Emissions Reduction Target for 2030
		Submission of INDC
2016	May	Cabinet Approval of Plan for Global Warming Countermeasures
2019	June	Submission of Long-Term Strategy under the Paris Agreement as a Growth Strategy
2020	October	Declaration of Carbon Neutrality for 2050
	December	Organization of National Forum on 2050 Carbon Neutrality
2021	April	Announcement of 46% GHG Emissions Reduction Target for 2030

October	Cabinet Approval of Revised Plan for Global Warming Countermeasures and Long-term Strategy under the Paris Agreement as a Growth Strategy

References

Abe, Keizō 安部慶三. 2011. “Ondanka taisaku shuyō sanshisaku o meguru dōkō to kadai: -kokunai haishutsuryō torihiki seido, chikyū ondanka taisaku zei, saisei kanō enerugī zenryō kaitori seido- 温暖化対策主要 3 施策をめぐる動向と課題 ~国内排出量取引制度、地球温暖化対策税、再生可能エネルギー全量 買取制度~.” *Rippō to Chōsa* 立法と調査, no. 312 (January): 141-47. Accessed December 7, 2022. https://www.sangiin.go.jp/japanese/annai/chousa/rippou_chousa/backnumber/2011pdf/20110114141.pdf.

Aburaki, Kiyoaki. 2010. “The Politics of Climate Change in Japan.” In *Green Dragons: The Politics of Climate Change in Asia*, edited by Michael J. Green, Charles W. Freeman, and Amy E. Searight, 7-19. Washington, DC: Center for Strategic and International Studies (CSIS). Accessed December 7, 2022. https://www.jstor.org/stable/resrep23559.5.

Agency for Natural Resources and Energy 資源エネルギー庁. 2021. “Saiene o Nihon no shuryoku enerugī ni! ‘FIP seido’ ga 2022 nen 4 gatsu sutāto 再エネを日本の主力エネルギーに！「FIP 制度」が 2022 年 4 月スタート.” August 3, 2021. Accessed December 7, 2022. https://www.enecho.meti.go.jp/about/special/johoteikyo/fip.html.

Asahi Shinbun 朝日新聞. 2008. “Haishutsuryō torihiki, jimin shōkōzoku gi’in wa hiteiteki 排出量取引、自民商工族議員は否定的.” June 6, 2008. Accessed December 7, 2022. https://www.asahi.com/special/070110/TKY200806060057.html.

———. 2010. “Haishutsuryō torihiki, reigai kakudai mo kankyōshō chūkankyōshin’an, sangyōkai ni hairyo 排出量取引、例外拡大も　環境省中環境審案、産業界に配慮.” December 7, 2010 (chōkan 朝刊), 4. Asahi Shinbun Kurosu Sāchi 朝日新聞クロスサーチ.

———. 2016. “Gijutsu kakushin e tōshi unagasu onshitsu kōka gasu, kuni no gen’an ‘50 nen ni 80% gen’ 技術革新へ投資促す　温室ガス、国の原案「５０年に８０%減」.” March 5, 2016 (chōkan 朝刊), 7. Asahi Shinbun Kurosu Sāchi 朝日新聞クロスサーチ.

———. 2019. “Kieta ‘sekitan karyoku zenpai’ yūshikisha kondankai no zachōan ni sangyōkai hanpatsu 消えた「石炭火力全廃」　有識者懇談会の座長案に産業界反発.” April 24, 2016 (chōkan 朝刊), 2. Asahi Shinbun Kurosu Sāchi 朝日新聞クロスサーチ.

———. 2021. “(Jiji kokukoku) onshitsu kōka gasu 46% sakugen, shushō ga shudō ōbei ni ashinami, misshitsu de handan （時時刻刻）温室ガス４６％削減、首相が主導　欧米に足並み、密室で判断.” April 23, 2021 (chōkan 朝刊), 2. Asahi Shinbun Kurosu Sāchi 朝日新聞クロスサーチ.

Cabinet Secretariat 内閣官房. 2020. “2050 nen cābon nyūtoraru·zenkoku fōramu giji yōshi 2050 年カーボンニュートラル・全国フォーラム　議事要旨.” Accessed December 7, 2022. https://www.cas.go.jp/jp/seisaku/carbon-neutral/dai1/gijiyoushi.pdf.

———. 2021a. “Kikō hendō taisaku suishin no tameno yūshikisha kaigi (dai 1 kai) giji yōshi 気候変動対策推進のための有識者会議（第 1 回）　議事要旨.” Accessed December 7, 2022. https://www.cas.go.jp/jp/seisaku/kikouhendoutaisaku/dai1/gijiyousi.pdf .

———. 2021b. “Kikō hendō taisaku suishin no tameno yūshikisha kaigi (dai 3 kai) giji yōshi 気候変動対策推進のための有識者会議（第 3 回）　議事要旨.” Accessed December 7, 2022. https://www.cas.go.jp/jp/seisaku/kikouhendoutaisaku/dai3/gijiyousi.pdf.

———. 2021c. “Kikō hendō taisaku suishin no tameno yūshikisha kaigi (dai 5 kai) giji yōshi 気候変動対策推進のための有識者会議（第 5 回）　議事要旨.” Accessed December 7, 2022. https://www.cas.go.jp/jp/seisaku/kikouhendoutaisaku/dai5/gijiyousi.pdf.

———. 2021d. “Kikō hendō taisaku suishin no tameno yūshikisha kaigi (dai 6 kai) giji yōshi 気候変動対策推進のための有識者会議（第 6 回）　議事要旨.” Accessed December 7, 2022. https://www.cas.go.jp/jp/seisaku/kikouhendoutaisaku/dai6/gijiyousi.pdf.

———. 2021e. *Kikō hendō taisaku suishin no tameno yūshikisha kaigi hōkokusho* 気候変動対策推進のための有識者会議　報告書. Tokyo: Cabinet Secretariat. Accessed December 7, 2022. https://www.cas.go.jp/jp/seisaku/kikouhendoutaisaku/pdf/houkokusyo.pdf.

Denki Shinbun 電気新聞. 2018. “Onshitsu kōka gasu haishutsu sakugen e muketa chōki senryaku, shōchōkan ni kotonaru omowaku keisanshō, kankyōshō no 80% sakugen taisaku ni hedatari. ene kihon keikaku tono seigō wa? 温室効果ガス排出削減へ向けた長期戦略、省庁間に異なる思惑　経産省、環境省の 80%削減策に隔たり。エネ基本計画との整合は？” January 23, 2018. Accessed December 7, 2022. https://www.denkiShinbun.com/sp/23870.

Dewit, Andrew, and Iida, Tetsunari. 2011. "The 'Power Elite' and Environmental-Energy Policy in Japan." *The Asia-Pacific Journal* 9, no. 4 (January): 1-17. https://apjjf.org/-Iida-Tetsunari--Andrew-DeWit/3479/article.pdf.

Dōman, Haruhiko 道満治彦. 2013. "Enerugī seisaku saisakuteika ni okeru saisei kanō enerugī sokushin seisaku no genjō: saisei kanō enerugī tokusohō no seisaku kettei katei kara エネルギー政策再策定下における再生可能エネルギー促進政策の現状: 再生可能エネルギー特措法の政策決定過程から." *Rikkyō Keizaigaku Kenkyū* 立教経済学研究 67, no. 1 (July): 77-106. http://id.nii.ac.jp/1062/00006486/.

The Energy Conservation Center, Japan. 2021. "The government new target for 46% cut in GHG emissions by FY2030." June 1, 2021. Accessed September 24, 2022. https://www.asiaeec-col.eccj.or.jp/policynews-202106-1/.

Hasegawa, Uiko. 2022. *The Feasibility and Future of Japan's Climate Policy*. Hong Kong: Heinrich Boll Stiftung. Accessed December 7, 2022. https://hk.boell.org/en/2022/04/012/feasibility-and-future-japans-climate-policy.

Hattori, Takashi. 2000. "Integrating policies for combating climate change: role of the Japanese Joint Conference for the Kyoto Protocol." *Environmental Economics and Policy Studies* 3 (September): 425-45. https://doi.org/10.1007/BF03354049.

Hirata, Kimiko 平田仁子. 2018. "Kikō hendō bun'ya ni okeru Nihon no kankyō seisaku tōgo no bunseki 気候変動分野における日本の環境政策統合の分析." *Kankyō Keizai: Seisaku Kenkyū* 環境経済・政策研究 11, no.2 (September): 1-14. https://doi.org/10.14927/reeps.11.2_1.

Hughes, Llewelyn. 2021. "Energy Policy in Japan: Revisiting Radical Incrementalism." In *The Oxford Handbook of Japanese Politics*, edited by Robert J. Pekkanen and Saadia M. Pekkanen, 376-94. Oxford: Oxford University Press. https://doi-org.utokyo.idm.oclc.org/10.1093/oxfordhb/9780190050993.013.20.

Iguchi, Masahiko, Luta, Alexandra, and Andresen, Steinar. 2015. "Japan's climate policy: post-Fukushima and beyond." In *The Domestic Politics of Global Climate Change*, edited by Guri Bang, Arild Underdal, and Steinar Andresen, 119-40. Cheltenham: Edward Elgar.

Incerti, Trevor, and Lipscy, Phillip Y. 2018. "The Politics of Energy and Climate Change in Japan under Abe: Abenergynomics." *Asian Survey* 58, no. 4: 607–34. https://doi.org/10.1525/as.2018.58.4.607. Accessed December 7, 2022, http://www.lipscy.org/InerctiLipscy_AsianSurvey2018.pdf.

———. 2020. “The Energy Politics of Japan.” In *The Oxford Handbook of Energy Politics*, edited by E Kathleen J. Hancock and Juliann Emmons Allison, 562-89. Oxford: Oxford University Press. https://doi-org.utokyo.idm.oclc.org/10.1093/oxfordhb/9780190861360.001.0001.

InfluenceMap. 2020. *Japanese Industry Groups and Climate Policy: Corporate Influencing of Japan’s Climate and Energy Choices*. London: InfluenceMap. Accessed December 7, 2022. https://influencemap.org/report/Japanese-Industry-Groups-and-Climate-Policy-20274.

Japan Business Federation. 2009. “Nippon Keidanren's Commitment to a Low Carbon Society.” December 15, 2009. Accessed March 12, 2023. https://www.keidanren.or.jp/english/policy/2009/107.html.

———. 2019. “Actions by the Business Community on Long-term Global Warming Countermeasures up to 2050.” January 15, 2019. Accessed December 7, 2022. https://www.keidanren.or.jp/en/policy/2019/001.html.

——— 日本経済団体連合会. 2022. *Gurīn toransufōmēshon (GX) ni mukete* グリーントランスフォーメーション（GX）に向けて. Tokyo: Japan Business Federation. Accessed December 7, 2022. https://www.keidanren.or.jp/policy/2022/043_honbun.pdf.

Japan Climate Initiative. n.d. “Japan Climate Initiative”. Accessed December 7, 2022. https://japanclimate.org/english/.

Japan Climate Leaders’ Partnership. 2021. “189 companies make policy proposals to the Japanese government to accelerate discussions on carbon tax and emissions trading scheme.” July 28, 2021. Accessed December 7, 2022. https://japan-clp.jp/archives/8942.

Japan Climate Leaders’ Partnership. n.d. “Japan Climate Leaders’ Partnership.” Accessed March 12, 2023. https://japan-clp.jp/en.

Kameyama, Yasuko. 2017. *Climate Policy in Japan: From the 1980s to 2015*. London: Routledge.

———. 2021a. “Climate Change Policy: Can New Actors Affect Japan’s Policy-Making in the Paris Agreement Era?” *Social Science Japan Journal* 24, no. 1 (Winter): 67-84. https://doi.org/10.1093/ssjj/jyaa051.

———. Yasuko. 2021b. “Feeling the heat: external pressure and Japan’s commitment to carbon neutrality.” *East Asia Forum*, June 11, 2021. Accessed December 7, 2022. https://www.eastasiaforum.org/2021/06/11/feeling-the-heat-external-pressure-and-japans-commitment-to-carbon-neutrality/.

Kamikawa, Ryūnoshin 上川龍之進. 2017. “Denryoku shisutemu kaikaku--denryoku jiyūka o meguru seiji katei 電力システム改革──電力自由化をめぐる政治過程.” In *Futatsu no seiken kōtai: seisaku wa kawattanoka* 二つの政権交代：政策は変わったのか, edited by Harukata Takenaka 竹中治堅. 53-84. Tokyo: Keisō shobō 勁草書房. Maruzen eBook Library.

Kawakatsu, Takeshi, Lee, Soochoel, and Rudolph, Sven. 2017. “The Japanese Carbon Tax and the Challenges to Low-Carbon Policy: Cooperation in East Asia.” *Discussion Paper Series*, no. E-17-009 (December): 1-21. Kyoto: Graduate School of Economics, Kyoto University. Accessed December 7, 2022, www.econ.kyoto-u.ac.jp/dp/papers/e-17-009.pdf#page15.

Kobayashi, Hikaru 小林光. 2015. “Kikō hendō taisaku e no Nihon no torikumi 気候変動対策への日本の取り組み.” August 4, 2015. Accessed December 7, 2022. https://www.nippon.com/ja/currents/d00191/.

Kōzai, Tsuneki 香西恒希. 2018. “Kābon puraishingu o meguru giron no dōkō - onshitsu kōka gasu no chōki ōhaba haishutsu sakugen ni muketa ronten seiri - カーボンプライシングをめぐる議論の動向 — 温室効果ガスの長期大幅排出削減に向けた論点整理 —.” *Rippō to Chōsa* 立法と調査, no. 404 (September): 115-31. Accessed December 7, 2022. https://www.sangiin.go.jp/japanese/annai/chousa/rippou_chousa/backnumber/2018pdf/20180907115.pdf.

Kubo, Haruka. 2014. “The possibilities for climate change: policy integration as seen from Japan’s political and administrative system.” In *Governing Low Carbon Development and the Economy*, edited by Hidenori Niizawa and Toru Morotomi, 185-206. Tokyo: UNU Press.

——— 久保はるか. 2016. “Naikaku no shudō ni yoru shōrai no seisaku mokuhyō no kettei to senmonteki chiken no yakuwari 内閣の主導による将来の政策目標の決定と専門的知見の役割.” *Kōnan Hōgaku* 甲南法学 56, no. 3·4: 163-202. http://doi.org/10.14990/00001700.

Kurobe, Junji 黒部純二. 2013. “Kireme no nai chikyū ondanka taisaku no suishin - chikyū ondanka taisaku no suishin ni kansuru hōritsu no ichibu o kaisei suru hōritsuan - 切れ目のない地球温暖化対策の推進 — 地球温暖化対策の推進に関する法律の一部を改正する法律案 —.” *Rippō to Chōsa* 立法と調査, no. 339 (April): 42-57. Accessed December 7, 2022. https://www.sangiin.go.jp/japanese/annai/chousa/rippou_chousa/backnumber/2013pdf/20130412042.pdf.

Mainichi Shinbun 毎日新聞. 2019. “Kurōzu appu: ondanka taisaku chōki senryaku, seifuan onshitsu gasu ‘zero’ meiki gijutsu kakushin danomi ni クローズアップ：温暖化対策長期戦略、政府案　温室ガス「ゼロ」明記　技術革新頼みに.” April 24, 2019, Tokyo (chōkan 朝刊), 3. Maisaku 毎索.

———. 2021. “Datsutanso: zenseiken kara tenkan 脱炭素：前政権から転換.” September 16, 2021, Tokyo (chōkan 朝刊), 5. Maisaku 毎索.

Midford, Paul. 2021. “The Politics of Nuclear Power Plant Restarts Versus Renewable Energy Promotion.” In *New Challenges and Solutions for Renewable Energy: Japan, East Asia and Northern Europe*, edited by Paul Midford and Espen Moe, 101-34. Cham: Palgrave Macmillan.

Ministry of Economy, Trade and Industry 経済産業省. 2016. “Chōki chikyū ondanka taisaku purattofōmu dai ikkai kaigō gijiroku 長期地球温暖化対策プラットフォーム第一回会合　議事録.” July 5, 2016. Accessed December 7, 2022. https://www.meti.go.jp/committee/kenkyukai/energy_environment/ondanka_platform/pdf/001_gijiroku.pdf.

———. 2017. *Chōki chikyū ondanka taisaku purattofōmu hōkokusho -wagakuni no chikyū ondanka taisaku no susumubeki hōkō-* 長期地球温暖化対策プラットフォーム報告書 -我が国の地球温暖化対策の進むべき方向-. Tokyo: Ministry of Economy, Trade and Industry. Accessed December 7, 2022. https://www.meti.go.jp/report/whitepaper/data/pdf/20170414001_02.pdf.

———. 2021. *Sekai zentai deno kābon nyūtoraru jitsugen no tame no keizaiteki shuhōtō no arikata ni kansuru kenkyūkai chūkan seiri* 世界全体でのカーボンニュートラル実現のための経済的手法等のあり方に関する研究会　中間整理. Tokyo: Ministry of Economy, Trade and Industry. Accessed December 7, 2022.

https://www.meti.go.jp/shingikai/energy_environment/carbon_neutral_jitsugen/pdf/20210825_2.pdf.

Ministry of the Environment 環境省. 2014. “Chūō kankyō shingikai chikyū kankyō bukai 2013 nen ikō no taisaku·shisaku ni kansuru kentō shōi’inkai meibo 中央環境審議会地球環境部会 2013 年以降の対策・施策に関する検討小委員会名簿.” Last modified February 1, 2014. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/meibo06-13.html.

———. 2015a. “Chūō kankyō shingikai chikyū kankyō bukai 2020 nen ikō no chikyū ondanka taisaku kentō shōi’inkai i’in meibo 中央環境審議会地球環境部会 2020 年以降の地球温暖化対策検討小委員会　委員名簿.” Last modified April 1, 2015. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/meibo06-17.html.

———. 2015b. “Sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai yakusoku sōan wākingu gurūpu i’in meibo 産業構造審議会　産業技術環境分科会　地球環境小委員会約束草案ワーキンググループ　委員名簿.” Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y0617-07.html.

———. 2015c. “Chūō kankyō shingikai chikyū kankyō bukai 2020 nen ikō no chikyū ondanka taisaku kentō shōi’inkai·sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai yakusoku sōan wākingu gurūpu gōdō kaigō (dai 7 kai) gijiroku 中央環境審議会地球環境部会 2020 年以降の地球温暖化対策検討小委員会・産業構造審議会産業技術環境分科会地球環境小委員会約束草案ワーキンググループ合同会合（第 7 回）　議事録.” April 30, 2015. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/2020_6.html.

———. 2016a. “Chūō kankyō shingikai chikyū kankyō bukai i’in meibo 中央環境審議会地球環境部会　委員名簿.” Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y060-130.html.

———. 2016b. “Sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai i’in meibo 産業構造審議会　産業技術環境分科会　地球環境小委員会委員名簿.” Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y060-130.html.

———. 2016c. “Chikyū kankyō bukai (dai 130 kai)·sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai gōdō kaigō (dai 45 kai) gijiroku 地球環境部

会（第 130 回）・産業構造審議会産業技術環境分科会地球環境小委員会合同会合（第 45 回）議事録.” March 4, 2016. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y060-130a.html.

———. 2017a. “Chōki teitanso bijon shōi’inkai (dai 13 kai) gijiroku 長期低炭素ビジョン小委員会（第 13 回）議事録.” March 1, 2017. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y0618-13a.html.

———. 2017b. *Chōki teitanso bijon* 長期低炭素ビジョン. Tokyo: Ministry of the Environment. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y0618-14/900424814.pdf.

———. 2017c. “Chūō kankyō shingikai chikyū kankyō bukai chōki teitanso bijon shōi’inkai i’in meibo 中央環境審議会地球環境部会長期低炭素ビジョン小委員会　委員名簿.” Last modified June 12, 2017. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/meibo06-18.html.

———. 2018a. *Chōki ōhaba sakugen ni muketa kihonteki kangaekata* 長期大幅削減に向けた基本的考え方. Tokyo: Ministry of the Environment. Accessed December 7, 2022. https://www.env.go.jp/earth/earth/ondanka/post_38.html.

———. 2018b. “Kābon puraishingu no katsuyō ni kansuru shōi’inkai (dai 1 kai) gijiroku カーボンプライシングの活用に関する小委員会（第１回）議事録.” July 30, 2018. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/0619-01a.html.

———. 2019a. “Chūō kankyō shingikai chikyū kankyō bukai i’in meibo 中央環境審議会地球環境部会　委員名簿.” Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y060-49b/900423435.pdf.

———. 2019b. “Sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai i’in meibo 産業構造審議会　産業技術環境分科会　地球環境小委員会委員名簿.” Accessed December 7, 2022. https://www.env.go.jp/council/06earth/02_6.html.

———. 2019c. “Chikyū kankyō bukai (dai 142 kai)·sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai gōdō kaigō (dai 49 kai) gijiroku 地球環境部会（第１４２回）・産業構造審議会産業技術環境分科会地球環境小委員会合同会

合（第４９回）議事録.” April 23, 2019. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/02_7.html.

———. 2019d. “Kābon puraishingu no katsuyō ni kansuru shōi’inkai (dai 10 kai) gijiroku カーボンプライシングの活用に関する小委員会（第 10 回） 議事録.” June 21, 2019. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/10_4.html.

———. 2019e. *Kābon puraishingu no katsuyō ni kansuru giron no chūkanteki na seiri* カーボンプライシングの活用の可能性に関する議論の中間的な整理. Tokyo: Ministry of the Environment. Accessed December 7, 2022. https://www.env.go.jp/content/900422659.pdf.

———. 2021a. “Kābon puraishingu no katsuyō ni kansuru shōi’inkai (dai 12 kai) gijiroku カーボンプライシングの活用に関する小委員会（第 12 回）議事録.” February 1, 2021. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/02_14.html.

———. 2021b. “Kābon puraishingu no katsuyō ni kansuru shōi’inkai (dai 17 kai) gijiroku カーボンプライシングの活用に関する小委員会（第 17 回）議事録.” July 29, 2021. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/17_5.html.

———. 2021c. *Chūkan seiri* 中間整理. Tokyo: Ministry of the Environment. Accessed December 7. 2022. https://www.env.go.jp/content/900422816.pdf.

———. 2021d. “Chūchōki no kikō hendō taisaku kentō shōi’inkai (sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai chikyū ondanka taisaku kentō WG gōdō kaigō) (dai 5 kai) gijiroku 中長期の気候変動対策検討小委員会（産業構造審議会産業技術環境分科会地球環境小委員会地球温暖化対策検討 WG 合同会合）（第５回） 議事録.” April 26, 2021. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y0620-5a.html.

———. 2021e. “Chūchōki no kikō hendō taisaku kentō shōi’inkai (sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai chikyū ondanka taisaku kentō WG gōdō kaigō) (dai 9 kai) gijiroku 中長期の気候変動対策検討小委員会（産業構造審議会産業技術環境分科会地球環境小委員会地球温暖化対策検討 WG 合同会合）（第 9 回） 議事録.” August 4, 2021. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/y0620-9a.html.

———. 2022. “Chūchōki no kikō hendō taisaku kentō shōi’inkai (sangyō kōzō shingikai sangyō gijutsu kankyō bunkakai chikyū kankyō shōi’inkai chikyū ondanka taisaku kento WG gōdō kaigō) i’in meibo 中長期の気候変動対策検討小委員会（産業構造審議会産業技術環境分科会地球環境小委員会地球温暖化対策検討 WG 合同会合）　委員名簿.” Last modified April 1, 2022. Accessed December 7, 2022. https://www.env.go.jp/council/06earth/meibo06-20.html.

Ministry of Foreign Affairs. 2018a. *Climate Change as the Main Mission of Japan’s Diplomacy to Transform Japan into a Decarbonized Nation*. Tokyo: Ministry of Foreign Affairs. Accessed December 7, 2022. https://www.mofa.go.jp/files/000356250.pdf.

———. 2018b. “Advisory Panel of Experts on Climate Change.” April 26, 2016. Accessed December 7, 2022. https://www.mofa.go.jp/ic/ch/page4e_000754.html.

NHK NEWS WEB. 2022. “Seifu ‘kābon puraishingu’ no dōny aratana seidoan o ryōshō 政府「カーボンプライシング」の導入 新たな制度案を了承.” November, 29, 2022. Accessed December 7, 2022. https://www3.nhk.or.jp/news/html/20221129/k10013907581000.html.

Nihon Keizai Shinbun 日本経済新聞. 2015. “Onshitsu kōka gasu 35% gen, denjiren nado, hatsu no kyōtsū mokuhyō, 30 nendo, 13 nendohi. 温暖化ガス３５％減、電事連など、初の共通目標、３０年度、１３年度比。” July 2, 2015 (yūkan 夕刊), 1. Nikkei Terecon 日経テレコン.

———. 2016. “Sekitan karyoku shinsetsu o itten yōnin, kankyōshō hōshin, CO2 kanri jōken ni 石炭火力新設を一転容認、環境相方針、ＣＯ２管理条件に.” February 6, 2016 (chōkan 朝刊), 2. Nikkei Terecon 日経テレコン.

———. 2020. “Kōno kisei kaikakushō, saisei ene kakudai e tasuku fōsu 河野規制改革相、再生エネ拡大へタスクフォース.” November 20, 2020. Accessed December 7, 2022. https://www.nikkei.com/article/DGXMZO66462250Q0A121C2EA3000/.

Okayama, Hirofumi 岡山博文. 2008. “Nihon no chikyū ondanka taisaku o meguru seisaku katei: chikyū ondanka taisaku suishin taikō o jirei ni 日本の地球温暖化対策を巡る政策過程：地球温暖化対策推進大綱を事例に.” In *Seisaku katei bunseki no saizensen* 政策過程分析の最前線, edited by Atsushi Kusano 草野厚, 207-245. Tokyo: Keiō Gijuku Daigaku Shuppankai 慶應義塾大学出版会.

Ohta, Hiroshi. 2020. “The Analysis of Japan’s Energy and Climate Policy from the Aspect of Anticipatory Governance.” *Energies* 13, no. 19 (October): 1-22. https://doi.org/10.3390/en13195153.

Ōshima, Takeshi 大嶋健志. 2016. “Pari kyōtei saitakugo no dōkō to kongo no kadai パリ協定採択後の動向と今後の課題.” *Rippō to Chōsa* 立法と調査, no. 381 (October): 139-48. Accessed December 7, 2022. https://www.sangiin.go.jp/japanese/annai/chousa/rippou_chousa/backnumber/2016pdf/20161003139.pdf.

Oshitani, Shizuka. 2006. *Global Warming Policy in Japan and Britain: Interactions between institutions and issue characteristics*. Manchester: Manchester University Press.

Prime Minister of Japan and His Office 首相官邸. 2008a. “Chikyū ondanka mondai ni kansuru kondankai seisaku shuhō bunkakai i’in meibo 地球温暖化問題に関する懇談会 政策手法分科会　委員名簿.” May 12, 2008. Web Archiving Project (WARP). Accessed December 7, 2022. https://warp.ndl.go.jp/info:ndljp/pid/233240/www.kantei.go.jp/jp/singi/tikyuu/kaisai/dai01shuhou/01gijisidai.html.

———. 2008b. “Seisaku shuhō bunkakai chūkan hōkoku giron no ronten seiri 政策手法分科会中間報告　議論の論点整理.” Web Archiving Project (WARP), May 26, 2008. Accessed December 7, 2022. https://warp.ndl.go.jp/info:ndljp/pid/233240/www.kantei.go.jp/jp/singi/tikyuu/kaisai/dai04/04siryou3_1.pdf.

———. 2009. “Chikyū ondanka mondai ni kansuru kondankai meibo 地球温暖化問題に関する懇談会　名簿.” Web Archiving Project (WARP), last modified January 8, 2009. Accessed December 7, 2022. https://warp.ndl.go.jp/info:ndljp/pid/233240/www.kantei.go.jp/jp/singi/tikyuu/kousei.html.

———. 2015. *Nihon no yakusoku sōan* 日本の約束草案. Tokyo: Prime Minister of Japan and His Office. Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/ondanka/kaisai/dai30/yakusoku_souan.pdf.

———. 2016. *Chikyū ondanka taisaku keikaku* 地球温暖化対策計画. Tokyo: Prime Minister of Japan and His Office. Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/ondanka/kaisai/dai35/pdf/honbun.pdf.

———. 2018a. “Pari kyōtei ni motozuku seichō senryaku to shiteno chōki senryaku sakutei ni muketa kondankai no kaisai ni tsuite パリ協定に基づく成長戦略としての長期戦略策定に向けた懇談会の開催について.” Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/parikyoutei/pdf/konkyo.pdf.

———. 2018b. “Pari kyōtei seichō senryaku kondankai (dai 1 kai) giji yōshi パリ協定長期成長戦略懇談会(第 1 回) 議事要旨.” Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/parikyoutei/dai1/gijiyousi.pdf.

———. 2018c. “Pari kyōtei seichō senryaku kondankai (dai 2 kai) giji yōshi パリ協定長期成長戦略懇談会(第 2 回) 議事要旨.” Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/parikyoutei/dai2/gijiyousi.pdf.

———. 2018d. “Pari kyōtei seichō senryaku kondankai (dai 4 kai) giji yōshi パリ協定長期成長戦略懇談会(第 4 回) 議事要旨.” Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/parikyoutei/dai4/gijiyousi.pdf.

———. 2019a. “Pari kyōtei seichō senryaku kondankai (dai 5 kai) giji yōshi パリ協定長期成長戦略懇談会(第 5 回) 議事要旨.” Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/parikyoutei/dai5/gijiyousi.pdf.

———. 2019b. *Pari kyōtei ni motozuku seichō senryaku to shiteno chōki senryaku sakutei ni muketa kondankai teigen* パリ協定に基づく成長戦略としての長期戦略策定に向けた懇談会 提言. Tokyo: Prime Minister of Japan and His Office. Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/parikyoutei/siryou1.pdf.

———. 2019c. *Pari kyōtei ni motozuku seichō senryaku to shiteno chōki senryaku* パリ協定に基づく成長戦略としての長期戦略. Tokyo: Prime Minister of Japan and His Office. Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/ondanka/kaisai/dai40/pdf/senryaku.pdf.

———. 2021a. *Chikyū ondanka taisaku keikaku* 地球温暖化対策計画. Accessed December 7, 2022. Tokyo: Prime Minister of Japan and His Office. https://www.kantei.go.jp/jp/singi/ondanka/kaisai/dai48/pdf/keikaku_honbun.pdf.

———. 2021b. *Pari kyōtei ni motozuku seichō senryaku to shiteno chōki senryaku* パリ協定に基づく成長戦略としての長期戦略. Tokyo: Prime Minister of Japan and His Office.

Accessed December 7, 2022. https://www.kantei.go.jp/jp/singi/ondanka/kaisai/dai48/pdf/senryaku_honbun.pdf.

Research Institute for Environmental Finance 環境金融研究機構. 2021. “Seifu, kantei ni kikō hendō taisaku suishinshitsu o shinsetsu. Suga seiken no ‘2050 nen netto zero’ mokuhyō jitsugen de seifu nai chōsei no kinō. zaimushō karawa Takada Hideki shi o kiyō (RIEF) 政府、官邸に気候変動対策推進室を新設。菅政権の「2050 年ネットゼロ」目標実現で政府内調整の機能。財務省からは高田英樹氏を起用（RIEF）.” March 12, 2021. Accessed December 7, 2022. https://rief-jp.org/ct8/111935?ctid=70.

SankeiBiz. 2013. “Onshitsu kōka gasu 3.8% gen genpatsu fukumanai ‘zanteiteki’ sūchi ni 温室効果ガス３.８%削減　原発含まない「暫定的」数値に.” November 9, 2013. Accessed December 7, 2022. https://www.sankeibiz.jp/smp/macro/news/131109/mca1311090502004-s.htm.

Schreurs, Miranda A. 2009. *Environmental Politics in Japan, Germany, and the United States*. Cambridge, England: Cambridge University Press. https://doi-org.utokyo.idm.oclc.org/10.1017/CBO9780511491146.

———. 2019. “Climate change politics in Japan in the aftermath of the Fukushima nuclear crisis: The United States and Canada.” In *National pathways to low carbon emission economies: innovation policies for decarbonizing and unlocking*, edited by Kurt Hübner, 97-113. London: Routledge.

Shelfrick, Aaron, and Obayashi, Yuka. 2020. “Japan set to target zero emissions by 2050 in policy shift”. *Reuters*, October 23, 2020. Accessed December 7, 2022. https://jp.reuters.com/article/climate-japan-policy-shift/japan-set-to-target-zero-emissions-by-2050-in-policy-shift-idUSKBN2780RN.

Skea, Jim, Lechtenböhmer, Stefan, and Asuka, Jusen. 2013. “Climate policies after Fukushima: three views.” *Climate Policy* 13, issue supl. 1 (January): 36-54. https://doi.org/10.1080/14693062.2013.756670.

Sofer, Ken. 2016. “Climate Politics in Japan: the impacts of public opinion, bureaucratic rivalries, and interest groups on Japan’s environmental agenda.” *Sasakawa USA Forum*, no. 1 (May): 1-22. Accessed May 20, 2022. https://spfusa.org/sasakawa-usa-forum/climate-politics-japan/.

Suga, Yoshihide 菅義偉. 2020. “Dai nihyakusankai kokkai ni okeru Suga naikaku sōridaijin shoshin hyōmei enzetsu 第二百三回国会における菅内閣総理大臣所信表明演説.”

October 26, 2020. Accessed December 7, 2022. https://www.kantei.go.jp/jp/99_suga/statement/2020/1026shoshinhyomei.html.

Sustainable Japan. 2020. "[Nihon] seifu, Pari kyōtei teishutsu bunsho de 2015 nen CO2 mokuhyō o sueoki. kankyōshō wa kongo no tenkai de nebari 【日本】政府、パリ協定提出文書で 2015 年 CO2 目標を据え置き。環境省は今後の展開で粘り." March 31, 2020. Accessed December 7, 2022. https://sustainablejapan.jp/2020/03/31/japan-paris-agreement-ndc/47843.

Takenaka, Harukata 竹中治堅. 2017. "Abe seiken to minshutō seiken no keizokusei 安倍政権と民主党政権の継続性." In *Futatsu no seiken kōtai: seisaku wa kawattanoka* 二つの政権交代：政策は変わったのか, edited by Harukata Takenaka 竹中治堅, 273-89. Tokyo: Keisō Shobō 勁草書房. Maruzen eBook Library.

Toda, Masataka, and Ōtsu, Tomoyoshi. 2021b. "'Tokoton tatakae' Kōno·Koizumi rengō VS keisanshō saiene saiyūsen no butaiura 「とことん戦え」　河野・小泉連合 VS 経産省　再エネ最優先の舞台裏." October 22, 2021. Accessed December 7, 2022. https://www.asahi.com/articles/ASPBQ0PNPPBPULFA02Y.html.

Watanabe, Rie. 2014. "A comparative analysis of climate policy changes in Germany and Japan: Multilevel governance, governing-coalition change and policy entrepreneurship." In *Governing Low Carbon Development and the Economy*, edited by Hidenori Niizawa and Toru Morotomi, 185-206. Tokyo: UNU Press.

——— 渡邉理絵. 2015. *Nihon to doitsu no kikō enerugī seisaku tenkan: paradaimu tenkan no mekanizumu* 日本とドイツの気候エネルギー政策転換：パラダイム転換のメカニズム. Tokyo: Yūshindo 有信堂.

———. 2021. "Breaking Iron Triangles: Beliefs and Interests in Japanese Renewable Energy Policy." *Social Science Japan Journal* 24, no. 1 (Winter); 9-44. https://doi.org/10.1093/ssjj/jyaa043.

Yomiuri Shinbun 読売新聞. 2021. "[Sukyanā] kābon puraishingu datsutanso susumekata hedatari ［スキャナー］カーボンプライシング　脱炭素　進め方隔たり." February 4, 2021, Tokyo (chōkan 朝刊), 3. Yomidasu Rekishikan ヨミダス歴史館.