

Precedent, Progress, and Missed Opportunities: Conflict and Debates over Legislating Climate Change Emissions Reductions in Japan

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Abstract: *This article considers the negotiations and historical context of Japan's two major climate change bills. We find that the political approach to emissions reductions has resulted in non-specific, iterative reduction commitments from 1998, while attempts to introduce reduction schemes or taxes and define specific long-term targets, as in 2010, largely failed due to stalwart opposition from the energy and heavy industry sectors. Negotiations were further complicated by inter-ministry conflict, the often-rotating prime ministership, and the uncertain role of nuclear power. While these earlier efforts and changing international standards laid track for legislative revisions in 2021, their ultimate realization remains uncertain.*

Keywords: *climate change legislation; policy change; emissions reductions; Japan ministries and inter-ministry conflict; political regime change*

Introduction

Climate change lawmaking in Japan took an iterative approach beginning with calls for action, planning, and the joint consideration of

the public, private, and political spheres in searching for what voluntary reductions could be made, while provisions for emissions reporting were made. This was in the form of the 1998 Law Concerning the Promotion of the Measures to Cope with Global Warming. Spurred on by a sense of ownership over 1997's Kyoto Conference, as well as the international community's influence in thinking beyond the Protocol, the task that followed was to envision what cutbacks could be implemented. The legacy of voluntary measures led, in part, to no small amount of pushback at the negotiating table, with industry interests resisting numerically defined emissions reduction goals specifying a date of completion. The failure of the 2010 Basic Bill on Global Warming Countermeasures, which attempted to enshrine reductions of 25% (based on 1990 levels), makes this clear, as fierce debates raged over the bill's reduction goals and preconditions. Since then, 2018 saw the passage of the Climate Change Adaptation Act, which as the name suggests, focuses on adapting to continuing climate change effects, while non-specifically promoting planning, assessment, and proliferation of knowledge. Reductions were hardly mentioned.

Taking into consideration these factors over time, though the period between 1998-2020 was largely legislatively unproductive and full of missed opportunities, particularly with the failure of the 2010 Bill, its legacy was that many of its provisions would be taken up more

than a decade later. Japan after 2010 had only slightly moved to target reductions, spurred on by the Paris Agreement. In a sharp turn of events, Prime Minister Suga Yoshihide in 2021 moved to amend the 1998 Bill, declaring that Japan would become ‘carbon neutral’ by 2050, with an interim target of 46% by 2030. Commensurate to the new revisions, it also announced the Green Growth Strategy, a new industrial policy directing the efforts of 14 sectors, while attempting to make renewables a larger portion of Japan’s energy (METI 2021).

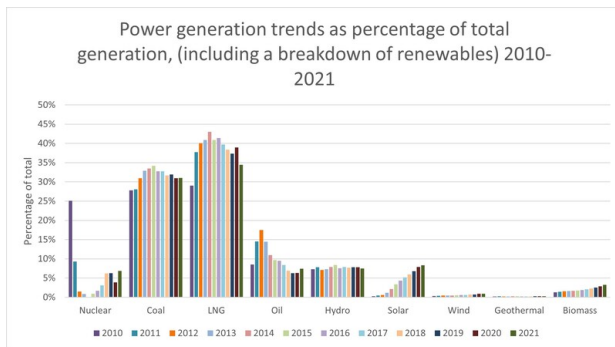
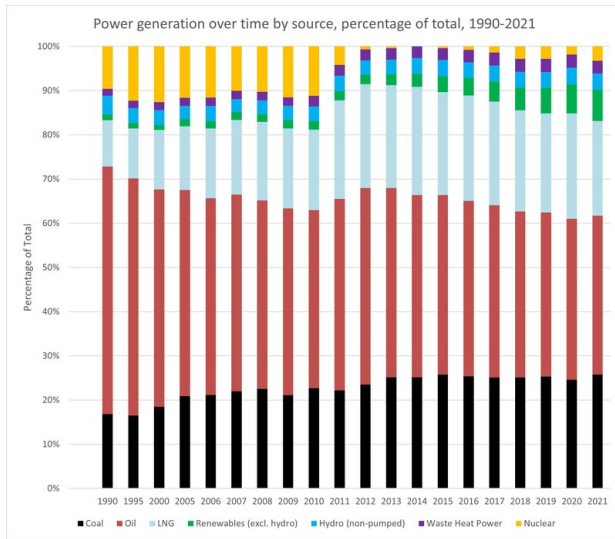
Though these are steps forward, it’s unclear what results such efforts will yield, especially when considering Japan’s record from Kyoto onward. As this article shows, the developments from 2021 were under discussion more than a decade previously. Internal regime change and instability brought Japan part of the way, while changing international standards were the final push. Sticking points like industrial competitiveness were later re-imagined after Paris and changing international industrial structures threatened to leave Japan behind. How Japan achieves an ambitious energy transition and what percentage comes from nuclear or renewables remains to be seen, while it’s unknown whether recent rhetoric about emissions reductions and economic growth no longer being at odds with one another will carry forward.

Domestic elite struggles over political power and regime turnover allowed for spaces in which climate change legislation could be proposed, and even in failure, normalized as essential to policymaking. The bills of 1998 and 2010 came into discussion when the Liberal Democratic Party (LDP), the primary power since its foundation in 1955, found itself out of the majority, or at least under serious threat. Thus, the 2010 Bill was championed by the Democratic Party of Japan (DPJ) when it was briefly in power, forcing the LDP to counter with attention to its own climate legislation, setting precedents for the eventual 2021

revisions.

Inter-ministry conflict often saw the Ministry of the Environment (MoE; Environmental Agency, EA before 2001) on the back foot, often being forced to compromise on its proposals by the Ministry of Economy, Trade and Industry (METI; Ministry of International Trade and Industry, MITI before 2001), industry lobbying groups like the *Keidanren* (Japan Business Federation), and the political parties in power. In this vein, many political scientists such as Colignon and Usui (2001) or McCormack (2002) have pointed out the strong networks between the central bureaucracy (the ministries), the politicians, and major business interests as forming the ‘iron triangle’ that drives economic policy. Industry concerns have influenced legislation, opposing specific regulations that would harm their international competitiveness or reveal business secrets. Kameyama (2021) argues that it is substate actors who might push Japan forward in the future, though in our case industry and union voices have opposed the regulation demanded by the MoE, media, or NPO organizations.

From the beginning of mitigation efforts, Japanese emissions reduction goals relied upon continued nuclear power expansion. As there were few well-supported non-fossil fuel alternatives to nuclear, the shock from the 2011 disaster was an enduring one. Post-2011, new development plans were put under review and some nuclear plants taken offline, leaving leaders flatfooted in building any kind of consensus with regards to alternatives to fossil fuels. Japan, with its decades-long energy efficiency projects following the oil crisis of 1973, was already at a point where it could no longer squeeze major energy savings or increased production out of its existing infrastructure. Oil use has decreased since 1990 in favor of Liquefied Natural Gas (LNG), while coal use has slightly increased over the same time.



Figures 1 & 2: Adapted from Enecho, 2021

Largely lacking central direction, municipalities were asked to formulate their own plans, oftentimes lacking funding, knowhow, or direction from legislation. Large municipalities like Tokyo set precedence with their own plans, though policy, ordinances, and prioritization of reductions were inconsistent (Sugiyama and Tsuneo 2008). The end result has been complicated, with the need to work around a variety of local ordinances (RILG 2023) as well as gain the support of local residents. According to a *Mainichi* survey of all 47 prefectures, 37 had encountered some problems installing wind and solar

infrastructure, including landslides caused by soil and sand erosion, deterioration of the landscape, and the destruction of nature. As the paper stated, “Despite its ‘eco-friendly’ image, solar energy has become a hotbed of pollution that threatens the livelihoods of local communities” (*Mainichi* 2021). Mega generation projects will likely continue to face opposition from localities, especially given the already decades-long struggles against infrastructure, displacement, and the questioning of local benefits (Aldrich 2010). Additionally, the world’s first prototype floating wind farm off of Fukushima was abandoned after facing technical issues and failing to be profitable (Kinoshita et al. 2021).

Though in-depth international comparisons are beyond the scope of this paper, in terms of climate change legislative successes and similar trajectories among the entities that Japan regularly compares itself, there are parallels in the EU member-states and the US. If nothing else, such examples serve as normalizing standards of international trade and competition that in turn drive reconsideration within Japan.

Comparing legislation, the EU, despite a wide range of approaches and painstakingly navigating agreements among its 27 member states, has much more successfully implemented both regulatory devices and a 2005 emissions trading scheme. Though Japan has at times poised itself to undertake a leadership role, and its 1998 law is cited as being the world’s first so-worred climate change law, the EU has taken and maintained a leadership role.

Before 2022, the EU had begun to move away from coal power, shuttering some of its own mines, and outside of Poland, Czechia, and Bulgaria that still relied on them, coal power plants were to follow (Bloomberg 2021). The continuing role of nuclear power in decarbonization has been of open debate the

last two decades, prior to the landmark Europe Green Deal. Germany, for instance, initially sought to end nuclear power generation around 2000, again in 2010, and then finally did so after the Fukushima disaster. Austria, Denmark, Luxembourg, and Portugal support the move. This is countered by France's large nuclear generation capacity and continued desire to invest in a nuclear future. Nuclear is promoted by states still dependent on coal power—Bulgaria, the Czech Republic, and Poland—with support from the Netherlands. The Europe Green deal, passed in 2020, explicitly withholds funding from both fossil fuel and nuclear energy development (Dennison et al. 2021). However, the overall willingness to embrace nuclear generation, or even return to coal, may increase as Europe divests itself from Russian fossil fuel exports following the Russia-Ukraine conflict (Mufson and Parker 2022).

Japan's second largest trading partner and ally spent decades stagnated into a position where it was difficult to pass national climate legislation, seen as enforcing foreign limits on its economic growth. In the United States, this has led to the rise of actors at the state or local levels seeking to lower emissions (Hale 2018). Industry actors in both the US and Japan have utilized arguments of not wanting to lose international competitiveness. Assuming they survive court and legislative challenges, the Infrastructure Investment and Jobs Act (2021) and the Inflation Reduction Act (2022) stand as the most recent major legislative developments, aiming to push the US toward a major energy transition through energy efficiency and infrastructural redevelopment, plus green tax credits (Bertrand 2022).

Junctures at which Japan's internal negotiations were hastened under regime change and challenge, or amidst the progress of international developments, will be elucidated. In analyzing media sources and Diet debates, the sticking points that inhibited the passage of legislation will be highlighted,

namely an avoidance of committing to specific emission reduction goals or regulation beyond voluntary measures, the prioritization of economic factors of competitiveness and keeping business secrets hidden, in addition to the continuing power of the METI, industry, and union alliance in rebuffing the MoE and DPJ's proposals. News media sources generally have noted the insufficiencies in varying cabinet or ministerial proposals and questioned the willingness to make these a reality. Consistent with their general ideological positions, *Asahi* and *Mainichi* pushed for more stringent and clearly defined reductions, while media such as *Yomiuri* favored greater caution in making dramatic changes that could negatively impact the economy. The lack of attractive non-nuclear energy alternatives is also notable. These factors have normalized negotiating points and legislative efforts which, even if not previously realized, influenced the path of future debates and attempts at legislating emissions reductions.

Debates Over the 1998 Law

Prior to the widespread acknowledgement of climate change, Japan grappled with environmental problems resulting from its rapid economic growth. The government implemented measures to mitigate local water and air pollution, establishing the EA in 1970, and took measures in response to the oil crises in the 1970s. Japan was not always proactive in its initial recognition of climate change (Cothorn and Hasegawa 2022), though the Earth Summit of 1992 prompted government efforts as public and media attention increased. The third session of the Conference of Parties (COP3) was held in Kyoto in 1997. Meanwhile, the Law Concerning the Promotion of the Measures to Cope with Global Warming (hereafter the 1998 Law) was enacted in 1998, while the Kyoto Protocol was eventually ratified in 2002.

Global climate negotiations coincided with domestic political change and instability. Since the LDP's formation in 1955, the next-largest party had, at most, half its power. However, as a result of the 1993 general election, the LDP became an opposition party for the first time in nearly 40 years. The LDP returned to power the following year, but only within its own three-party coalition and has only continued to rule through coalition power-sharing. From 2009 to 2012, a coalition government led by the DPJ won power, and it was this government that sought to enact the 2010 Basic Law on Global Warming Countermeasures. Watanabe (2021) notes that regime change became critical to spurring along discussions regarding emissions reductions, which analysis of the bills herein supports. In addition, especially since the 1990s, the often-rotating post of the prime minister (and not the bureaucracy) has become comparatively more central to leading policy direction (Mishima 2019).

The 1998 Law aimed to establish basic state policy, while prompting businesses to take action on global warming. It targeted six greenhouse gases, including carbon dioxide and methane, required the national and local governments to make plans to reduce greenhouse gases, and encouraged high-emitting businesses to establish and publicize an emission control plan. The EA's draft proposal required businesses to submit plans to their local governor, who would be granted the right to enter, investigate, and apply penalties to non-compliant businesses. However, MITI and industry parties strongly resisted the power of the EA and local governments over private companies, arguing that there was no need for dual regulation beyond the 1979 Energy Conservation Law. Under such pressure, the original regulatory aspects of the bill disappeared (*Asahi Shinbun* 1998a: 1).

Media responses were critical of the final proposal. Without oversight, it was up to individual operators to create control plans,

and there were no penalties for not doing so. Furthermore, in practice, the contents of any plans were not be made public because they contained trade secrets. Finally, while the 47 prefectural governments were obligated to prepare plans for their central facilities, municipalities were only encouraged to do so, the justification being that it was difficult to create plans for small towns and villages (*Asahi Shinbun* 1998b: 5).

In the light of the progress of COP3, additional amendments were added across party lines. One called for the voluntary involvement of all citizens in the reduction of greenhouse gas emissions, obliging both prefectures and municipalities to develop action plans. Furthermore, a supplementary resolution promoted strengthening coordination with the Energy Conservation Law and related laws (Minutes of the House of Representatives Environment Committee, 1998). Policy henceforth would be driven by the cabinet, while directing local governments, businesses, and citizens in countering climate change. The cabinet was continually advised by the MoE's Central Environment Council (CEC).

The role of nuclear power development in lessening carbon emissions emerges here as a contentious issue. In the CEC's subcommittee, the *Keidanren*, Japan's most powerful industry lobby, clashed with NGOs who advocated for nuclear power phase-out and new energy development. MITI and the industrial community demanded the inclusion of "nuclear power plant" development in the draft's language. When the CEC sought public comments, the Federation of Electric Power Companies lobbied power companies and related industries, and 899 of the 1,036 comments received by the end of January 1999 favored a clear commitment to nuclear power generation, prompting draft revisions (*Asahi Shinbun* 1999: 1). Media questioned the expansion of nuclear plants as being out of step with the times, though conceded that emissions

had only continued to increase due to affluence driving private sector emissions, making meeting Kyoto obligations increasingly difficult (*Asahi Shinbun* 2001: 4).

However, the ministries remained divided in their stances on the policy draft. METI believed that to avoid an excessive burden on the economy, existing measures such as further energy conservation measures should be thoroughly implemented, arguing that industry efforts centered on a Voluntary Action Plan put forth by the *Keidanren* should serve for the time being. The newly-minted MoE, on the other hand, felt a strong sense of urgency to achieve reduction targets and insisted on the future introduction of a global warming tax (Ono, 2002: 13).

The legacy of the 1998 Law was complex; it both highlighted the importance of emissions reductions and spurred measures toward that goal, but at the same time, failed to establish specific reduction targets or promote government guidelines on how to get there. For scholarly analyses of voluntary reduction measures and the impact of the 1998 Law, Holroyd (2009) argued that a softer hand created lead markets for efficiency programs and green transitions; Nakamura et al. (2001) found that some firms followed guidance simply because it allowed them to save money; while Wakabayashi and Arimura (2016) saw that moral appeals to large firms found little response; and finally, Takamura (2012) observed the difficulty in acquiring emissions data held as competitive secrets, an industry sticking point that arose repeatedly throughout the findings explored in this paper as well.

Moving Forward under Kyoto

In response to the CEC's 2002 report, the government decided to ratify the Kyoto Protocol, while developing domestic laws. Policies were based on the principle of

“balancing the environment and the economy,” a henceforth oft-repeated idea. That phrase was an overt reference to the business community's concern that global warming measures would lead to the hollowing out of industry. METI and industry proponents, specifically steel and electric companies who were major emitters, specifically opposed regulation and reduction targets by emission source (*Asahi Shinbun* 2002: 3).

Against this backdrop, 2005–2007 saw calls for further revisions to the 1998 Law. The revised law would make companies above a certain size “specified emitters,” subject to reporting their annual greenhouse gas emissions. Compiled by the ministries, the information would supposedly be made public upon request; non or false reporting would include penalties. However, in cases where trade secrets were involved, reporting exceptions would be allowed with ministry approval (*Asahi Shinbun* 2005: 1).

In February 2007, Prime Minister Abe Shinzo, seeing that global warming had become an important international topic while on a visit to Europe, decided to promote policy under his office, calling for a four-ministerial meeting on countermeasures, including METI, MoE, and the Ministry of Foreign Affairs. Prior to the Heiligendamm G8 Summit, the Abe administration announced its long-term vision, “Beautiful Planet 50,” which included the goal of “halving greenhouse gas emissions globally by 2050.” However, the Abe administration was then severely defeated during the July House of Councilors election due to a financing scandal.

The subsequent Fukuda Yasuo administration attempted to build on Abe's policies, but the business community and METI opposed measures that would have placed strict limits on corporate activities, stalling discussions on a domestic emissions trading system and environmental taxes. At COP13 in Bali in December, Japan became the target of

international and NGO criticism due to its continuing ambiguity surrounding emissions reductions goals.

While Fukuda leaned toward setting a specific mid-term reduction goal by the time of his attendance at 2008's World Economic Forum meeting in Davos, the DPJ, now controlling the House of Councilors, also prepared to send its representative (Ozawa Ichiro) to promote the establishment of a domestic trading system. Furthermore, the DPJ resolved to see the topic as a campaign platform for the upcoming general elections (Inada and Shoji 2008: 3).

In February 2008, it was reported that the proposed amendment to the 1998 Law had been finalized. Guidelines for emission controls per type of business were established. The MoE had initially considered stronger measures, including publicizing the names of companies whose efforts were deemed insufficient. However, the business community and METI strongly opposed the move, forcing the MoE to backtrack and withdraw its regulatory strictness (*Asahi Shinbun* 2008a: 1). The reporting system implemented in 2005 had covered approximately 7,500 companies in the industrial sector and 1,400 companies in the transportation sector. Due to ministry protection, however, a large number of companies and individual factories avoided making public data disclosures, citing trade secrets and other reasons. This included electric, steel, cement, chemical, and oil companies (*Asahi Shinbun* 2008b: 11).

Consideration of a domestic emissions trading system had come under fire during discussions of research groups such as the MoE's Domestic Emissions Trading System, round tables under the Fukuda cabinet, and the *Keidanren's* environment-related meetings in 2008. The steel and electric power industries strongly opposed a "cap and trade" system where the government would set levels of excess emissions or deficiencies to be traded among

companies, while criticizing the Kyoto Protocol as an "unequal treaty" that did not require developing countries to reduce their emissions. Seeking to avoid targeted sector-based regulation, the industry instead aimed to reduce CO2 emissions through technical cooperation, while steel mills resisted disclosures, arguing that those would reveal their secret corporate production costs (Takeuchi 2008: 3).

Beyond the amendment, the opposition DPJ proceeded to prepare a basic bill, differentiating itself from the Fukuda proposal by setting numerical targets for mid-term and long-term goals (Akiyama 2008: 1). Though the DPJ's original "Global Warming Free Strategy" had set the mid-term goal of a 20% reduction by 2020 compared to 1990, this was increased to 25% (*Asahi Shinbun* 2008c: 6). At Davos, Fukuda was forced to respond, though he only promised to set an unspecified national mid-term goal (*Asahi Shinbun* 2008d: 1). The media contrasted the administration's lack of concrete goals with the Basic Bill on Global Warming Countermeasures (henceforth, the Basic Bill) submitted to the Diet by the DPJ, which clearly stated both targets (*Asahi Shinbun* 2008e: 3).

In addition, the DPJ put together an early version of a "Green New Deal" concept, which aimed to create 2.5 million new jobs through energy conversion and revitalization of the agriculture, forestry, and fishery industries (Kagenishi 2008: 2). In March 2009, the DPJ's manifesto furthermore introduced a feed-in-tariff (FIT) scheme for renewable energy. The plan was to make these pledges the centerpiece of its general election campaign, tackling both global warming and job growth (Akiyama 2009: 2).

However, a panel of experts at a cabinet roundtable soon ruled that "overall, the negative impact on the economy would be greater," even with the growth of new industries (Goromaru and Yamaguchi 2009: 7).

The LDP attempted to regain control of the momentum by preparing its own bill, the “Basic Bill for the Promotion of the Low Carbon Society Formation,” primarily promoting technological efficiency, carbon recapture, and overseas greening investment with Japanese technology, predicated on developments within international negotiations towards specific reduction commitments. Bridging the gap between the LDP and DPJ’s proposals was expected to be difficult (*Asahi Shinbun* 2009: 6).

The DPJ in Power

The DPJ won a landslide victory in the 2009 general elections, and its leader Hatoyama Yukio became prime minister, forming a coalition government with the Social Democratic Party. Hatoyama promptly launched his 25% reductions initiative at the UN Climate Change Summit in September, which was highly praised abroad. *Asahi* argued that the DPJ’s Basic Bill was expected to “play the role of locomotive to pull us through a new era” to a low-carbon future (*Asahi Shinbun* 2010a: 3).



Figure 3: Prime Minister Hatoyama Yukio

speaking at the 2009 UN Climate Change Summit in New York. Courtesy of Mainichi Shinbun.

The MoE’s draft of the Basic Bill called for a domestic emissions trading system in which each company would set its own emissions cap and any excesses or deficiencies would be traded. The system was positioned as a pillar of the policy, despite industry opposition. However, the draft set a prerequisite for its mid-term goal: “the establishment of a fair and effective international framework of major countries and agreement on positive targets.” The draft also promoted renewable energy, less than 10% in 2009 (see Fig. 1), targeting 20% by 2025. It additionally recommended the creation of a FIT scheme for renewable energy, while emissions taxes would be studied (*Asahi Shinbun* 2010b: 7).

However, the subsequent outline presented at a policy meeting held by the MoE was less ambitious, satisfying no one. The 2009 DPJ manifesto had clearly introduced the creation of an emissions trading system, functioning through a “cap-and-trade” mechanism, but those words were missing from outline. Specific targets for renewable energy sources were also omitted (Hirai 2010: 6). The *Keidanren*, the Japan Chamber of Commerce and Industry, and the Japan Association of Corporate Executives issued a statement requesting that the economic and day-to-day impact be shown in advance and that the public’s voice be reflected in the drafting of the bill (*Asahi Shinbun* 2010c: 7). Nine industrial organizations, including the Japan Iron and Steel Federation, the Federation of Electric Power Companies of Japan, and the Petroleum Association of Japan, urged that the bill not include mid-term reduction targets, nor the emissions trading system (*Asahi Shinbun* 2010d: 6). Criticism that the bill was trying to do too much erupted not only from the business

community, but also from labor unions, the DPJ's supporters, over concerns with the emissions trading system (*Yomiuri Shinbun* 2010a: 2). *Rengo*, the Japanese Trade Union Confederation, was concerned about the stagnation of industrial activities and called for the introduction of methods other than cap-and-trade. The *Yomiuri* additionally emphasized the need for careful discussion to ensure public understanding (*Yomiuri Shinbun* 2010b: 3). Environmental NGOs, supposedly a DPJ supporting body, criticized the bill for doing too little. Fifteen environmental NGOs held a rally at the House of Representatives building, saying, "The bill must not be emasculated" (*Asahi Shinbun* 2010e: 6).

The media was critical of the proceedings. Unlike the previous laws, which only broadly stated national policy, this Basic Bill was exceptional, including a specific numerical target. Moreover, the prerequisite for the 25% reduction was "the realization of an international agreement," leading to fears that if international negotiations fell through, the bill could not advance. Furthermore, concerns were raised about the promotion of nuclear power. These included the risk of accidents, the aging of Japan's nuclear power plants, and radioactive waste (*Asahi Shinbun* 2010f: 3).

The LDP also submitted its bill, aiming for a 15% reduction in greenhouse gas emissions in 2020 compared to 2005 levels (about 8% less than in 1990). The main pillars of their plan included the construction of new nuclear power plants and the early realization of the fast breeder reactor cycle (*Asahi Shinbun* 2010g: 4 and *Yomiuri Shinbun* 2010c: 2). The MoE's draft also assumed increasing the nuclear power plan operation rate (from 60% to 88%) while planning for eight additional plants (*Asahi Shinbun* 2010h: 7). Meanwhile, labor unions, particularly steel and electric labor unions, were active lobbyists, mounting a powerful resistance to the Bill. (*Asahi Shinbun* 2010i: 1).

News media focused criticism on the wording of the DPJ's bill. *Asahi* pointed out that DPJ's manifesto clearly had a "cap" on total production, while the new draft substituted a per-unit method, only promoting efficiency per unit, while leaving overall production unchecked, a damning loophole (Komori 2010a: 9). Other criticism focused on the imbalanced targets of reductions. The draft called for "halving emissions" in the household and private vehicle sectors, only 20% of domestic emissions, and encouraged the purchase of next-generation automobiles and high-efficiency water heaters. Conversely, it was very lenient toward the corporate and public sectors, which produced the remainder of emissions (Komori 2010b: 9). WWF Japan, an environmental NGO, also argued that the wording of "economic growth," rather than a "sustainable society" indicated a continuing obsession with economic growth (WWF Japan 2010).

There was also strong concern about DPJ's pro-nuclear stance. Ten of the party's Diet members came from the nuclear power industry and loudly advocated its promotion. Prime Minister Hatoyama had also positioned nuclear power as a "transitional energy" in the DPJ's formational policy in 1996, but it was upgraded to a "core energy" in 2006. One 2010 article presciently concluded of nuclear power that, "If there is a major accident somewhere, the world could 'change direction' again. Various concerns and questions have not been dispelled" (Tamura 2010).

The DJP's Plans Unravel

Amid falling support for the administration over the issue of relocating the U.S. Futenma Air Station in Okinawa, plus donation and funding scandals surrounding its leadership, the DPJ's Basic Bill was put to a vote in the House of Representatives Environment Committee. During the debate, a number of internal

concerns were expressed. The DPJ's Yamazaki Makoto called attention to nuclear power development being the pillar of reductions, highlighting such problems as the cost of new construction, safety assurances, and environmental impacts; public safety was not yet guaranteed, which was why the operating rate had been kept low. Coalition party members argued that more emphasis should instead be placed on renewable energy and the establishment of a FIT system.

Opposition party New Komeito's Eda Yasuyuki criticized the precondition for the mid-term target, not only considering it too high at 25%, but that it was potentially subject to future international agreements. The Hatoyama administration responded that even if no international agreement was reached and the mid-term target failed to be legally binding, this would be accounted for by separately providing for a long-term 80% reduction target by 2050. The LDP's Yamamoto Koichi asked Environment Minister Ozawa Sakihito about the MoE's relationship with the business community. He responded that the steel and materials industries had not been positive about reducing domestic emissions. Rather, they would often say, "We have to go abroad."

Saito Ken of the LDP questioned the link between greening and economic growth promoted by the DPJ's models. In questioning, pro-industry METI stated that there was no straightforward link between reducing CO2 emissions and increasing employment, though acknowledged it was possible that emissions reductions efforts could also foster competitiveness between companies and increase employment. But when Saito asked METI how it saw the impact of the 25% reduction on industry and people's lives, the Ministry responded that it only could have a negative impact by 2020, assuming current technology. There were also questions about how quickly new power sources could be ramped up. Between 2005 and 2020, the supply

from wind power had to be increased tenfold, and that from solar power 85 times. METI held that this was a "fairly challenging target." The debate on the floor ended with an argument between Saito and Ozawa, who berated "the [LDP's] lack of a sense of urgency about global environmental issues" and "the lack of such a policy argument that links environmental issues to growth theory" (Minutes of the House of Representatives Environment Committee, 2010).

The DPJ and its coalition collapsed under falling approval ratings over the Futenma issue, forcing Hatoyama to resign by June 2010. Deliberations did not proceed and the Basic Bill was scrapped (*Yomiuri Shinbun* 2010d: 4). In light of the bill's failure, at the METI experts' meeting soon after, the industrial community and others expressed caution about the introduction of emissions trading. Labor and management representatives from the steel and electric power industries were particularly reluctant to tighten regulations (Nagatomi and Yamaguchi 2010: 7).

During the Upper House election campaign, the parties competitively touted that they would promote (differing) environmental measures to stimulate economic growth. However, news media described the mood as "tepid and lacking a concrete picture of how to achieve a low-carbon society." The DPJ proposed the introduction of highly regulated systems, whereas the LDP took a cautious stance toward legislation. *Asahi* opined that a sense of urgency was waning (Yamaguchi and Nagatomi: 3). In the background, furthermore, the COP15 negotiations for a post-Kyoto international countermeasures framework were stagnating. The negotiation was postponed without resolution due to conflicts between developed and developing countries (Bassewitz, 2013).

The DPJ's Kan Naoto formed a new cabinet and held a roundtable between the MoE and the

Keidanren in October 2010. Environment Minister Matsumoto Ryu sought understanding of the Basic Bill's reintroduction to the Diet. In response, the *Keidanren* expressed strong concerns about the negative impact of stricter regulations on the economy and called for a reconsideration of the target 25% reduction, even as the cabinet attempted to quickly reapprove the same failed bill (*Mainichi Shinbun* 2010: 4). In response, eight industry organizations, including steel, chemical, paper, and automobile companies, issued a joint statement opposing the bill and calling for its withdrawal (*Asahi Shinbun*. 2010j: 5).

Meanwhile, METI put together a proposal to leave maximum emissions targets for the domestic trading scheme in the hands of the companies themselves. This “bottom-up” method promoted industry-created plans driven by the introduction of energy-saving technologies and voluntary reporting, mirroring earlier legislation, either through total emissions or those per unit of production. By contrast, the MoE hoped to set the upper limit of emissions per company at a level that could be achieved by introducing existing energy-saving technologies. Unifying the two approaches would be difficult (Kogure 2010: 1).

In December, the CEC's draft for a domestic emissions trading system was finalized, proposing a cap on total corporate CO₂ emissions, while mandating reductions. However, the draft left room for companies with large burdens to be treated as exceptions, as the industrial subcommittee members again forced the MoE to make concessions. They reiterated that strict regulations would lead to a decline in domestic production and the overseas relocation of factories (*Asahi Shinbun* 2010k: 4). Additionally, nine organizations, including the Japan Iron and Steel Federation and the Japan Automobile Manufacturers Association, released a statement in 2010 opposing an extension of the Kyoto Protocol

(expiring in 2012). They argued that it would be “unfair and ineffective” without the participation of the two major emitters, the United States and China (Yoshida and Komori 2010: 9).

The media warned that the 25% reduction and the emissions trading system, the centerpieces of the global warming countermeasures program, were again in jeopardy. At a DPJ meeting in December discussing the introduction of emissions trading, lawmakers supporting energy-intensive industries and their labor unions shouted their opposition. The design phase of the program was postponed. When the DPJ had suffered a disastrous election defeat in July, the industrial community stepped up its efforts to crush the proposal, lobbying DPJ lawmakers. Within the party's ranks there was a widespread feeling that pushing the bill would hurt them during the next election. METI's Industrial Structure Council, as if to challenge the MoE, reiterated its counterproposal wherein companies would set their own reduction targets—little different than existing voluntary action plans (Nagatomi, Yamaguchi, and Komori 2010: 3).

3/11 Fallout and the Basic Bill's Demise

Under the Kan administration, the push for nuclear accelerated after June 2010; nuclear power was included in anti-deflation strategies. That same year saw the passage of a bill to allow a 10-year extension of the Law on Special Measures Concerning the Location of Nuclear Power Plants. The legislation gave preferential subsidies to municipalities with nuclear power plants and related facilities. In addition, the aging Fukushima Daiichi Unit 1 was officially approved in February 2011 to operate for more than 40 years.

For climate change, 2011 became an important year within international negotiations, which debated renewing or replacing Kyoto. Based on

the progress at COP16 in Cancun, *Asahi* emphasized the need for Japan to pass the Basic Law, while introducing environmental taxes and renewable energy purchase schemes (*Asahi Shinbun* 2011: 3). *Yomiuri* instead argued that the 25% reduction target should be revised to be more realistic (*Yomiuri Shinbun* 2011: 3). Soon after, on March 11th, the Great East Japan Earthquake and the Fukushima Daiichi incident occurred. In subsequent years, nuclear generation would approach zero as reactors were taken offline for review (see Figure 1).

An *Aera* magazine survey conducted shortly after March 11 reveals pro-nuclear attitudes to be strongly embedded, even in the face of disaster. Polling members of the DPJ, including its nuclear siting project team, when asked whether currently planned plants should be promoted as-is, none of the 10 respondents chose “should be promoted as they are,” but there were six members who directly or indirectly expressed the idea of “maintain promotion” in their reasons as “should be reviewed” or “other.” Project team chair Kawabata did not respond to the survey, but told *Aera*: “Fukushima is a disaster, but we can’t just stop using nuclear power. Increasing renewable energy as an alternative is hard work” (Sato 2011). The crisis at Fukushima Daiichi led to discussions about revising the 25% target, as it quickly became difficult to promote new plants, despite the Basic Energy Plan calling for the construction of nine new plants by 2020 (Nagatomi and Kobayashi 2011: 5).

There was some urgency in passing the Basic Bill as an attempt to maintain a presence in international negotiations. The Cancun Agreements called for reductions in United States, which had left the Kyoto Protocol, and emerging countries such as China and India. For 2011’s COP17, Ozawa (the former Environment Minister) prepared three draft bills, revising or deleting the reduction targets

and requiring additional study before committing to anything. He described the drafts as “the result of a painful search. A basic law is essential to advance international negotiations.” One Japanese government negotiator said, “There will be no negotiations if we are left empty-handed...we will be nothing more than a mere advocate of opposition” to Kyoto’s extension (Nagatomi and Hirai 2011: 5). Although Japan would go to September’s COP17 with a 25% reduction target (still hinging on nuclear power expansion), there was little evidence showing that it was serious about—or capable of—achieving the target.

One after another, the global warming countermeasures that had been the signature of the DPJ administration, the Basic Bill, the domestic emissions trading system, and the environmental tax, were shelved. Japan opposed Kyoto’s second commitment period until a new international framework was created. As feared, Japan’s international negotiations were conducted “empty-handed,” and its persuasive negotiating power was limited in the face of those who strongly insisted on Kyoto’s extension (Kobayashi and Hirai 2011: 3). The European Union took control of leadership and approved the extension with conditions, resolving to work toward a new framework by 2015 (Brandt, 2018).

Achieving an actual 25% reduction seemed even more impossible. Even if nuclear power accounted for 20-25% of electrical generation by 2030, greenhouse gas emissions in 2020 would be at most 11% lower than in 1990. With a 0% nuclear power ratio, it would be only a 7% reduction (Kobayashi and Nakagawa 2012: 7).

Without an alternative to nuclear, and with flagging international negotiations and waning DPJ power, the Basic Bill was scrapped yet again. For the next fiscal year and beyond, the DPJ had envisioned creating a new action plan based on the long-awaited Basic Bill, but the

lack of legislation made that prospect uncertain (Kobayashi 2012: 5). As a result of the lower house election, the LDP returned to power in December 2012, forming a coalition with the New Komeito Party, closing the window on the DPJ and its signature climate policy.

Epilogue: Adaptation and a New Movement Toward Carbon Neutrality

Between the Kyoto withdrawal and the scrapped bill, prefectures and municipalities were left without a legal basis for their own reductions. A 2011 MoE survey announced a range of municipalities that hadn't even formulated plans, with nine prefectures waiting for the national government to act, versus 15 that attempted to promote 25% reductions, mirroring the Basic Bill (*Asahi Shinbun* 2013: 7).

The government began drafting an adaptation plan from 2015. In May, the Cabinet approved the "Global Warming Action Plan," which described how national and local governments, industry, and citizens would each achieve the reduction targets, including the proliferation of eco-cars, LEDs, energy-saving renovations, and other measures. Spurred on by the Paris Agreement's goal of restraining temperature increases to within 2°C, this became the first plan since Kyoto (Kanda 2016: 9). Per the Nationally Determined Contribution (NDC) set in place by Paris, Japan drafted a goal of reaching 26% in reductions by 2030.

In 2018, the Climate Change Adaptation Bill was submitted to the Diet to reduce global warming-induced natural disasters, poor crop growth, and damage to human health. It aimed to formulate adaptation measures, promote indicators and methods for assessing climate change impacts, generate and compile data, and provide central support and training towards local adaptation efforts. During the bill's debate, both the ruling and opposition

demanded that the bill be passed quickly and that adaptation measures be promoted (Minutes of the House of Representatives Environment Committee, 2018). The Abe administration's NDC of 26% by 2030 was reiterated in 2020, which did not advance new commitments (CAT, 2020).

The first legislative movements toward reductions came almost a decade after the failure of the 2010 Bill, with Prime Minister Suga Yoshihide's administration declaring that Japan would aim to become carbon neutral by 2050. Movement began to not write a new bill, but to modify the existing 1998 Law. In his opening statement and subsequent questioning within the House Environmental Committee in 2021, Environment Minister Koizumi Shinjiro reported his view that Japan had fallen behind when compared to other nations in its approach and leadership toward climate change. Koizumi expressed the idea that Japan's industries would become non-competitive in the global marketplace without a commitment toward carbon neutrality, which had become increasingly normalized since Paris. He proposed a NDC of 46% by 2030 and immediately working toward a portfolio of renewable energy development projects. Some attendees expressed concern both that the NDC goal was too little, and if renewables themselves were enough to achieve even those levels of reductions. Koizumi responded that the NDC was realistic due to renewables having variable lead times, while noting Suga's opposition to nuclear expansion. Questions followed with regards to how to get the public involved, as well as how to secure both funding and know-how for localities to begin to make the transition (Minutes of the House of Representatives Environment Committee, 2021).

Rhetoric from the ministries changed from 2021 forward as well. METI, within its updated countermeasures plan, displayed a much-altered attitude, declaring that it would

proceed forward “Based on the idea that global warming countermeasures are no longer a constraint on economic growth; proactive global warming countermeasures will bring about changes within the industrial structure, economy, and society that will lead to significant growth” (METI, 2021). The MoE would echo this sentiment within its long-term growth strategy, emphasizing the need to transition to the ‘circular economy’ of global trends, for “if Japan fails to respond to such changes, it could lose its industrial competitiveness” and that by contrast, if the nation were to “take the lead in establishing international rules and leverage its decarbonization technologies” it could lead to more growth (MoE, 2021).

The revisions were approved in May 2021, specifically stating a national target of net-zero emissions by 2050, promoting renewable energy, with expectations that this would comprise 30% of Japan’s power by 2030 (Nagasaki and Kawada 2021: 7). The intention of the Suga administration’s plan was to “reduce dependence on nuclear power as much as possible” (Kawada and Nagasaki 2021: 3). This notion was quickly reversed.

Suga was replaced by Kishida Fumio in October 2021. In the face of the Russian invasion of Ukraine, the Kishida administration announced that it would restart reactors and extend the lifespan of present ones in order to lessen dependence on Russian energy and balance rising import costs (Sakoda and Takemoto, 2022). Sticking to the 2050 reductions goal and the attainment of a “green transformation,” (GX) the Kishida cabinet resolved in December 2022 to scrap the (already extended) 60-year operating limit on old reactors, and while aiming to replace them as needed, including the installation of a new generation of hardware, with the target of nuclear becoming 20-22% of domestic energy generation (Mainichi Shinbun 2022).

Though political regime change and changing standards abroad have pushed the LDP to begin considering emissions reduction measures, this hasn’t often translated into ambitious goals, nor substantial reductions. The DPJ’s Basic Bill was arguably ahead of its time, while Japan, reticent to become an early adopter and risk its own economy and industry push-back, avoided the position of climate leadership later taken up by the EU. Commitments to stated percentages or target years would not be enshrined in legislation until other major economies also had taken a similar path. Historically, in terms of legislation, the LDP has favored measured iterative change in the realm of voluntary reductions and technical cooperation, technological improvement and efficiency, or overseas carbon offsets; its opponents have sought more dramatic change through promoting emissions information disclosure, carbon taxes, renewables, and specific reduction goals. The movements of the last two years have to some extent unified these approaches.

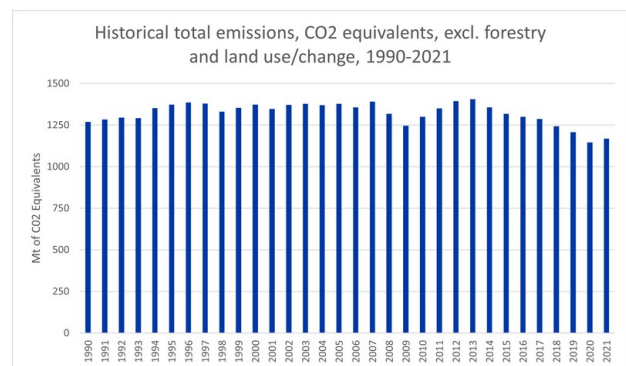


Figure 4: Adapted from Climate Action Tracker, 2023

Emissions have been on a slight downward trend since 2013 [Figure 4], though this also coincides with the peak and decline of the

population, as well as other factors, notably Covid-19. Moreover, there was a slight increase in emissions in 2021. Japan's renewable energy now has a pathway for greater growth, while policies toward the long-term use of nuclear are unclear. Japan, as the 6th largest cumulative historic emitter of emissions based on fossil fuels (Evans, 2021) has a long way to go to achieve carbon neutrality.

References

*Sources listed as *Asahi Shinbun*, *Mainichi Shinbun*, or *Yomiuri Shinbun* are unsigned articles from the respective newspapers.

Agency for Natural Resources and Energy 資源エネルギー庁. ‘令和2年度エネルギーに関する年次報告(エネルギー白書2021)PDF版 [White Paper on Energy].’ <https://www.enecho.meti.go.jp/about/whitepaper/2021/pdf/>

Akiyama, Noriko 秋山訓子. 2008. ‘温室ガス、民主『90年比60%減』 [Greenhouse gases, DPJ “60% reduction from 1990 levels.”].’ *Asahi Shinbun*, 21 May, Evening Edition, 1.

Akiyama, Noriko 秋山訓子. 2009. ‘エコ発電全量の買い取り義務化 [Mandatory purchase of all eco-generated electricity].’ *Asahi Shinbun*, 3 March, Evening Edition, 2.

Aldrich, Daniel P. 2010. *Site Fights: Divisive Facilities and Civil Society in Japan and the West*. Ithaca: Cornell University Press.

Asahi Shinbun. 1998a. ‘温暖化対策法案の概要 [Summary of the Measures to Cope with Global Warming Bill].’ 16 April, Evening Edition, 1.

Asahi Shinbun. 1998b. ‘この法案では非力だ [This Bill would be ineffective].’ 30 April, 5.

Asahi Shinbun. 1999. ‘原発『理解得つつ推進』 [Nuclear power plants “to be promoted with understanding”].’ 6 March, 1.

Asahi Shinbun. 2001. ‘京都議定書、来年批准を明言 [The Kyoto Protocol will be ratified next year, (the government) stated].’ 13 November, 4.

Asahi Shinbun. 2002. ‘温暖化対策の具体化へ達成計画 [Achievement plan to materialize global warming countermeasures].’ 24 February, 3.

Asahi Shinbun. 2005. ‘温室効果ガスの排出量、企業に報告義務 [Require companies to report on greenhouse gas emissions].’ 26 February, Evening Edition, 1.

Asahi Shinbun. 2008a. ‘CO2排出の報告義務、企業単位に [CO2 emissions reporting requirements on a company-by-company basi].’ 27 February, 1.

Asahi Shinbun. 2008b. ‘温室効果ガス排出量、電力・鉄鋼上位に [Electricity and steel industries top the list for greenhouse gas emissions].’ 28 March, 11.

Asahi Shinbun. 2008c. ‘温室ガス減、民主『25%』 [Greenhouse gas reduction, DPJ claim “25%”].’ 21 May, 6.

Asahi Shinbun. 2008d. ‘□中期目標』をサミット前に [“Mid-term goal” before the Summit].’ 2 June, Evening Edition, 1.

Asahi Shinbun. 2008e. ‘福田構想 [Fukuda Initiative].’ 10 June, 3.

Asahi Shinbun. 2009. ‘温暖化対策法案、民主が参院提出 [Global warming countermeasures bill submitted to the House of Councillors by the DPJ].’ 25 April, 6.

Asahi Shinbun. 2010a. ‘温暖化基本法 [Basic

- Law on Global Warming].’ 28 January, 3.
- Asahi Shinbun*. 2010b. ‘国内排出量取引、12年度以降 [Domestic emissions trading to be introduced in FY12 and beyond].’ 10 February, 7.
- Asahi Shinbun*. 2010c. ‘温暖化対策法に経済3団体が意見書 [Three economic organizations express their opinions on the Global Warming Countermeasures Law].’ 24 February, 7.
- Asahi Shinbun*. 2010d. ‘温暖化対策法案『検証が不十分』 [Global Warming Countermeasures Bill “Insufficiently verified”].’ 27 February, 6.
- Asahi Shinbun*. 2010e. ‘NGO「骨抜きだ」×』 [NGO insist “No bones about it”].’ 3 March, 6.
- Asahi Shinbun*. 2010f. ‘温暖化と原発 [Global warming and nuclear power].’ 13 March, 3.
- Asahi Shinbun*. 2010g. ‘自民が温暖化法案を提出 [LDP submit Global Warming Bill].’ 20 March, 4.
- Asahi Shinbun*. 2010h. ‘温室ガス25%削減、『行程表』原案示す [25% reduction in greenhouse gas emissions, draft of the “Roadmap” is presented].’ 20 March, 7.
- Asahi Shinbun*. 2010i. ‘自然エネルギー争奪戦 [Battle for renewable energy].’ 21 March, 1.
- Asahi Shinbun*. 2010j. ‘温暖化対策法案に反対 [Opposition to the Global Warming Prevention Bill].’ 9 October, 5.
- Asahi Shinbun*. 2010k. ‘排出量取引、例外拡大も [Emissions trading, with expanded exceptions].’ 7 December, 4.
- Asahi Shinbun*. 2011. ‘温暖化防止 [Prevention of global warming].’ 17 January, 3.
- Asahi Shinbun*. 2013. ‘温室効果ガス削減、国の目標白紙 [Greenhouse gas reduction. National targets blanked out].’ 28 May, Evening Edition, 7.
- Bassewitz, Nadia von. 2013. ‘International Climate Change Policy: Where Do We Stand?’ In *Climate Change: International Law and Global Governance*, Volume 2, eds. Oliver Ruppel, et al. Baden-Baden: Nomos, 101-70.
- Bertrand, Savannah. 2022. ‘How the Inflation Reduction Act and Bipartisan Infrastructure Law Work Together to Advance Climate Action.’ EESI, 12 September, <https://www.eesi.org/articles/view/how-the-inflation-reduction-act-and-bipartisan-infrastructure-law-work-together-to-advance-climate-action>.
- Bloomberg*. 2021. ‘50% of All Coal Plants in Europe Set to Close, Marking Major Milestone in Phase Out of Coal in Europe by 2030.’ 23 March. <https://www.bloomberg.org/press/50-of-all-coal-plants-in-europe-set-to-close-marking-major-milestone-in-phase-out-of-coal-in-europe-by-2030/>.
- Brandi, Clara. 2018. ‘EU Climate Leadership? Europe’s Role in Global Climate Negotiations.’ In *Climate Change and Cultural Transition in Europe*, Volume 4, eds. Claus Leggewie and Franz Mauelshagen. Leiden, Brill, 219-44.
- Climate Action Tracker. 2020. ‘Japan’s updated NDC fails to increase action, undermines Paris Agreement.’ 30 March. <https://climateactiontracker.org/climate-target-update-tracker/japan/2020-03-30/>
- Climate Action Tracker, 2023. ‘Assessment Data, Japan.’ https://climateactiontracker.org/documents/1133/202305_CAT_AssessmentData_JPN.xlsx
- Colignon, Richard, and Chikako Usui. 2001. ‘The Resilience of Japan’s Iron Triangle: Amakudari.’ *Asian Survey* 41 (5), 865-95.
- Cothorn, Keegan, and Junichi Hasegawa. 2022.

‘Developments of the Perception of Climate Change and Abnormal Weather in Postwar Japan.’ *Shima: The International Journal of Research into Island Cultures* 16 (1).

Dennison, Susi, et al. 2021. ‘Europe’s green moment: How to meet the climate challenge.’ European Council on Foreign Relations.

<https://ecfr.eu/publication/europes-green-moment-how-to-meet-the-climate-challenge/>

Enecho. ‘Time Series Table, 2021.’ https://www.enecho.meti.go.jp/statistics/total_energy/xls/stte/stte_jikeiretu2021fykaku.xlsx

Evans, Simon. 2021. ‘Analysis: Which countries are historically responsible for climate change?’ *Carbon Brief*, 10 May. <https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change/>

Fisher, Dana R. 2004. ‘Beyond Kyoto: The Formation of a Japanese Climate Change Regime.’ In *Global Warming and East Asia: The Domestic and International Politics of Climate Change.*, edited by Paul G Harris. London and New York: Routledge, 187-205.

Fujino, Motofumi 藤野基文. 2012. ‘記者の目 [Reporter’s eye].’ *Mainichi Shinbun*, 4 July, 9.

Goromaru, Kenichi and Tomohisa Yamaguchi 五郎丸健一、山口智久. 2009. ‘中期目標、問われる麻生首相 [Prime Minister Aso questioned on mid-term goals].’ *Asahi Shinbun*, 18 April, 7.

Hale, Thomas. 2018. ‘The Role of Sub-State and Non-State Actors in International Climate Processes.’ *Chatham House*. 28 November.

Hirai, Yoshikazu 平井良和. 2010. ‘国内の排出量取引制度、政府内で調整難航 [Domestic emissions trading system. Difficult to coordinate within the government].’ *Asahi Shinbun*, 18 February, 6.

Holroyd, Carin. 2009. ‘National Mobilization

and Global Engagement: Understanding Japan’s Response to Global Climate Change Initiatives.’ *Asian Perspective* 33 (2), 73-96.

Inada, Shinji and Naoki Shoji 稲田信司、庄司直樹. 2008. ‘対応迫られる日本 [Japan is under pressure to respond].’ *Asahi Shinbun*, 6 January, 3.

Kagenishi, Haruko 蔭西晴子. 2008. ‘民主が日本版『緑の雇用』構想 [DPJ’s plan for Japan’s version of “green jobs”].’ *Asahi Shinbun*, 6 December, Evening Edition, 2.

Kameyama, Yasuko. 2021. ‘Climate Change Policy: Can New Actors Affect Japan’s Policy-Making in the Paris Agreement Era?’ *Social Science Japan Journal* 24 (1), 67-84.

Kanda, Akemi 神田明美. 2016. ‘政府が策定した地球温暖化対策計画って？ [What is the government’s plan for global warming countermeasures?].’ *Asahi Shinbun*, 17 May, Evening Edition, 9.

Kawada, Toshio and Junichiro Nagasaki 川田俊男、長崎潤一郎. 2021. ‘新政権、脱炭素の行方は [The new government and the future of decarbonization].’ *Asahi Shinbun*, 8 October, 3.

Kinoshita, Shotaro, et al. 2021. ‘Failure of world’s 1st offshore floating wind farm in Fukushima disappoints 3.11 survivors’ *Mainichi Shinbun*, 6 March.

<https://mainichi.jp/english/articles/20210305/p2a/00m/0na/034000c>.

Kobayashi, Tetsu and Yoshikazu Hirai 小林哲、平井良和. 2011. ‘かすむ25%削減目標 [Hazy 25% reduction target].’ *Asahi Shinbun*, 26 November, 3.

Kobayashi, Tetsu and Toru Nagakawa 小林哲、中川透. 2012. ‘温暖化対策、議論の的 [Global warming countermeasures, a point of debate].’ *Asahi Shinbun*, 7 July, 7.

Kobayashi, Tetsu 小林哲. 2012. ‘『温室ガ

ス25%減』廃案 [Abolition of “25% reduction in greenhouse gas emissions”].’ *Asahi Shinbun*, 17 November, 5.

Kogure, Tetsuo 小暮哲夫. 2010. ‘経産省案『企業が排出目標』 [METI Proposal: “Companies set emission targets”].’ *Asahi Shinbun*, 25 October, 1.

Komori, Atsushi 小森敦司. 2010a. ‘温暖化対策基本法 [Basic Law on Global Warming Countermeasures].’ *Asahi Shinbun*, 28 March, 9.

Komori, Atsushi 小森敦司. 2010b. ‘エネルギー基本計画 [Basic Energy Plan].’ *Asahi Shinbun*, 4 May, 9.

Mainichi Shinbun Photo Bank. 2009. ‘国連気候変動サミット 演説する鳩山首相 ニューヨーク [Prime Minister Hatoyama Yukio speaking at the UN Climate Change Summit in New York].’ 22 September. https://photobank.mainichi.co.jp/kiji_detail.php?id=P20090922dd1dd1phj395000

Mainichi Shinbun. 2010. ‘米倉・経団連会長：環境省に苦言 [Yonekura, Chairman of Keidanren: Complaints to the Ministry of the Environment].’ 5 October, 4.

Mainichi Shinbun. 2015. ‘未来へのバトン：COP21 [Baton to the Future: COP21].’ 24 October, 3.

Mainichi Shinbun, 2021. ‘再考エネルギー：太陽光発電が「公害」（その1） [Rethinking energy: Solar power generation is “pollution” (Part 1)].’ 28 June, 1.

Mainichi Shinbun. 2022. ‘Japan reverts to max nuclear power to tackle energy, climate,’ <https://mainichi.jp/english/articles/20221222/p2g/00m/0bu/054000c>.

McCormack, Gavan. 2002. ‘Japan’s Iron Triangle.’ *New Left Review* 13, 5-23.

METI. 2021. ‘地球温暖化対策計画 [Global

Warming Countermeasures Plan].’ https://www.meti.go.jp/policy/energy_environment/global_warming/ontaikeikaku/keikaku_honbun.pdf

Minutes of the House of Representatives Environment Committee. 1998, 4 September.

Minutes of the House of Representatives Environment Committee. 2010, 14 May.

Minutes of the House of Representatives Environment Committee. 2018, 18 May.

Minutes of the House of Representatives Environment Committee. 2021, 16, 20, 23, 27 April.

Mishima, Ko. 2019, ‘The Presidentialization of Japan’s LDP Politics.’ *World Affairs* 182, no. 1, 97-123.

MoE. 2021. ‘成長戦略としての長期戦略 [Longterm Strategy Enabling Growth].’ <https://www.env.go.jp/content/900440767.pdf>.

Mufson, Steve and Claire Parker. 2022 ‘War in Ukraine generates interest in nuclear energy, despite danger.’ *Washington Post*, 1 April, <https://www.washingtonpost.com/climate-environment/2022/04/15/nuclear-energy-europe-ukraine-war/>.

Nagasaki, Junichiro and Toshio Kawada 長崎潤一郎、川田俊男. 2021. ‘太陽光の計画1.7倍に [1.7 times more planned for solar].’ *Asahi Shinbun*, 7 July, 7.

Nagatomi, Yukiko and Tetsu Kobayashi 長富由希子、小林哲. 2011. ‘温暖化対策、原発にらみ [Global warming countermeasures, considering nuclear power plants].’ *Asahi Shinbun*, 12 July, 6.

Nagatomi, Yukiko and Tomoyoshi Yamaguchi 長富由希子、山口智久. 2010. ‘排出量取引、なお異論 [Emissions trading still controversial].’ *Asahi Shinbun*, 11 June, 7.

- Nagatomi, Yukiko and Yoshikazu Hirai 長富由希子、平井良和. 2011. ‘温室ガス25%減、削除も [25% reduction in greenhouse gases may be removed].’ *Asahi Shinbun*, 8 June, 5.
- Nagatomi, Yukiko, Tomoyoshi Yamaguchi and Atsushi Komori 長富由希子、山口智久、小森敦司. 2010. ‘排出量取引、崖っぷち [Emissions trading stand on the brink of precipice].’ *Asahi Shinbun*, 27 December, 3.
- Nakamura, Masao, Takuya Takahashi, and Ilan Vertinsky. 2001. ‘Why Japanese Firms Choose to Certify: A Study of Managerial Responses to Environmental Issues.’ *Journal of Environmental Economics and Management* 42 (01), 23-52.
- Ono, Ryosuke 小野良祐. 2002. ‘温暖化対策の調整難航 [Difficulty in coordinating global warming measures].’ *Asahi Shinbun*, 9 January, 13.
- Pesendorfer, D. 2014. ‘Environmental Governance in Europe: A Comparative Analysis of New Environmental Policy Instruments.’ *Journal of Environmental Law* 26 (1), 170-72.
- RILG. 2023. ‘陽光発電設備の規制に関する条例 [Ordinances on regulation of photovoltaic power generation facilities],’ 29 April. http://www.rilg.or.jp/htdocs/img/reiki/005_solar.htm.
- Sakoda, Mayu and Yoshifumi Takemoto. ‘Japan signals return to nuclear power to stabilize energy supply.’ *Reuters*, 24 August, 2022. <https://www.reuters.com/world/asia-pacific/japan-pm-call-development-construction-new-generation-nuclear-power-plants-2022-08-24/>.
- Sato, Akira 佐藤章. 2011. ‘原発推進議員』に問う [Question to the “pro-nuclear power plant legislators”].’ *Aera*, 25 April, 17-20.
- Sugiyama, Noriko, and Tsuneo Takeuchi. 2008. ‘Local Policies for Climate Change in Japan.’ *The Journal of Environment & Development* 17.4: 424-441.
- Takamura, Yukari. 2012. ‘Japan.’ In *Climate Change Liability Transnational Law and Practice*, edited by Richard Lord, 207-41. Cambridge; New York: Cambridge University Press.
- Takeuchi, Yukifumi 竹内幸史. 2008. ‘『鉄は国家』呪縛 [The “Iron is the Nation” Curse].’ *Asahi Shinbun*, 19 May, 3.
- Tamura, Hideharu 田村栄治. 2010. ‘鳩山政権・民主党に問う [Question to the Hatoyama Administration and DPJ].’ *Aera*, 19 April, 30-31.
- Wakabayashi, Masayo, and Toshi H Arimura. 2016. ‘Voluntary Agreements to Encourage Proactive Firm Action against Climate Change: An Empirical Study of Industry Associations’ Voluntary Action Plans in Japan.’ *Journal of Cleaner Production* 112, 2885-95.
- Watanabe, Rie. ‘Breaking Iron Triangles: Beliefs and Interests in Japanese Renewable Energy Policy.’ *Social Science Japan Journal* 24, no. 1 (2021), 9-44.
- WWF Japan. 2010. ‘地球温暖化対策基本法案が廃案に [Basic Bill on Global Warming Countermeasures scrapped].’ 18 June. <https://www.wwf.or.jp/activities/statement/3413.html>.
- Yamaguchi, Tomohisa and Yukiko Nagatomi 山口智久、長富由希子. 2010. ‘環境 [Environment].’ *Asahi Shinbun*, 29 June, 3.
- Yomiuri Shinbun*. 2010a. ‘排出取引『効率目標も検討を』 [Emissions trading: “Efficiency targets should also be considered”].’ 5 March, 2.
- Yomiuri Shinbun*. 2010b. ‘温暖化対策法案 [Global warming countermeasures bill].’ 13 March, 3.
- Yomiuri Shinbun*. 2010c. ‘温暖化対策 [Global warming countermeasures].’ 19 March, 2.

Yomiuri Shinbun. 2010d. ‘国会閉幕 [Diet session adjourned].’ 17 June, 2. [Global warming countermeasures law].’ 9 March, 3.

Yomiuri Shinbun. 2011. ‘温暖化対策 [Global warming countermeasures].’ 11 January, 3. *Yoshida, Hironori and Atsushi Komori*、
[Toward a low-carbon society, stores also save energy].’ Asahi Shinbun, 7 December, 9.

Yomiuri Shinbun. 2016. ‘温暖化対策法

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