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Did the Japanese patient follow the doctor's orders? Mostly no! A public choice analysis of greenhouse gas emissions trading schemes in Japan before and after the earthquake

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Did the Japanese Patient Follow the Doctor's
Orders? Mostly no!
A Public Choice Analysis of Greenhouse Gas Emissions
Trading Schemes in Japan before and after the Earthquake

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A Public Choice Analysis of Greenhouse Gas Emissions Trading Schemes in Japan before and after the Earthquake

Abstract

The Great Tōhoku-Earthquake and the following nuclear meltdown in Fukushima called the world's attention to Japan's energy and climate policy. Japan is one of the biggest emitters of greenhouse gases in the world and still far away from reaching its Kyoto target. Emissions trading systems have been used in Japanese climate policy since 2005. However, experiences have been disillusioning: Major emission reductions have not been achieved, and a functioning market does not exist. Hence, we ask what the political reasons for the failure of carbon markets in Japan are and how they can be overcome. We use Public Choice arguments, but also analyze actual climate policy making in Japan on a case study basis. Thus, on the one hand, we identify the political obstacles of implementing ambitious greenhouse gas emissions trading systems in Japan, and, on the other hand, we evaluate Public Choice's arguments and environmental policy making.

JEL-Code: D620, D720, D730, Q480, Q540, Q580.

Keywords: Japan, climate policy, emissions trading, Public Choice, case study.

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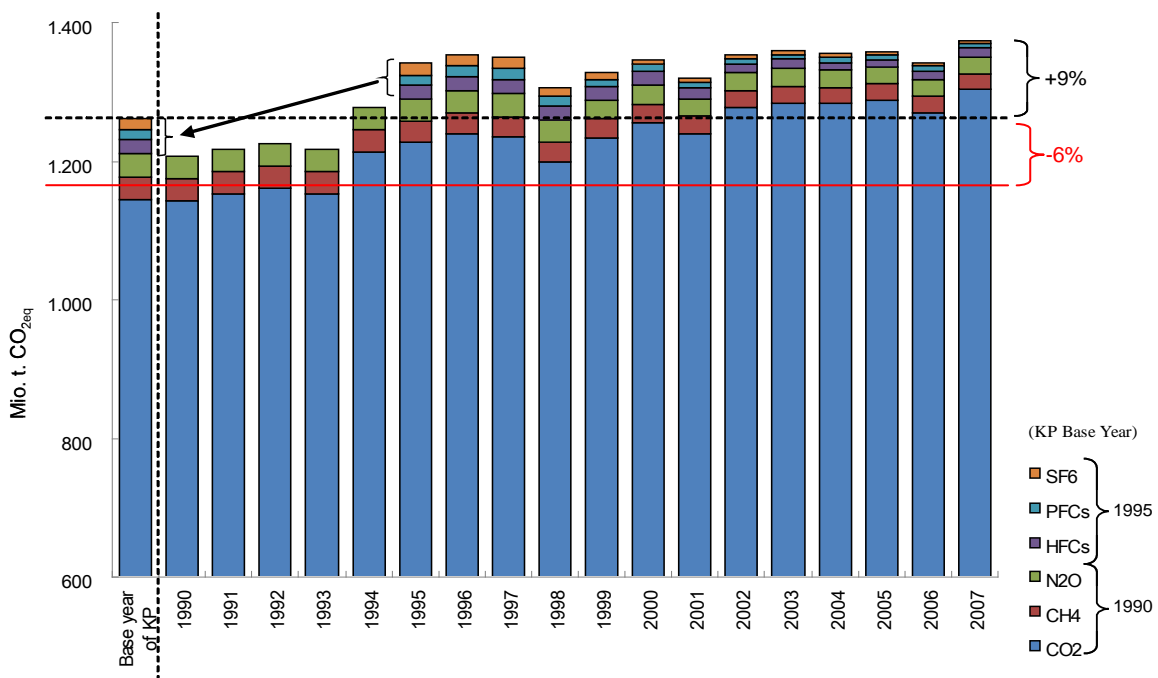
Parts of the paper originate from the research projects „Linking Emissions Trading Systems: Towards Socially and Ecologically Acceptable Cap-and-Trade Policies in Europe, the USA, and Japan (LETSCaP)“ and „Market-Based Climate Policy in Japan – A Political Economy Analysis“ carried out at the Competence Center for Climate Change Mitigation and Adaptation (CliMA) at Kassel University, sponsored by the German Federal Ministry of Education and Research (BMBF) and the Japan Society for the Promotion of Sciences (JSPS). Special thanks of Sven Rudolph also goes to Dr. Park Seung-Joon, who hosted several research stays at Kyoto Sangyo University. Major parts of the paper were presented at the 10th Global Conference on Environmental Taxation 2009 in Lisbon and the 11th Conference of the International Society of Ecological Economics 2010 in Oldenburg.

“One of the dangers with ivory tower theorizing is that it is easy to lose sight of the actual set of problems which need to be solved, and the range of solutions. ... [T]his loss of sight has become increasingly evident in the theoretical structure underlying environmental economics, which often emphasize elegance at the expense of realism. ... [B]oth normative and positive theorizing could greatly benefit from a careful examination of the results of recent innovative approaches to environmental management” (Hahn 1998: 95).

1 Introduction

In 1989 Hahn (1989) posed the question „How the Patient Followed the Doctor’s Orders” referring to early experiences with emissions trading in the USA. He concluded that “virtually none of the systems ... exhibits the purity of the instruments which are the subject of theoretical inquiry”, “all ... systems ... place great importance on the status quo”, and “distributional concerns play an important role in the acceptability” (Hahn 1989: 97, 109). The same insights can be obtained from environmental policies and greenhouse gas emissions trading schemes in Japan, where carbon markets have been used since 2005, but results are modest.

Figure 1: Greenhouse gas emissions in Japan 1990-2007



Source: MoE 2009b: 1

While Japan's energy efficiency is still among the highest in the world, the rate of improvement has significantly slowed down since 1990 (IEA 2009: 40ff). Japan is responsible for 4.3% of global greenhouse emissions. Total emissions in 2007⁴ were 1,374 Million Tons of carbon dioxide equivalents (CO_{2eq}), 9% above 1990 levels (MoE 2009a: Ch. 2).

After intense and successful efforts to increase energy efficiency in the aftermath of the oil price shocks of the 1970s due to cost reasons, Japan's specific national climate policy already started in 1990 and is today based on the Kyoto Protocol Target Achievement Plan implemented in 2005 and revised in 2008 (GoJ 2008).⁵ At the third Conference of the Parties (COP 3) to the United Nations Framework Convention on Climate Change (UNFCCC) in Kyoto in 1997, Japan, successfully taking a mediator position between the ambitious EU and the reluctant USA positions, committed to emission reductions of 6% by 2008/2012 based on 1990 levels. In addition, at the climate summit in Copenhagen, Japan committed to a 25% reduction by 2020 and intends to reduce its emissions by 60-80% by 2050 with 1990 as base year (GoJ 2010: 38). The Kyoto Protocol target is divided into greenhouse gas emission reduction from forest sinks (3.8%), the use of project-based Kyoto mechanisms (1.6%), and domestic reductions (the residual). Altogether, comparing 2007 emissions and the Kyoto target, Japan is about 15% short of its commitment.

On the policy instrument level, Japan's Kyoto Protocol Target Achievement Plan focuses on voluntary action. In 1997, Japanese industry adopted the Voluntary Action Plan, today comprising 35 industry groups and 80% of greenhouse gas emissions from industry and utilities (Wakabayashi/Sugiyama 2007). The overall target was fixed to stabilizing greenhouse gas emissions at 1990 levels by 2010. However, besides absolute volume targets, intensity targets are allowed and the project-based Kyoto mechanisms can be used in order to compensate greenhouse gas emissions. Thus, even the 0.5% overall reduction of greenhouse gases between 1990 and 2006 are in fact not due to domestic absolute volume reduction efforts by Japanese companies. Market-based instruments, on the other hand, are only mentioned in the Kyoto Protocol Target Achievement Plan of further research. Carbon taxes, thus, have politically failed several times since 2004; however from 2011 onwards, the now ruling Democratic Party of Japan (DPJ) intends to use low-level carbon taxes. Carbon markets have been used in Japan since 2005, following a global trend of applying this particular instrument.

⁴ Using 2007 emission levels is reasonable, because the 2008 financial crisis and the economic downturn has led to unusually low levels of emissions in the subsequent years, which presumably will increase again once the crisis is overcome.

⁵ See also Schröder (2003) and Watanabe (2011).

Emissions trading schemes as a tool for coping with environmental problems have been spreading globally, especially since the new millennium (OECD 2002, 2004). While environmental economists had been emphasizing the merits of this approach since the invention of tradable permit systems by Crocker (1966) and Dales (1968a, b),⁶ it took until the 1990s to implement major emission markets in the USA, which turned out to be highly successful (Ellerman et al. 2000).⁷ In climate politics, emissions trading was not used before the Kyoto Protocol of 1997 allowed the Clean Development Mechanism (CDM), Joint Implementation (JI), and International Emissions Trading (IET). Since then, greenhouse gas emissions trading schemes have been evolving rapidly across the globe including supranational system in the EU, national approaches in New Zealand, and even regional and local systems in the north-eastern states of the USA and the city of Tokyo.; in addition to the implemented schemes, many countries are seriously considering their use.⁸

Experiences with carbon markets are mixed so far, the EU Emissions Trading Scheme being the most vivid example (Ellerman et al. 2010): While the initial trading period (2005-2007) can be considered an economic and environmental failure due to over-allocation and highly bureaucratic initial allocation schemes,⁹ the second (2008-2012) and the third (2013-2020) trading periods promise major advances towards efficiency and effectiveness due to a more stringent, gradually decreasing EU-wide cap as well as a steadily increasing share of auctioning administered on the EU instead of the member state level. Altogether, carbon markets appear to become the most important policy instrument in global climate policy, and they are capable of being both economically efficient and environmentally effective.

Japan – a leader in environmental policy and technology development in the 1970s and 1980s (Weidner 1992) – has been using carbon markets since 2005. Experiences, however, are mixed: Emission reductions have been negligible, and the creation of an efficient carbon market has failed. Thus, in this paper we try to answer the following three questions:

- (1) What are the major design flaws of the Japanese carbon markets?
- (2) What are the political reasons behind the failure of Japanese carbon markets?
- (3) How can the flaws be overcome against the specific political background?

⁶ See also Tietenberg (2006).

⁷ Early experiences with flexible command-and-control policies had been gathered in the USA already since the 1970s (Hahn/Hester 1989).

⁸ See also http://ec.europa.eu/clima/policies/ets/index_en.htm, <http://www.climatechange.govt.nz/emissions-trading-scheme/>, <http://www.rggi.org/home>; http://www.kankyo.metro.tokyo.jp/en/climate/cap_and_trade.html, <http://www.westernclimateinitiative.org/>, <http://www.climatechange.gov.au>, <http://www.pointcarbon.com/news/asia/>, <http://www.midwesternaccord.org/index.html>, , <http://www.pewclimate.org/federal/congress>

⁹ Most of these deficiencies can be explained by using the Public Choice approach (Rudolph 2005)

While political science and even sociology literature has analyzed environmental policy making in Japan in general and some of the authors have even focused on climate policy,¹⁰ there is a gap of knowledge on policy instrument choice in Japanese climate policy with respect to market-based instruments. This is true not only for the literature in western languages, but also for Japanese sources, because a tradition of policy feasibility and implementation research does not exist in Japan. In addition, to date, an individualistic actor-based approach such as Public Choice has not been applied to the specific case of climate policy instrument choice in Japan. Thus, in order to answer the questions of this paper, we apply environmental economics as well as Public Choice within a case study design.¹¹

In chapter 2 we describe and analyze Japan's carbon markets based on environmental economics' criteria. In chapter 3 we use Public Choice arguments to explain the political failure of carbon markets by analyzing the most important actors, like voters, interest groups, bureaucracy, and government. Also in chapter 3, we confront Public Choice predictions with the behavior of climate policy actors in Japan. Chapter 4 sums up and derives recommendations for improving the chances of implementing ambitious carbon markets in Japan.

2 Design and Effects of Japanese Greenhouse Gas Emission Trading Schemes

The effectiveness of emission trading schemes can be analyzed by using two well-established environmental economics criteria: economic efficiency and environmental effectiveness.¹² Using these two criteria, we now describe the design of Japanese carbon markets, evaluate them and identify the design elements responsible for inefficiencies and ineffectiveness.

2.1 Design

In 2005, Japan's environmental ministry started the experimental Japan Voluntary Emission Trading Scheme (JVETS)¹³ in order to motivate companies not taking part in the Voluntary Action Plan to reduce greenhouse gas emissions efficiently. Participation, however, is voluntary. Until 2009, subsidies of around 3 Billion Yen in total were used annually as incentives for company participation. Companies could use the subsidies for financing up to one third of

¹⁰ See for general studies on Japanese environmental politics Schreurs (2002, 2009), Imura/Schreurs (2005), Broadbent (1999); and for climate policy studies Schröder (2003), Watanabe (2011).

¹¹ See for general environmental economics arguments e.g. Endres (2010) and Tietenberg (2011), for Public Choice Mueller (2003), and for the use of case studies Yin (2009) and Nutzinger/Rudolph (2011).

¹² More concrete, economic efficiency can be differentiated into company-level, overall efficiency, cost attribution, administrative and market transaction costs, property rights etc., while environmental effectiveness can be operationalized by the concepts of accuracy in reaching the target, innovation incentives etc (Endres 2010).

¹³ See for the JVETS design e.g. MoE (2008a, b), MoE (2009c, d), MoE 2010a.

their abatement measures. JVETS only includes CO₂ emissions from fossil fuel burning. Targets are fixed bottom-up by companies, but these targets have to be in absolute volume terms. The target for the first year must be 1% lower than average emissions of the past three years; and in the subsequent years the target has to be tightened by one percentage point. Japanese Emission Allowances (JEA) are handed out free-of-charge, allowing for the emission of one ton of CO₂ in any given year per allowance. The amount of allowances given to any individual company is determined by each company's individual target. Using grandfathering, companies receive allowances based on their base year emissions lessened by the promised emission reductions. Borrowing of allowances from future reductions is not permitted, while banking early reductions is unlimited. Besides Japanese Emissions Allowances, Emission Reduction Units (ERU) from Joint Implementation as well as Certified Emission Reductions (CER) from the Clean Development Mechanism can be used for compliance, although they should be complementary to domestic action. Trading is carried out via the Trade Matching System, which is supposed to lower transaction costs. Market interventions do not apply. Trading phases last 2½ years and start in April, the first month of the Japanese fiscal year. Monitoring follows Kyoto Protocol guidelines and is based on ISO 14064 and 14065.

Supplemental to JVETS, in 2008, the Integrated Domestic Market of Emissions Trading (IDMET)¹⁴ was established by the Japanese Cabinet. Major targets are to achieve significant emission reductions, to include all major emitters, and to integrate different types of allowances from national and international schemes. Coverage is similar to JVETS; however, besides individual companies, entire industry sectors can participate as single units. While subsidies are not available, different options for bottom-up target setting and initial allowance allocations are provided. Participants can pick absolute volume as well as specific intensity targets¹⁵; and they can choose the Kyoto period of 2008-2012 or parts of this period as compliance terms. Nevertheless, participants' targets must at least be as stringent as their Voluntary Action Plan goal, or, if lower, must equal actual emission levels. Companies without Voluntary Action Plan participation have to follow JVETS' rules. In addition to picking the target, participants can choose between several options of free-of-charge initial allocation schemes. In the case of intensity targets, participants receive allowances as emission reduction credits ex post based on the intensity target and actual emissions, each multiplied by the actual output. Participants with absolute volume targets, on the other hand, can receive allowances either ex ante or ex post. If they choose the ex ante option, they receive allowances according

¹⁴ See for IDMET design issues e.g. IDMET-Secretariat (2008), MoE (2009b, 2010a).

¹⁵ Absolute volume targets are based on tons of CO_{2eq}, intensity targets are e.g. given in CO_{2eq} per output unit.

to their target, but they have to keep 90% of the allowances in their hold until the final settlement. In the ex post allocation case, at the end of the compliance period participants receive allowances as credits for reductions beyond the target. In contrast to JVETS, not only banking but also borrowing is unlimited. In addition, project-based Kyoto mechanisms can be used without limits. Compliance periods and the trading system follow JVETS' rules. While generally allowances can be traded freely, only a certain amount of allowances is transferable: In the ex post initial allocation case, only surplus credits can be traded, and in the ex ante case, only 10% of the assigned allowances can be transferred.

2.2 Effects

Experiences with Japan's Voluntary Emission Trading System (JVETS) are ambivalent.¹⁶ Companies' individual targets were all reached in every compliance period between 2006 and 2008. Total reductions of participants accounted for 29% below base-year levels, thus even exceeding commitments. Nevertheless, compared to Japan's Kyoto commitment, reductions were negligible. Total reductions of JVETS participants summed up to only 0.03% of total Japanese greenhouse gas emissions in 1990. This is mainly because major emitters such as utilities and energy intensive industries did not participate. An efficient carbon market could not be established. The maximum participation was 86 companies, and total transactions accounted for a maximum of 51 transactions and a maximum trading volume of 82,624 allowances per year. The share of allowances traded has even decreased from 8 to 2% since the start of the program. The average price for allowances was 1,200 Yen. As the initial allocation was free-of-charge, only abatement costs were born by emitters, but not total emission costs. Hence, on the one hand, emitters did not suffer an additional burden, but, on the other hand, only the weak form of the Polluter-Pays-Principle was implemented. While supposedly administrative costs were high due to the complicated initial allocation, transactions costs on the secondary market were low due to a working market infrastructure. Incentives to innovate were not effective, due to voluntary participation and low allowances prices.

Even less convincing is the Integrated Domestic Market of Emission Trading System (IDMET).¹⁷ While participation significantly increased to 700 companies in 2009 and even nine power companies and more than 100 energy intensive companies accepted targets, only one transfer of exactly one ton of CO₂ occurred. In addition, the steel and car industry participated on a sector basis, thus impeding an efficient allocation of abatement measure within these

¹⁶ See for data on the experiences MoE (2008a, b), MoE (2009c, d), and MoE (2010a).

¹⁷ See for data on IDMET MoE (2009b, 2010a) and Kawamura 2010.

sectors. Hence, an efficient carbon market and a clear price signal could not develop. Again, the free-of-charge initial allocation scheme prevented heavy burdens on industry, but it only followed the weak form of the Polluter-Pays-Principle. Different initial allocation options for companies to choose from must have increased administrative costs, while again transaction costs should be low. In ecological terms, IDMET is a failure. While coverage increased to 50% of Japanese CO₂ emissions, of the 75 participants accepting targets in 2008, only 30 picked absolute volume targets, while 45 – including utilities – chose intensity targets. The targets, though, are stringent according to the economics ministry METI (2010: 8). Hence, many important emitters such as utilities and the paper industry failed to reach their targets, thus even overcompensating reductions achieved by other participants. As a consequence, in 2008, total emissions exceeded the total target level by more than 83 Mio. t. of CO₂. The intensive use of borrowing and project-based Kyoto mechanisms however protected industries from non-compliance. Also, in 2008, only 25 of 75 participants accepted external verification, so that industry data is far from being reliable.

Altogether, both Japanese greenhouse gas emissions trading schemes (GHG ETS) have not been able to establish an ecologically effective and economically efficient carbon market. While the major greenhouse gas is covered in both programs, allowing for a acceptable compromise between minimizing abatement cost and keeping administrative costs low, emitter coverage is small due to voluntary participation and almost arbitrary partially intensity-based bottom-up target setting. This not only weakens the environmental effectiveness but also hinders the establishment of an efficient carbon market. It can be expected that only emitters with low abatement costs participate, which, in addition, only set business-as-usual targets. This in turn leads to a lack of scarcity on the carbon market, distorted price signals and inadequate incentives to innovate. Also, this approach prevents reaching absolute emission reductions otherwise implemented by a top-down total volume cap. Using free initial allocation schemes delays the price signal and increases administrative costs. While banking is a reasonable measure to minimize abatement costs over time without detrimental environmental effects, borrowing may increase emissions and wrongfully lower the allowance price, if surplus reductions are not realized in the future. Unlimited use of project-based Kyoto mechanisms increases domestic emissions, and may even not lower global emission levels if projects are unreliable. Also, the domestic price level may be deteriorated and incentives to innovate m reduced. While monitoring appears effective in both programs, penalties are not sufficient, thus leading to incentives for non-compliance.

Summing up, while the establishment of the trading and monitoring infrastructure can be considered a success, neither JVETS nor IDMET have successfully implemented efficient and effective carbon markets. Major flaws are the non-binding participation, the bottom-up setting of reduction targets, intensity-based targets, the generous acceptance of borrowing and project-based Kyoto mechanisms, and the lack of severe penalties in case of non-compliance.

In the following chapter we now try to explain the reasons of the deficiencies in Japanese carbon markets by using the Public choice approach to environmental policy, but also to give a general explanation why effective ecological policy using incentive orientated instruments is so difficult to implement in representative democracies. Directly following each theoretical analysis we look into the specific political actor's behavior in Japan.

3 The Political Economy of Emissions Trading: Theory and the Japanese practice

We now turn to the economic analysis of the most important actors and discuss the motives or interests in environmental policy of voters, politicians, public administrations, producers and other interest groups¹⁸. Figure 3.1 shows the interdependence of all of these actors and that in any policy process the outcome of negotiations is one of all parties' competing interests. In environmental policy, being a policy that ought to preserve the common public good "the environment", these interactions are of great importance, as our analysis will show.

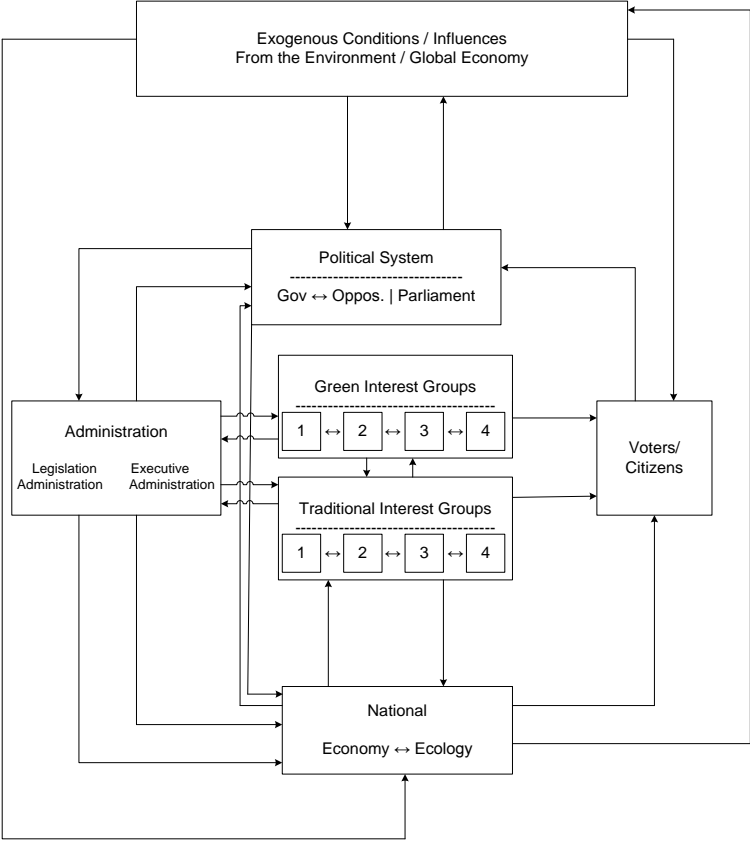
The main focus of the Public Choice analysis is discussing the different incentives of all actors in general and the use of market-based instruments. But not only is the choice of the instrument of great importance for successful environmental policy, also the general positions of the actors matter.

In relation to climate change mitigation, Llewellyn (2010) discusses seven different intellectual positions of opponents of a stronger environmental policy: Firstly, he argues, that there is a group of people who generally sees no need for any emission reduction policy and, secondly, some believe that any action comes to late anyway. Both arguments can – in his opinion - be overcome by establishing the credibility of the science. Thirdly, there is concern, that emission reductions and economic growth are incompatible. The next two positions (four and five) he describes, are the targets of the costs of emission reductions: on the one hand, some argue that emission reductions are too costly and on the other hand they have to be borne 'up-front'. Furthermore (position six), emission reduction targets are considered unrealistic and cannot

¹⁸ The theoretical subsections closely follow Kollmann and Schneider (2010) as well as Kollmann, Reichl and Schneider (2011)

be achieved due to a lack of political will. Lastly (position seven), there is no first mover advantage involved with imposing environmental policy. With these fundamental arguments in mind, we will now turn to analyzing the individual position of the actors involved.

Figure 2: The interaction of economic agents from a public choice perspective



Source: Kollmann and Schneider (2010)

In order to apply Public Choice’s analysis and get a clear impression of Japanese climate politics in practice, we immediately confront Public Choice arguments with the behavior of political actors in Japan’s decision making process on greenhouse gas emission trading schemes (GHG ETS).¹⁹ In accordance with the above given figure 3.1, the main actors in Japanese climate politics and the debate on GHG ETS are the general public or the voters, interest groups such as environmental and industry organizations, the ministries of the environment and economic affairs, and politicians of differing parties.

¹⁹ Due to the lack of sources in western languages, we chose a multiple-source approach (Yin 2009), extracting data not only from literature and primary written sources such as legal texts, policy documents, and speech manuscripts but also from more than 30 elite interviews (Grant 2000) with climate policy experts in Japan.

3.1 Voters

To start our actor-based analysis, we first take a close look at the democratic sovereign, the voting public.

3.1.1 The Public Choice Perspective on Voters' Behavior

Citizens'/voters' sensitivity towards environmental issues has continuously increased throughout recent decades. One indicator for this is that voters attach more and more importance to the use of renewable energy sources. Wüstenhagen and Bilharz (2006) show that in Germany within the period 1984 to 2003 the public attitude towards energy sources has shifted notably from nuclear power to renewable energy sources (wind, solar). While in 1984 only 17% of respondents expected wind energy to significantly contribute to Germany's energy supply, in the following three decades the figure increased, to 42% in 2003. Public opinion analysis, undertaken by the European Commission, shows that 50% of European Citizens consider climate change a serious problem (see Table 3.1). In yet another survey for the European Commission, 97% of respondents considered environmental protection very or fairly important.²⁰

A lack of information about market-based instruments in environmental policy, especially about energy taxes, is found in several studies.²¹ One line of arguments why market-based instruments are not satisfactorily incorporated in environmental policies is, that this lack of information on the voters' side is too costly to be overcome. Understanding the complexity of environmental issues requires higher education, interest and time to learn, therefore acquiring information is subject to high opportunity costs.²² Klok et al. (2006) report that participants in a Danish focus group argued that "they could not accept something they did not understand".

Another aspect is that voters are more likely to accept a policy they are familiar with, as is the case with regulation or command-and-control measures, in contrast to market-based instruments. Dresner et al. (2006) point out that "familiarity breeds affection: those being controlled regard it as 'tolerable' while an alternative approach might not be seen as such". This position is also supported by Brännlund and Persson (2010) who find, that people generally dislike the word "tax" and are more willing to accept a policy that even though actually being a tax is labeled differently. That terminology itself may have a considerable influence on acceptance

²⁰ See European Commission (2008a).

²¹ For France see Deroubaix and Leveque (2004), for Ireland see Clinch and Dunne (2006), for Germany see Beuermann and Santarius (2006).

²² Compare also Anthoff and Hahn (2010).

is also shown in Clinch and Dunne (2006) who propose to relabeling taxes as charges, since 'tax' is considered a 'bad' word.

Kirchgässner and Schneider (2003) argue that selfish voting is a major obstacle to any kind of environmental policy. A data set that allows the analysis of individual characteristics of voting behavior was collected in Switzerland in the year 2000, when Swiss citizens voted on three proposals for taxes on fossil energy. Thalmann (2004) analyzed the data and found that political affinity and education played a role in voter behavior. Both citizens with an affinity to green and left-of-center parties and citizens with higher education had higher rates of participation in the referenda and also higher rates of approval of the proposals, whereas income – *ceteris paribus* - did not significantly influence voting behavior. In another analysis of the votes on the three Swiss environmental proposals, Bornstein and Lanz (2008) found that socially accepted norms and ideology do play a role in the referendum outcome and that price and/or income effects are not the only factors taken into account by voters.

Considering the values of social discount rates discussed in the literature, it appears that voters care more about the here and now than about the future: In an overview of relevant papers, van der Bergh (2009) reports values of discount rates varying between 3 and 6%, where any social discount rate greater than 0% implies that a higher weight (importance) is given to early generations than to generations in the distant future.²³ Layton and Levine (2003) calculate a public discount rate of nearly 1%. Even though there is an ongoing dispute in the literature about the use and size of social discount rates, especially in view of the costs of fighting climate change, there is a widespread tendency to assume that voters at least to some extent, attach more value to the present than to some unknown future. Most interestingly, Halla et al. (2008) find that parents worry significantly more about CO₂ emissions than citizens without children, which is another argument in favor of a non-zero inter-temporal discount rate.

Summing up our theoretical discussion, we find three main issues that can explain why voters do not explicitly vote for the environment: firstly, the provision of the public good 'environment' allows free-rider behavior, secondly, the time delay between costs and benefits of environmental policies (especially CO₂ emission reduction) is difficult to explain and non-zero social discount rates diminish the future's importance and thirdly, other more urgent issues, like unemployment or income growth, have a higher priority than less tangible environmental issues.

²³ Compare Howarth (2001) and Ackerman et al. (2009).

3.1.2 Interests and Influence of the Japanese Public

Just as Public Choice predicts, political priorities of the Japanese public are not centered on environmental issues but rather on topics such as jobs and social security (Imura 2005: 78ff, Schröder 2003: 85f),²⁴ which suggests selfish voting-behavior. Recent economic crises have even intensified the emphasis on economic growth, so that environmental issues are not capable of significantly determining voters' decisions in general elections.

Nevertheless, starting with the severe environmental problems of the 1960s and 1970s (e.g. Minamata Disease, Itai Itai), environmental issues have steadily gained importance in the Japanese public (Imura 2005: 78ff) just as in the German and European case given above. However, the visibility of the immediate effects was an important factor for public awareness. Climate change, on the other hand, lacks the immediate perceptibility of the problem and its consequences, as Reiche/Krebs (1999: 17) point out, even though recent catastrophes and media events²⁵ have made global warming and climate policy more widely visible. Politicizing the issue, however, is more difficult especially in the countries of the industrialized northern hemisphere, because negative effects mainly burden less developed countries in the south and future generations; an aspect already emphasized by Public Choice. In Japan, a public awareness of climate change and the need to counteract has been shown in several surveys (COJ 2005, 2007). The Japanese public also overwhelmingly supports climate protection targets and policies, considering the EU as a role model (Hirata 2009, Ikkatai 2009, Yamagishi 2009). However, there is a fear of additional financial burdens, and the willingness-to-pay for measures against climate change is low (JfS 2010, JPC 2010).²⁶ And, as Public Choice already claimed, the same is true for the state of knowledge on climate change and (market-based) measures (Ikkatai 2009, Imura/Takeuchi 2009), whereat rational ignorance emphasized by Downs (1957) increases when questions become more specific (COJ 2005, JPC 2010).

Choosing policy instruments is considered to be a genuine task of the government; particular interests towards policy instruments do not exist (Sugiyama 2009), which supports the Public Choice hypothesis of a lack of knowledge. Surveys show that the Japanese public generally considers measures for companies important; however, there is no clear preference for specific economic sectors to be focused or for means to be applied (JPC 2010, COJ 2005). Concerning carbon markets, neither a basic understanding nor design preferences can be detected in

²⁴ For confirmation by interviewees see also Asaoka 2009, Ikkatai 2009, Yamagishi 2009.

²⁵ Most prominent examples are Hurricane Katrina in the USA, the Nobel Prizes for the IPCC and Al Gore, the COP 15 media event.

²⁶ More than half of the respondents were only willing to pay 1,000 Yen per family per month, while around 25% were even unwilling to pay at all (JPC 2010).

the Japanese public (Morotomi 2009). But there is a prejudice against the immoral trading of pollution rights. In addition, price incentives are generally deemed dispensable, because moral-based action of the Japanese collective is considered to be sufficient for solving societal problems (Park 2009).

The political influence of the Japanese public is rather low (Schröder 2003: 82).²⁷ Basically there are two options for Japanese citizens to engage politically: voting at general elections and joining interest groups. As votes in general elections, just as Public Choice supposes, are not cast on the basis of environmental or even climate policy considerations but rather based on economic and social issues, political pressure to act on global warming does not stem from voters' behavior at the ballot box.²⁸ Creating political pressure by political protest – e.g. by joining environmental organizations or participating in demonstrations –, on the other hand, fails, because, as already mentioned by Olson (1965), incentives to free-ride apply. Even more important, there is a lack of tradition of political protest in Japan (Schröder 2003: 106). Instead, there is a deeply rooted trust in government and, even more, in the moral behavior of the Japanese collective. Demonstrations and other protest activities are deemed illegitimate and unqualified action against the democratically elected government and hence even against the Japanese society itself. In addition, collectivistic group-oriented thinking disqualifies protesters as outsiders, who are not willing to participate in the joint effort of the Japanese society to improve its conditions (Imura 2005: 50, Lokowandt 2001: 71f).

Summing up, while there is a general awareness of global warming and the need for action in the Japanese public, selfish voting based on economic and social issues prevail. (Market-based) policy instruments are not considered to be of interest to voters and there is a lack in information on that issue; however there is an underlying distrust in tradable rights to pollute. Moreover, the general awareness does not create political pressure to act, because citizens do not yield significant power, neither as voters nor as protesters.²⁹ The Public Choice approach appears to be a valuable first step for analyzing voters' behavior in environmental policy. However, it also becomes clear that exogenous factors such as the perceptibility of the problem and the political culture determine both interests and influence of the public. This has become most obvious when the 2011 melt-downs in the Fukushima nuclear power plants have brought up to 60,000 Japanese citizens on the streets of Tokyo, representing the biggest pro-

²⁷ For confirmation by interviewees also see Asaoka (2009), Imura/Takeuchi (2009), Park (2009).

²⁸ In the electoral campaign of 2009 climate policy was only fifth amongst the most important political issues in the manifesto of the Democratic Party (DPJ 2009).

²⁹ See also Kollmann and Schneider (2010) and Kollmann, Reichl and Schneider (2011).

test movement since the 1960s and being considered by some observers as the start of a major change in the Japanese political culture (Naß 2011).

3.2 Politicians

We now turn to analyze the second major political actor group, the politicians and their positions concerning the introduction of an ecological policy using market-based instruments.

3.2.1 The Public Choice Perspective on Politicians' Behavior

Major questions from the Public Choice perspective are whether politicians are intrinsically motivated to engage in environmental policies, and whether they are in favor of market-based instruments.

According to Mueller (2003) the standard political economy approach assumes a selfish behavior of politicians, where utility is gained by being re-elected and by reaching certain ideological policy goals. If re-election is modeled as a constraint, a politician will promote certain popular policies in order to meet the median voter's preferences.³⁰ Weck-Hannemann (2008) argues that politicians are intrinsically motivated to implement instruments that are in line with their political ideology and increase their power or their personal income. Whether or not they can follow their own ideological goals or have to comply with the median voter's demands depends on how stringent the re-election constraint is. Then again, List and Sturm (2006) argue that the re-election constraint may be valid only for major political topics like overall government spending or income distribution, it may be less important for secondary issues like environmental policy: a view that is also supported by Franzese (2002).

The question whether the re-election constraint is an important factor in a politician's decision to engage in environmental policy can also be discussed in connection with the partisan hypothesis, which means that the re-election constraint is valid only in election times, but does not influence the politician's decisions throughout his term.³¹

According to Frey and Schneider (1978) the governing party that aims to stay in power will seek to please the median voter only if their re-election chances are low. If the re-election probability is high, they will undertake policies in line with their ideology. As we stated above, politicians want to be re-elected, in order to stay in power and to receive benefits. What does

³⁰ See Maux (2009) for a formal discussion of the median-voter model and Böhringer and Vogt (2004) for an empirical discussion of how the national median voter's willingness to pay determined the outcome of the Kyoto negotiations.

³¹ See Tellier (2006) and Franzese (2002) for a review of empirical studies of partisan cycles and Maux (2009) for a formal approach to the partisan model.

this mean for a politician's intrinsic motivation to pursue environmental policies? Firstly voters value the environment but do not have complete information about environmental issues, their importance and the toolkit of instruments that can be used. Secondly they also fear being over-burdened financially. And thirdly, following List and Sturm (2006) environmental issues may be of only secondary interest to the median voter, but if secondary issues do not influence the median voter's election decision, there may be voters who attach extraordinarily high importance to such issues. A politician may therefore be inclined to pursue this secondary policy in order to receive additional votes.

Weck-Hannemann (2008) also points out that politicians are not completely tied to the median voter's demands, because rational voters acquire political information only up to the point where the marginal cost of acquiring additional information equals the marginal benefits. As the single voter's influence on an election outcome is marginal, this benefit from acquiring information is marginal, too. In consequence, with uninformed voters, politicians can pursue their own goals. This lack of information on the voters' side offers leeway for interest groups to influence politicians according to their own motives.

After arguing that a selfish politician may not be intrinsically motivated to promote ecological policies using market-based instruments, but reacts in line with the other actors' interests, the question arises whether such a policy will be carried out efficiently. From our discussion so far, it follows that the design of a specific policy is strongly influenced by interest groups whose interests we will discuss in the following.

3.2.2 Japanese Parliamentarians and Prime Ministers

Due to the traditional way of policy making, politicians in Japan are not the most important political players in climate policy; however, in the end, they officially legitimize laws, and the Prime Minister exercises the guideline competence (Schröder 2003: 77ff, Imura 2005: 53ff). After the elections of the Lower and the Upper House in 2009 and 2010, the Democratic Party of Japan (DPJ), the Liberal-Democratic Party (LDP), the Buddhist New Komei Party (NKP), Japan's Communist Party (JCP), the Social-Democratic Party (SDP), the People's New Party (PNP), and Your Party (YP) are part of the Japanese Diet. As the DPJ and the LDP are the major actors, we focus on these parties' interests.³²

³² The smaller political parties can be divided into a left-wing, environment friendly and an indifferent political camp (WWF Japan 2010, Hirata 2009): The left-wing parties NKP, JCP and SDP, in accordance with their party ideology and Public Choice predictions, lean to ambitious climate policy positions such as ambitious targets (up to -30% by 2020 and -80% by 2050; base 1990), concrete reduction roadmaps, and a binding GHG ETS with an

Generally speaking, as Public Choice predicts, climate policy is not a major political issue or even a goal in party programs, because climate policy does not represent a decisive voting issue for Japanese citizens and thus does not help selfish politicians to be re-elected (Adachi 2009, Imura/Takeuchi 2009, Morotomi 2009). Hence, climate policy is only a marginal topic in manifestos, which also are only widely available since 2009, which adds to voters' lack of information. In the public debate only individual voices are heard on the issue of climate policy, while the majority of parliamentarians are not interested. A coordinated positioning within parties is basically non-existent.

However, the now ruling DPJ has a moderate left-wing ideology, thus, as Public Choice suggests, leaning more to environmental topics than its major competitor, the LDP.³³ Still, even in the DPJ only a small number of party members are in favor of environmental positions, while the majority of DPJ parliamentarians care more about economic growth and job-related issues, because these are better suited for winning elections. Nevertheless, the DPJ, trying to please the at least somewhat ecologically-minded Japanese median voter in the pre-election period of 2008 and 2009, favored a climate protection act with ambitious targets,³⁴ all of which should be mainly reached by domestic reductions. A binding greenhouse gas emissions trading scheme (GHG ETS) is considered a very important instrument for the industrial sector and should be implemented within a year after the introduction of the climate protection act. The long-time ruling LDP leans to a more conservative and industry-friendly ideology. Hence and in line with Public Choice predictions, the Kyoto Protocol, although officially accepted, is considered unfair, and a climate policy forerunner role of Japan is declined due to the fear of competitive disadvantages. The LDP supports only less stringent targets³⁵ and considers the project-based Kyoto mechanisms as well as technology exports to be major parts of Japan's climate protection strategy. The LDP also demands all major emitting countries to be part of a post-2012-regime and fair targets for Japan. A domestic GHG ETS is seen with skepticism.

In terms of political power, parliamentarians are less important compared to the government and the ministries (Adachi 2009, Niizawa 2009). While they legitimize laws in the National Parliament, the drafting of the laws is almost solely done by the bureaucracy (Morishima 2009). Parliamentarians suffer from information asymmetries due to Japan's traditional way of policy making and a lack of resources such as personal staff (e.g. consultants, secretaries).

absolute volume cap. The PNP and the YP, on the other hand, do not hold specific climate policy positions, or they simply welcome a moderate green growth strategy (*Green New Deal*).

³³ For a comparison of party manifestos see WWF Japan (2010). For confirmation of positions by interviewees see also Adachi (2009), Asaoka (2009), Morotomi (2009).

³⁴ Concrete demands were -6% by 2008-2012, -25% by 2020, -80% by 2050 based on 1990 levels.

³⁵ Such as 15% by 2020 and 80% by 2050 with a 2005 base year.

In addition, environmentally active parliamentarians are few in numbers in all parties and even the inter-party environmental working group of the Parliament, the *kankyō zoku*, is one of the smallest (Ikkatai 2009, Morotomi 2009, Niizawa 2009).

On the individual party level, DPJ's power was limited due to the dominance of the LDP since World War II (Adachi 2009, Morotomi 2009). Only DPJ's landslide electoral victory of August 2009, when it gained almost two thirds of the seats and established itself as the leader of the still ruling left-wing coalition, earned significant influence to the DPJ. However, this political margin was soon reduced, when the DPJ lost seats and the absolute majority at the Upper House in the July 2010 elections. Not commanding over a two third majority in the Lower House anymore, which would allow overruling Upper House decisions, forces the DPJ to form coalitions, e.g. for passing a basic climate protection law. In addition, the DPJ cannot rely on ecologically-minded networks similar to the "Iron Triangle". While the DPJ is affiliated with Japanese labor unions, in the field of climate policy this coalition does not hold due to labor unions' fear for job loss resulting from ambitious domestic climate policy. LDP, on the other hand, has been dominating Japanese politics for decades, uninterruptedly establishing formal and informal networks within the "Iron Triangle" (Ikkatai 2009, Kawamura/Nishimura 2009). While LDP's major power source dried up due to DPJ's electoral victory of 2009, seat losses of the DPJ in 2010 and the stable networks of LDP suggest a continuing strong position of the LDP, and hence preventively effective environmental policy measures.

On the government level Japan has seen ten Prime Ministers since the Kyoto Conference. Still, due to the guideline competence, Prime Ministers in principle have a significant influence on climate policy in Japan. Compared to party position, Prime Minister – even though most of them have come from the LDP – have been decisively in favor of the Kyoto Protocol and even ambitious climate policy instruments, although there are differences in emphasis between individuals (Morotomi 2009). Most prominent recent proposals for ambitious climate policies were the following:³⁶

- Shinzo Abe (2006-2007) had intensively studied the EU GHG ETS and proposed „Cool Earth 50“ including a 50% global reduction target for 2050 and a -60-80% target for Japan (Abe 2007).

³⁶ Other prime ministers acted as follows: Junichiro Koizumi (2001-2006) was a market-oriented reformer and thus, besides recommending the ratification of the Kyoto Protocol in the parliament, initiated the debate on market-based climate policy instruments as an alternative to the traditional command-and-control approach of Japanese pollution control (Ikkatai 2009, Park 2009). Taro Aso (2008-2009) put the emphasis of his term of office on overcoming the economic crisis in the aftermaths of the global financial meltdown (Hirata 2009, Morotomi 2009). Climate policy was not a major issue and domestic GHG ETS was not advanced; however, the internal discussion focused on the mid-term target, whereat Aso (2009) favored a 15% reduction by 2020 (base 2005).

- Yasuo Fukuda (2007-2008), reacting to international pressure around the two G8 summits in Heiligendamm and Hokkaido and himself putting pressure on domestic opponents of GHG ETS such as the economics ministry, announced the introduction of a stringent domestic GHG ETS in the “Fukuda Vision” (Fukuda 2008a, b).
- Yukio Hatoyama (2009-2010), the first DPJ Prime Minister since the 1950s, following his election promises, declared a mid-term reduction target of 25% based on 1990 emission levels and a basic climate protection law incorporating GHG ETS and a carbon tax (Hatoyama 2009).

Hatoyama’s successors, however, focused on economic recovery after the world financial crisis of 2008 and especially after the devastating (Blume 2010).

Summing up, party positions on climate policy and emissions trading are widely spread. While proponents such as the DPJ are still not capable of passing ambitious legislation on the issue and opponents such as the LDP remain highly influential, parliamentarians in general are only of minor political importance in Japan. Prime Ministers, on the other hand, have played an important and often supporting role in initiating climate policies. Again, exogenous conditions such as the political party spectrum and the current majority situation in the parliament are important determinants of politicians’ interests and influence. Nevertheless, Public Choice gives a good first indication on selfish politicians’ preferences and their receptiveness for party ideologies and election cycles.

3.3 Interest groups

In modern democracies interest groups play a major role in forming public policy. Hence, we now turn to analyzing interest groups behavior in environmental policy, in which industry groups and environmental organizations are the major players.

3.3.1 The Public Choice Perspective on Traditional and Green Interest Groups

We argue that traditional interest groups do not prefer ecological policies, but prefer command-and-control measures over market-based instruments in environmental policy. We furthermore argue that green interest groups strongly prefer ecological or environmental policies, but also favor command-and-control measures and have a weaker position in the policy making process. In the following we analyze whether from these propositions, the restricted use of market-based instruments can be explained.

If the lobbyists' information is reliable and is used, then the question arises which attributes of an interest group will make them more successful in pursuing their individual goals. We label four: Firstly, traditional interest group lobbyists will have more financial backing than environmental interest groups. Most interestingly, the so called Green-10, composed of the ten major environmental advocacy groups (BirdLife International, Climate Action Network Europe, CEE Bankwatch Network, European Environmental Bureau, European Federation of Transport and Environment, Health and Environment Alliance, Friends of the Earth Europe, Greenpeace Europe, International Friends of Nature, and WWF European Policy Office), receive substantial funding from the European Commission (excluding Greenpeace which has the policy not to accept financial support from governments, the EU or industry). The importance of any interest group's budget is shown by Eising (2007). He calculates within a regression model encompassing data from 800 interest groups, that the probability to have weekly contact with the European Commission is 50 % higher if an interest group has a budget of 7.5 million euro compared to an interest group without such a budget. Secondly, with environmental issues, especially pollution control and alternative technologies, there is a strong information asymmetry between producers' lobbyists and environmental lobbyists.

Thirdly, Oates and Portney (2003) mention that environmental interest group's object to market-based instruments in environmental policy on philosophical grounds. In their line of thinking, permits and environmental taxes are interpreted as "rights to pollute" and are therefore immoral. Stavins et al. (1983) add that environmental interest groups furthermore argue that the possible damages from pollution are difficult to quantify and to monetize, which prevents the calculation of an accurate tax rate.

Fourthly, as Becker (1983) famously described in his "Theory of Competition Among Pressure Groups for Political Influence", group size matters: the smaller the group the more effectively it can lobby, which is why business lobbying tends to be more effective than lobbying for consumers.³⁷ Environmental groups are relatively weak due to their large group size and their poor financial backing.

We see that lobbyists of industrial and business interest groups are relatively better equipped to influence policy making from an early stage on. The specific information and expertise of lobbyists is a crucial factor in policy-making which strengthens the relationship between administrators and lobbyists. On the other hand environmental lobbyists, suffer from group size

³⁷ See also Brandt and Svendsen (2002), Markussen et al. (1998) and Svendsen (2002).

and fewer financial resources which in reality can even result in a situation in which the lobbyists are paid by the very organization they lobby.

Gullberg (2008) furthermore shows that lobbying behavior in the European Union significantly differs between traditional and green interest groups. Traditional interest groups lobby bureaucrats (in the European context, the European Commission) while green interest groups lobby the European Parliament. From this we argue that traditional interest groups are more involved in early stages of policy making than green interest groups and may therefore better influence the evolution of a policy. Taking the EU-ETS as example, Markussen and Svendsen (2005) analyzed whether the final design of the EU-ETS can be explained by potential industry winners or losers involved in the early stages of the policy making process. Their answer is ambiguous because on the one hand the industries' main objective to install a voluntary system was not realized. But on the other hand, lobbying led to a policy design that benefited industry more than any other policy design that could have been realized.

3.3.2 Japanese Interest Groups

3.3.2.1 Environmental Organizations in Japan

Major environmental organizations in Japanese climate politics are Kiko Network, World Wide Fund for Nature (WWF), Japan Center for a Sustainable Environment and Society (JACSES) and Friends of the Earth Japan (FoEJ). The interests of these organizations are largely homogenous, welcoming ambitious climate policies (Kiko Network 2008).³⁸ In order to advance towards a Low Carbon Society and to contribute to reaching the global 2°C target, they demand ambitious reductions of greenhouse gases.³⁹ The reductions are to be achieved by a climate protection act, containing a verifiable roadmap for annual emission reductions. Hence, as Public Choice predicts, green groups favor ambitious targets and policies.

At the policy instrument level, Japan's environmental organizations support a domestic greenhouse gas emissions trading system (GHG ETS), embedded in a policy mix similar to the one used in EU countries such as Germany (Adachi 2009, Hirata 2009, Yoshida 2009). Hence, with respect to instrument preferences, Public Choice appears to underestimate green groups' acceptance of markets for environmental protection.⁴⁰ However, Japanese environmental organizations consider a domestic GHG ETS to be advantageous, first and foremost, because

³⁸ This homogeneity is confirmed by interview data such as Hirata (2009), Yoshida (2009), Yamagishi (2009).

³⁹ Concrete reduction demands are 6% by 2008-2012 according to Japan's Kyoto Protocol target, 30% by 2020, and 80% by 2050 with a 1990 base year

⁴⁰ This result is supported by other studies on the implementation of market-based instruments in Germany and the USA. See Rudolph 2005, 2009 and Reiche/Krebs 1999.

it represents a mandatory instrument, which could displace voluntary approaches favored by Japanese industries: „We want market-based instruments not because they’re market-based, but because they’re mandatory“ (Yamagishi 2009). Mandatory instruments are considered indispensable for reaching Japan’s short-, mid- and long-term climate protection targets; whereas the current policy mix seems to be insufficient. Furthermore, emissions trading establishes absolute volume limits to emissions, hence guaranteeing real reductions and the compliance with climate protection targets: „We like the cap“ (Yamagishi 2010). Also, cost minimization is considered advantageous, because resources are also needed for other important societal purposes. Ultimately, emission trading introduces permanent incentives to innovate, reveals the actual costs of natural resource use, and the auctioning of allowances would establish the strong polluter pays principle. The main reason for this new openness towards markets of Japanese and also environmental organizations all over the world is an intense learning process during the Kyoto negotiations and the follow-up process, when theoretical merits have been laid out in detail, positive experiences – e.g. in US air pollution control – have been published, and economic thinking has spread via environmental economists and open-minded environmentalists (Rudolph 2005: 361, Hahn 2000). This process seems to have been able to overcome the philosophically-grounded skepticism of green groups towards emission markets. In terms of political power, even though, according to Olson (1965), the homogeneity of interests increases the chances of interests to organize, Japanese environmental organizations’ influence is very low (Schröder 2003: 106ff, Imura 2005: 80ff).⁴¹ First, Japanese environmental organizations lack members (Hirata 2009, Yoshida 2009, Yamagishi 2009, Adachi 2010).⁴² In 2009, membership in Japanese climate protection organizations accounted for 21,000 individual and 450 institutions. Small membership numbers lower the capacity to create significant political pressure, because environmental organizations cannot claim to represent relevant parts of the electorate, thus producing Scale Economies in the Production of Pressure (Endres/Finus 1996: 52f, Becker 1983), or to give orientation to voters, choosing ideologies (Downs 1957) instead of detailed political programs (Morishima 2009). Low membership numbers can be attributed to incentives to free-ride (Olson 1965) but also to the lack of political participation culture in Japan.

Supporting Public Choices’ argument, the budget of Japanese climate protection organizations is also small, adding up to not more than 10 million Euros (Adachi 2009, Hirata 2009, Yo-

⁴¹ Interview data by Ikkatai (2009) and Park (2009) confirms this notion.

⁴² In international comparison (Schreurs 2002: 211) environmental organizations in Japan/Germany had the following membership numbers in 2000: Greenpeace 5.000/510.000, FoE 380/340.000.

shida 2009, Yamagishi 2010).⁴³ Besides low membership numbers, a culture-based low willingness-to-donate and the lack of tax incentives to donate limit the budgets of Japanese environmental organizations. Insufficient financial resources, in turn, restrict the capacity to organize campaigns, pay for external expertise, and hire qualified personnel. Hence, staff numbers of Japanese climate protection organizations are rather small, especially if compared to industry groups. 70 full-time and 15 part-time employees work for Japanese environmental organizations, but only 10 of them are entirely occupied with climate change issues (Adachi 2009, Hirata 2009, Yamagishi 2009, Yoshida 2009).⁴⁴ In addition, the majority of staff members do not have an academic training background, because Japanese environmental organizations are not capable of paying graduates adequate salaries; also work experiences at environmental groups are not considered career boosters. As a consequence, lobbying activities as well as participation in governmental hearings and commissions are limited due to a lack of well-informed staff. Also, for this reason, Japanese environmental organizations are themselves rather seldom capable of bringing forward elaborated policy proposals.

Concerning access to policy making processes, Japanese environmental organization are not accepted to be on a par with political decision makers in the parliament or ministries, because they are seen as anti-society protest movements with a low level of expertise, and even environmentally minded researchers hesitate to cooperate with environmental organizations in Japan (Adachi 2009, Ikkatai 2009). Informal meetings with politicians or public servants are rare, and official ways to voice opinions and influence law-making are limited. Shingikai, the traditional Japanese advisory commissions that are mainly set-up by ministries, in many cases work without participation of representatives from environmental organizations. But even if environmental organizations' staff is invited, due to capacity limits, they are not capable of participating on a regular basis.

Ultimately, building networks of climate policy proponents with other likeminded actors is a heavy task for Japanese environmental organizations (Hirata 2009, Yamagishi 2009, Yoshida 2009), as there is a general distrust in protest movements motives, expertise, and capabilities especially in the politico-administrative system. Hence, even staffers from environmental ministries or green parliamentarians are not willing to cooperate with environmental organizations, in turn hindering mutual understanding and concerted action. However, even willingness to cooperate provided, there is a lack of potential partners for cooperation, because a

⁴³ In international comparison the budget of e.g. Greenpeace Japan/Germany in 2000 was 1.5 Million US\$/32 Million US\$ (Schreurs 2002: 213).

⁴⁴ In international comparison staff numbers of major environmental organizations in Japan/Germany in 2000 were: WWF 30/100, FoE 8/30 (Schreurs 2002: 217).

genuine green party or independent, ecologically minded research institutes are non-existent and green companies fear the loss of reputation in the business community if they openly side with environmentalists: „No company openly joins sides with NGOs“ (Hirata 2009).

Summing up, Japanese environmental organizations support ambitious market-based climate policies including a domestic GHG ETS, which Public Choice only partially expected. The philosophically grounded skepticism of the past seems to have been overcome by an intense learning process. Environmental organizations' political influence still is, in line with Public Choice arguments, low.⁴⁵ However, again, exogenous factors such as the political culture, the existence of policy networks, the level of economic knowledge, and the state of problem solutions are important for political actors' interests and influence. External shocks, such as the Fukushima nuclear melt-down are, e.g., capable of at least massively increasing the participation in protest movements (Naß 2011), while structural changes still need along time to unfold.

3.3.2.2 Industry Groups in Japan

Nippon Keidanren is the main industry actor in Japanese climate policy. In addition, Japanese steel companies such as Nippon Steel – representing energy intensive industries – and Japanese power companies such as Tokyo Electric Power Company (TEPCO) play a major role.⁴⁶

Climate policy interests of Japanese industries are quite homogenous, which, according to Olson (1965) adds to their influence. Ambitious market-based climate policies are, as expected by Public Choice, seen with utmost skepticism (Imura 2005: 74ff; Schröder 2003: 100ff).⁴⁷ While basically climate policy is deemed necessary; already the Kyoto targets are judged to be unfair, due to Japan's world leadership in energy efficiency. Nevertheless, against the background of the Japanese code of honor, the bushido (Nitobe/Suchi 1998), and the fear of losing reputation, industry sticks to its promise given in the Voluntary Action Plan: „We would never give up our target“ (Takahashi/Nishimura 2009). As a return service, Japanese industry expects the government to stick to its own promise not to implement additional measures as long as industry's targets are met. However, reductions beyond the Voluntary

⁴⁵ Compare here Kollmann and Schneider (2010), Kirchgässner and Schneider (2003).

⁴⁶ Arguments in favor of ambitious climate policies and GHG ETS are only brought forward by individual company leaders (e.g. Ricoh, Cannon) from Keizai Doyukai, the main representative of corporate leaders, and the financial sector (Funatsu 2009, Imura/Takeuchi 2009, Otsuka 2009, Park 2009)), hoping for competitive advantages and new markets. While the alliance of climate policy opponents in Japanese industry is extremely potent, pro-active forces in the business community only have a faint voice (Adachi 2009, Imura/Takeuchi 2009, Otsuka 2009). Only representatives of less important economic sectors raised their voices. Still, even these proponents would not openly cooperate with environmentalists, because of their traditional role as a part of the Japanese business sector and social pressure from other companies including Keidanren.

⁴⁷ This view is supported by position papers such as TEPCO 2010 and Keidanren 2008 2010 as well as interview data by Hasegawa 2009; Yamada et al. 2009.

Action Plan commitments are declined, because they would increase production costs and lead to competitive disadvantages on the world market. For a Post-2012-regime, Japanese industry demands fair targets and the participation of all major emitting countries including China and the USA. Bottom-up intensity targets for specific industries branches based on realistic technology options are considered to be better than country-based emissions caps.

On the policy instrument level, again, Japanese industry prefers voluntary agreements as laid out in its Voluntary Action Plan; additional binding measures, however, are strictly opposed (Hasegawa 2009, Takahashi/Nishimura 2009, Yamada et. al. 2009). The Voluntary Action Plan is considered to be successful, targets are judged to be met, and the achievements are seen as a major contribution to Japan's leading position in energy efficiency. Binding instruments, thus, are deemed dispensable, because industry considers voluntarily given promises to reduce emissions to the target levels as binding; non-compliance would mean a loss of face. At the most, the time-tested combination of technology-oriented regulatory standards and subsidies would be accepted as a supplement to the Voluntary Action Plan. A national greenhouse gas emissions trading system (GHG ETS), on the other hand, is, as Public Choice predicted, strictly opposed (Hasegawa 2009, Morotomi 2009, Otsuka 2009). It is argued that GHG ETS would only increase costs of production, lead to competitive disadvantages, and reduce liquidity needed for investments into efficiency and abatement technology. Leakage of emissions and jobs would be the consequence. In addition, Japanese industry claims to have valuable experiences with „Administrative Guidance“ and cooperation with regulating institutions, while emissions trading is thought to induces unpredictable price fluctuations and speculation: the „money game“ (Funatsu 2009, Morishima 2009): „Government is better than markets“ (Yamada et. al. 2009). Also, industry fears that in the case of a domestic GHG ETS important political responsibilities, e.g. for energy policy, are to be transferred from the economics ministry to the environment ministry, the latter of which is considered less reliable, over-idealistic, and outright hostile towards industry. In addition, from industry's point of view, GHG ETS incorporates the planned-economy element of fixing an emissions cap, which, as a consequence, would prohibit economic growth. Ultimately, it is claimed that the initial allocation cannot be done in a fair way: While auctioning unjustifiably burdens industry, free-of-charge schemes inevitably induce unfair initial allocation outcomes due to government's involvement; this would also be true for the reimbursement of auction revenues. The only elements of GHG ETS worth considering is, according to Japanese industry, are the project-based Kyoto mechanisms, because they enable Japanese companies with high marginal abatement costs to reduce emissions in countries with low costs, thus fostering exports.

The political influence of traditional industries is decisive; together with the economics ministry, industry is the most important political player (Imura 2005: 74ff, Schröder 2003: 100ff).⁴⁸ Keidanren bundles the interests of almost all Japanese companies in the industry sector into a homogenous set of positions (Takahashi/Nishimura 2009, Hasegawa 2009, Yamada et. al. 2009). Homogeneity is created and free-rider incentives are overcome by strong social ties, loyalty, and the traditional Japanese group-orientation (Imura 2005: 50, Lokowandt 2001: 71f), but also by the main emitters' promise to take over the major part of the reductions in exchange for solidarity on climate policy issue (Morotomi 2009). As a consequence, a tight industry alliance against ambitious market-based climate policy emerged: „It is hard to split Keidanren“ (Hirata 2009). Political strength is added to this coalition by the support of labor unions', which fear job-loss due to stringent climate policies (Asaoka 2009).

Access to the decision-making arena is granted first and foremost by the close cooperation of industry with the economics ministry and the long-time ruling Liberal-Democrats within the “Iron Triangle” (Takahashi/Nishimura 2009). Since World War II and against the background of Japan's traditional consensus orientation these actors had jointly designed an industrial policy that led to the economic success of the Japan Inc. (Bosse 1997). Hence, most advisory councils are lined with industry representatives, enabling them to directly influence the preparation of policy drafts and the like. In exchange, companies offer highly rewarding job opportunities to former public servants, the so-called practice of amakudari.

The “Iron Triangle” also established tightly knit personal networks amongst the actors involved, all being basically opposed to ambitious market-based climate policies (Asaoka 2009, Hasegawa 2009, Imura/Takeuchi 2009). Hence, Keidanren disposes of close relations with Liberal-Democrat parliamentarians and economics ministry's officials. In addition, Keidanren and its members finance their own research institutes – such as the Central Research Institute of Electric Power Industry (CRIEPI) – and have access to expertise of economics ministry's research institutions (Sugiyama 2009).

Keidanren's political power is, just as Public Choice predicts, further enhanced by its financial resources, which, considering its 1,662 company members including market leaders such as Nippon Steel and TEPCO, are supposed to be huge in comparison with environmental organizations' budgets. The same is true for staff numbers: Keidanren alone employs 20 people in different departments working on climate policy issues let alone individual companies'

⁴⁸ Interview data by Morotomi (2009), Sugiyama (2009), Imura/Takeuchi (2009) supports this view.

climate policy departments (Hasegawa 2009). Generous budgets and large staff numbers allow for intensive lobbying and costly campaign activities.

As opposed to environmental organizations, Keidanren also disposes of significant market power. First, leaving industry with an information advantage Public Choice already expected, industry can provide decision-makers with exclusive information on internal cost structures of companies and technology potentials, which are necessary for implementing climate policies, e.g. for designing free-of-charge initial allocation schemes in GHG ETS (Adachi 2009). Second, industry has market power over jobs. In particular the energy intensive industries and the power sector have been responsible for creating jobs in the aftermaths of World War II, which now enables them to threaten decision-makers with moving jobs abroad in case of stringent climate policies (Hasegawa 2009, Yamada et. al. 2009).

Summing up, Japanese industries are almost unanimously against ambitious market-based climate policies. They almost exert veto power in the decision-making on climate policy.⁴⁹ While Public Choice again is capable of giving a fairly good estimation of political actors' behavior, a careful case study provides a richer picture of determinants of political actors' interests and influence, which in turn can be used to enrich Public Choice's argumentation. Also, exogenous conditions such as the Japanese code of honor or informal political institutions such as the "Iron Triangle" significantly determine actors' interests and influence. In the latter case, however, there are early indications that the "Iron Triangle" may suffer a serious throwback from the publicity on the entanglement of TEPCO and the government in the operation and control of nuclear power plants after the Fukushima incident (Keuchel 2011).

3.4 Bureaucracy

Bureaucracies necessarily play an important role in environmental policy making in modern societies that are characterized by a sophisticated division of labor.

3.4.1 The Public Choice Perspective on Bureaucracies' Behavior

According to Niskanen's famous model of bureaucracy (Niskanen 1971), the head of any public administration unit seeks to maximize his unit's budget, increase the number of his employees, and hence increase his power and importance.⁵⁰ In contrast to politicians bureaucrats are not bound by re-election constraints. This holds for any administration authority

⁴⁹ Compare again Kollmann and Schneider (2010) and Kirchgässner and Schneider, who reach using the Public Choice analysis the same result.

⁵⁰ See Chang and Trunbull (2002), who provide empirical support for this notion.

whether or not it is engaged in environmental policy, the result of budget-maximizing behavior is that environmental administrations are highly motivated to implement environmental policy measures which require the most administrative controls as well as exhibiting the high costs. We assume that most members of ‘green’ public authorities identify themselves with the goals of their authority and are highly motivated. But being motivated need not necessarily lead to favoring cost-efficient policy making. Especially with environmental policy that is largely tied to incentives that need to be given to the regulated party, the inefficiency aspect of command-and-control mechanisms also comes from the simple fact that administrators are not there to formulate or provide incentives or to encourage and reward the regulated ones, not to speak of any innovation beyond compliance with given requirements, as Rondinelli and Berry (2000) point out.

When it comes to the question whether public administrations are in favor of market-based instruments using incentive orientated policy instruments and assuming budget-maximizing behavior, several factors need to be considered in order to explain why they favor command and control measures: firstly, command-and-control mechanisms exhibit high costs, since monitoring them is labor-intensive; secondly, with command-and-control mechanisms the administration has an information advantage that mainly derives from expert knowledge within the authority compared to the government; thirdly, the administration simply knows what to do, which may not be the case with a new instrument; and fourthly, the public administration is needed for command-and-control mechanisms, but may be superfluous if, say, a command-and-control mechanism it is replaced by an environmental tax, or this may at least require a great degree of flexibility within the authority.⁵¹

3.4.2 The Public Administration in Japan

In addition to Public Choices arguments on the decisive role of bureaucracies, the public administration in Japan plays an even more important role than in other countries, due to the traditional way of policy making in Japan (Schröder 2003: Kap 3.1.3).⁵² To a large extent it is responsible not only for implementing but also for preparing and drafting policies. The Japanese Diet often only officially legitimizes draft laws elaborated by the bureaucracy, because, as Public Choice predicts, parliamentarians suffer from information disadvantages. For the purpose of program development and implementation, the Japan’s public administration is supplied with significant financial and personnel resources. Collecting, selecting and distrib-

⁵¹ See Schneider and Volkert (1999) and Stavins (2003b) for a discussion.

⁵² Interview data such as Ikkatai (2009), Niizawa (2009) support this point.

uting information are major tasks of officials. For this purpose ministries command over several research institutes, which are directly tied to ministries and provide them with the necessary expertise: „Government officials are Japan’s original think tanks“ (Morishima 2009).

Ministry officials’ interests are strongly influenced by their academic training and the specific institutions and departments they are working at (Imura/Takeuchi 2009, Morishima 2009). Civil servants are almost exclusively trained at the University of Tokyo, a former imperial institution, which was established for the sole purpose of training public officials. Hence, officials very often do not have any other job experiences, allowing their preferences to be immediately determined by their administration-oriented education. After leaving the university and being picked by ministries, due to traditional group-orientation in the Japanese society, officials show utmost loyalty to the goals of their respective ministries. Thus, Japanese civil servants are „mission driven“ (Ikkatai 2009) not in an intrinsic sense but in the sense of adhering to the mission of the ministry they are employed at. The traditional strict separation of ministries in the Japanese political system then leads to egoisms and competition between ministries or even departments (Lokowandt 2001: 71f), in climate policy e.g. between the Ministry of the Environment (MoE) and the Ministry of Economy, Trade, and Industry (METI). Hence, different from our theoretical analysis, we here differentiate between the economic and the environmental affairs ministries of Japan.

3.4.2.1 The Japanese Ministry of the Environment

Already at the Kyoto negotiations, the Ministry of the Environment (MoE) favored ambitious reduction targets of up to -10% (Ikkatai 2009, Kawamura/Nishimura 2009).⁵³ Recently, the environmental ministry demanded a mid-term target of -15% by 2020 and -80% by 2050 (base 1990). Nevertheless, the ministry wants Japan to be treated fairly in a new global regime, incorporating all major emitting countries. By being pro-active, the MoE tries to establish itself as the main authority in climate policy, one of the most important future political issues, intending to take over responsibilities from the economics ministry e.g. in energy policy, thus increasing its power and budget (Hasegawa 2009, Funatsu 2009). This in mind, the MoE indeed, as Public Choice indicated, supports ambitious climate policies.

On the policy instrument level, however, the MoE has been engaged in promoting greenhouse gas emissions trading systems since the early 2000s (Ikkatai 2009, Imura/Takeuchi 2009, Kawamura/Nishimura 2009), which would contradict Public Choice’s predictions. However,

⁵³ Official MoE publications such as support this argument (MoE 2009d).

one major reason for the MoE supporting market-based instruments was again to take over control over the discussion on market-based climate policies in the competitive relation with the economics ministry, a motivation that would fit bureaucrats' wish to enlarge their budget. In the years 2008 and 2009, a national GHG ETS was even declared the priority topic of the MoE, because the ministry understood former Prime Minister Fukuda's promise at the G8 summits at Heiligendamm and Hokkaido as a direct order to push for an ambitious Japanese GHG ETS (Fukuda 2008a, b). Also, the MoE appreciates the EU climate strategy including the EU GHG ETS as a success story and observes the global spreading of emissions trading especially to the USA and neighboring countries such as South Korea, New Zealand, and Australia. Ultimately, the MoE considers the established climate policy mix in Japan as a failure. It argues that the ambitious Japanese climate policy targets can only be reached by a stringent national GHG ETS with an absolute volume top-down cap, which would mean that their overall goal of protecting the environment could only be reached by a carbon market.

Also, the MoE has recently been enabled to appreciate the advantages of emissions trading, first because economic knowledge within the ministry has increased, e.g. due to an influx of economic contents at Tokyo University's curriculum, and second, because public officials had learned about the working mode and the effects of emissions trading during the Kyoto negotiations and the follow-up process by close contacts with the USA and the EU (Ikkatai 2009, Morotomi 2009).⁵⁴ This is especially true for the Office of Market Mechanisms, which is in charge of the respective issues (Imura/Takeuchi 2009, Kawamura/Nishimura 2009, Otsuka 2009). Within the Office, GHG ETS is considered the main instrument of future climate policy, because, like no other, it guarantees the compliance with absolute volume targets via the cap. There is even hope, that GHG ETS can displace voluntary instruments. In addition, GHG ETS can be linked internationally and in this way increase efficiency and overcome the stalemate in global climate policy. Ultimately, by administering the Japan Voluntary Emission Trading Scheme (JVETS), Office staff has acquired specific skills in handling GHG ETS, which could be utilized for an ambitious domestic system. Thus, Public Choice's argument of bureaucrats preferring well-known and well-established instruments would still hold, because in the last decade major parts of the bureaucracy has become acquainted with emission trading schemes, and bureaucrats have been able to acquire specific knowledge on market-based instruments, which will not at all become superfluous in the case of a domestic carbon market

⁵⁴ Civil servants in Japan are selected based on ministry-specific quotas (Kawamura/Nishimura 2009). In the MoE 15 to 20 new employees are hired each year on the basis of a quota for lawyers, economists, engineers, and natural scientists. While in the past 3 to 4 positions were given to lawyers and economists, now 6 to 9 are newly employed, whereat economists are preferred, thus steadily increasing the share of economists in the ministry.

being implemented. Against the background of these interests, in early 2010 the Office – commissioned by the environmental ministry – presented a draft version of a domestic GHG ETS, which excelled in a top-down absolute volume cap and binding participation, thus being much more ambitious than the economics ministry’s of the same time (MoE 2010c).

This said, even though the MoE as a whole and the Office are strongly in favor of GHG ETS, there are, as Public Choice initially suggested, officials in more traditional departments who favor the time-tested policy mix of command-and-control, subsidies, and voluntary action (Ichii 2009, Kawamura/Nishimura 2009). The major reason for this is the fact that, still, the majority of MoE’s officials are engineers, natural scientists, and, to a smaller extent, lawyers, lacking training in economics and appreciating the success of the respective policy mix in air and water pollution control in the 1970s and 1980s. However, the idea of a cap to emissions is widely understood and appreciated even by non-economist, thus leaving even traditional MoE officials in a wait-and-see-position rather than in direct opposition to emissions trading.

In addition to the respective offices within the MoE, the ministry also operates several advisory councils on climate policy issues, in order to comply with the consensus-orientation typical for policy-making in Japan (Imura 2005: 67, GoJ 2006: 33).⁵⁵ The supreme commission is the Central Environment Council, where emissions trading has been discussed since the early 2000s. Since 2005, a subcommittee is commissioned to elaborate and evaluate alternative design options for a domestic GHG ETS. The subcommittee is mainly composed of environmentally-minded researchers and industry representatives; environmental organizations, on the other hand, are excluded due to the ministry’s and industry’s distrust in their capabilities, importance, and willingness to cooperate. In 2010 the subcommittee brought forward a report, discussing key elements of a domestic GHG ETS, but lacking a clear-cut recommendation for a particular design and leaving many crucial issues unsolved (MoE 2010d).

The political power of the MoE is small, despite the general importance of the public administration underlined by Public Choice and even strengthened in Japan, especially if compared with the economics ministry (Imura 2005: 56ff): „[MoE] is positioned at the lower end of Japan’s unofficial ministerial hierarchy“ (Schröder 2003: 88). Thus, our differentiation of ministries appears appropriate. The reasons for MoE’s political weakness are the following: First, the environmental ministry’s responsibilities do not cover energy policy, which still resides with the economics ministry (Adachi 2009, Funatsu 2009). Second, financial and per-

⁵⁵ See also interview data such as Otsuka (2009), Kawamura/Nishimura (2009), Morotomi (2009).

sonnel resources are comparatively small (Asaoka 2009, Morotomi 2009).⁵⁶ Third, the MoE, even if it commands over its own research institutes such as the National Institute for Environmental Studies (NIES) and the Institute for Global Environmental Strategies (IGES), does not offer exclusive information such as technology potentials or company cost offered by the economics ministry (Adachi 2009). Fourth, the MoE moved from agency to ministry status only in 2001, making it one of the youngest ministries in Japan (Imura/Takeuchi 2009, Kawamura/Nishimura 2009). As a consequence, the environmental ministry lacks valuable networks and an institutionalized alliance such as the “Iron Triangle” (Ikkatai 2009, Kawamura/Nishimura 2009). Environmental organizations are considered worthless to work with, a green party does not exist, green wings of established parties are politically weak, and independent green research institutes do not exist (Park 2009).

Summing up, while the MoE and its sub-bodies to a large extent support ambitious climate policies including GHG ETS, it lacks political power to carry its point. In this case, budget and target orientation of bureaucrats emphasized by Public Choice has led to interests favoring market-based instruments and environmental ministry’s power is strictly limited by its cabinet counterpart, the ministry of economic affairs.⁵⁷ In addition, again exogenous conditions such as staff members’ educational background and the ministerial responsibilities are important determinants of interests and influence.

4.3.2 Ministry of Economy, Trade, and Industry

Within the Ministry of Economy, Trade, and Industry (METI) environmental issues are dealt with in the Environmental Policy Division, which also determines the economics ministry’s position on climate policies (Shimizu/Takahashi 2009). Basically, the METI supports climate policies in the cases of win-win- or no-regret-solutions for industry such as increasing energy efficiency or exporting efficiency technology; cost-inducing ambitious market-based climate policy, however, are seen with utmost skepticism (Imura/Takeuchi 2009, Morotomi 2009, Shimizu/Takahashi 2009). Hence, while the Kyoto-target is officially tolerated due to the METI being a part of the Japanese government, which agreed on the Protocol and now – ac-

⁵⁶ In 2005 the MoE only commanded over 9% of the budget for implementing the Outline for Promotion to Prevent Global Warming, thus having the smallest budget amongst the main ministries dealing with climate change (GoJ 2006: 37). In addition, budget cuts (-32% against 2004) were the biggest amongst all ministries and even bigger as the average budget cut of the total climate policy budget. In terms of staff numbers, the MoE personnel doubled when moving from agency to ministry status 2001, but still, in 2006 the MoE only had 1,185 employees (including local branches), thus being one of the smallest ministries in Japan (Ikkatai 2009). The Office of Market Mechanisms employed 11 people working on ETS-related issues in 2009 (Kawamura/Nishimura 2009).

⁵⁷ This result is also supported by other studies on the political implementation of market-based instruments in other countries. See for Germany and the USA e.g. Reiche/Krebs 1999 and Rudolph 2005, 2009.

According to the Japanese code of honor – has to fulfill its promise, economics ministry officials still consider the target to be unfair for the Japanese economy. Concerning future goals, only a stabilization of emissions on the 1990 level by 2020 appears feasible to the METI staff. Furthermore they claim that rigid absolute volume targets by country are not capable of balancing the important issues of economic growth and climate protection. A forerunner position of Japan would result in competitive disadvantages and carbon leakage to non-Kyoto countries. Internally, the METI also fears the shift of responsibilities for energy policies to the environmental ministry in case of ambitious market-based climate policies (Hasegawa 2009, Funatsu 2009). Altogether, Japanese industry considers the economics ministry's position to be protecting its interests: „METI protects industry“ (Hasegawa 2009).

On the policy instrument level, a domestic GHG ETS is opposed by the METI mainly due to its potential to increase production costs by charging full emission costs to polluters (Shimizu/Takahashi 2009). Also, absolute volume caps are feared as being a limit to growth. The Voluntary Action Plan, on the other hand, is considered to be successful, and as long as industry complies with its targets, there seems to be no need to implement additional measures. GHG ETS is judged to be a good idea in general, but in Japan – with its specific regulation history and economic and political structure – other alternatives are thought to be equally reasonable. Again, there is a fear that GHG ETS would shift responsibilities for energy policy from the METI to the environmental ministry (Adachi 2009). Against this background, the economics ministry did not support the environmental ministry's Japan Voluntary Emission Trading Scheme (JVETS) of 2005. The Integrated Domestic Market of Emissions Trading (IDMET), on the other hand, was supported by the economics ministry due to the political pressure of Prime Minister Fukuda's announcement at the G8 summits of Heiligendamm and Hokkaido. However, support was only granted, because many of the METI's demands such as voluntary participation, intensity targets, and generous acceptance of offsets and borrowing were accommodated, thus bringing the Integrated Domestic Market of Emissions Trading (IDMET) close to the design of the Voluntary Action Plan (Park 2009, Shimizu/Takahashi 2009, Yamagishi 2009). In early 2010, again, the METI published a proposal for a climate policy mix, which only incorporated GHG ETS as a minor measure and with a design very close to the Voluntary Action Plan (METI 2010).

Just as the environmental ministry, the METI operates several advisory councils working on environmental issues such as the Advisory Council for Natural Resources and Energy (GoJ 2006: 33). GHG ETS is mainly dealt with at the Policy Mix Subcommittee (Morishima 2009, Otsuka 2009). Again, this subcommittee is dominated by industry representatives and re-

searchers from METI-affiliated institutes. Representatives from environmental organizations were excluded in 2010 after a period of reluctant participation; environmental economists are not accepted, because they are considered environmentalists by METI officials and industry people (Morotomi 2009, Morishima 2009). The Subcommittee's report of 2010 was the major basis of the economics ministry's policy mix proposal of the same year (METI 2010).

The political power of the METI is big; it represents the second most important climate policy player besides Keidanren (Morotomi 2009, Otsuka 2009, Sugiyama 2009). First and foremost, the economics ministry has the important responsibility for energy policy (Hasegawa 2009). Second, the METI is an integral part of the "Iron Triangle", supplying it with valuable networks and exclusive, industry-internal information (Imura/Takeuchi 2009). Besides its own research institutes such as the Research Institute of Innovative Technology for the Earth (RITE), the METI closely cooperates with industry-affiliated research institutes such as CRIPIE, which alone obtains 20-30% of its budget from the economics ministry (Sugiyama 2009). In this setting, the METI has been a key factor in Japan's economic success after World War II, helping to build the Japan Inc. by „Administrative Guidance“ and close cooperation with industry. Third, the METI is by far the biggest ministry in Japan, commanding over huge financial and staff resources.⁵⁸

Summing up, the METI is highly skeptical about ambitious, cost-inducing market-based climate policies, its position very much corresponding with industry's interests. Also, its influence on climate policy is considerably bigger than environmental ministries power. The Public Choice literature on environmental policy has so far not taken into account the behavior of economics ministries, which in practice appear to play a decisive role and hence should be included in future Public Choice analysis on environmental policy. Also, again, exogenous conditions such as ministry affiliation of staff members and traditional regulatory responsibilities play a decisive role, in preventing effective environmental policy measures.

4 Summary and Conclusions

Japan is one of the biggest emitters of greenhouse gases and still far away from complying with its Kyoto target. Carbon markets have been used in Japan policy since 2005, but the experiences have been disappointing. Major emission reductions have not been achieved and a functioning carbon market does not exist. In order to explain these deficiencies we have used

⁵⁸ The METI's budget in the Outline for Promotion to Prevent Global Warming was a third of the total budget and three times the size of the MoE's resources; also, there were no budget cuts for the METI (GoJ 2006: 37). METI employed 8,528 officials in 2006 (including all local branches), eight times as many as the MoE (Ikkatai 2009). 30 people alone are dealing with market-based climate policy issues in 2009 (Shimizu/Takahashi 2009).

the Public Choice approach, analyzing the behavior of voters, politicians, interest groups, and the public administration in order to find out why so little has been accomplished.

In the Public Choice analysis of voters there are three main issues that can explain why voters do not explicitly vote for the environment: firstly, the provision of the public good 'environment' allows free-rider behavior, secondly, the time delay between costs and benefits of environmental policies (especially CO₂ emission reduction) is difficult to explain and non-zero social discount rates diminish the future's importance and thirdly, other more urgent issues, like unemployment or income growth, have a higher priority than less tangible environmental issues. For the politicians we find that after arguing that a selfish politician may not be intrinsically motivated to promote ecological policies using market-based instruments, but reacts in line with the other actors' interests, the question arises whether such a policy will be carried out efficiently. From our discussion so far, it follows that the design of a specific policy is strongly influenced by interest groups. Turning to the interest groups we realize, that lobbyists of industrial and business interest groups are relatively better equipped to influence policy making from an early stage on. The specific information and expertise of lobbyists is a crucial factor in policy-making which strengthens the relationship between administrators and lobbyists. On the other hand environmental lobbyists, suffer from group size and fewer financial resources which in reality can even result in a situation in which the lobbyists are paid by the very organization they lobby. The public administration is not in favor of an effective environmental policy using incentive orientated instruments due to the following three reasons: firstly, command-and-control mechanisms exhibit high costs, since monitoring them is labor-intensive; secondly, with command-and-control mechanisms the administration has an information advantage that mainly derives from expert knowledge within the authority compared to the government; thirdly, the administration simply knows what to do, which may not be the case with a new instrument; and fourthly, the public administration is needed for command-and-control mechanisms, but may be superfluous if, say, a command-and-control mechanism is replaced by an environmental tax, or this may at least require a great degree of flexibility within the authority.

If we confront these theoretical insights with the Japanese situation we conclude the following:

- (1) While there is a general interest in the Japanese society for environmental issues and climate change, this does not result in environmentally oriented voting behavior or even activities in protest movements. However, the Fukushima melt-down is changing

this attitude significantly. There are already first indicators that point to a more active civil society: Anti-nuclear-power-protests such as the 60,000 people demonstration on September 19th, 2011 in Tokyo have united significant numbers of people across political spectrums and the distrust in the government and bureaucracies increased dramatically. However, while some researchers claim a “Generation March 11th” (Coulmas in Naß 2011) to be more politically involved, others do not believe in the new movement to overcome socio-cultural dispositions against civil protest (Okumura in Naß 2011).

- (2) Climate policy interests of Japanese politicians strongly depend on party affiliation. While the now-ruling left-wing party favors ambitious climate policies, the conservative party is more skeptical. Parliamentarians’ power, however, is small due to the traditional dominance of the bureaucracy. And despite of the left-wing party’s political victory in the last general elections, they are faced with a weakening majority in the Japanese Diet and traditionally effective networks of the conservative party with industry groups and the economics ministry.
- (3) Recent failures in making significant changes such as the removal of U.S. military forces from Okinawa, the re-empowering of parliamentarians, or the disempowerment of utilities (Blume 2010) suggest, that it will be very hard to establish a political consensus on ambitious carbon markets in Japanese politics. Regarding interest groups, environmental organizations strongly favor an ambitious market-based climate policy, but they are close to powerless due to low membership numbers, a lack in public acceptance, and negligible financial resources.
- (4) Industry groups, which to great extent are against ambitious climate policies, are extremely powerful due to their homogeneity, abundant resources, and their traditional involvement in policy making in Japan. Although participation in protest movements and distrust in industry have significantly increased after the Fukushima incident (Keuchel 2011), the traditional power balance appears to be far from experiencing a major change in the foreseeable future.
- (5) Within the public administration, which in general is the centre of political decision making in Japan, an intense struggle between the environmental and the economics ministry is taking place. While the rather small, less well-equipped, and traditionally rather insignificant environmental ministry to a large extent favors ambitious carbon markets, the most powerful economics ministry leans to industry positions and only accepts win-win- or no-regret measures in climate policy. Recently, although the now-ruling left-wing party promised to clip bureaucracies’ power (DPJ 2009) and the close

affiliation of the economics ministry with utilities such as the Fukushima plant's operating company TEPCO raised opposition in the Japanese society (Keuchel 2011), chance to overcome this situation are small due to the well-established institutional setting.

To summarize, Public Choice theory appears to provide a very good first approximation to the explanation of environmental policy-making based on rational political actors' behavior and even to predicting the outcome of such processes. Still, this paper has also shown that analyzing individual cases may provide highly valuable insights into environmental policy making in practice, which can be used to improve Public Choice argumentations. In this context, most importantly, environmental groups no longer seem to be against market-based instruments as are environmental bureaucrats. Also, the political power of environmental bureaucracies appears to be outbalanced by their cabinet counterparts in the ministries of economic affairs. In addition, the Public Choice analysis of environmental policy could greatly benefit from incorporating more thoroughly exogenous conditions and influences. While we have already included these factors on a cursory level based on early ideas by Schneider/Volkert/ (1999) and, and while there are also some recent ideas for this inclusion e.g. by Nutzinger/Rudolph (2007), further research is needed in this field.

Our final conclusion is the following: For the Japanese case, the prospects of having ambitious carbon markets in place in the near future are rather bad. The well-established power balance appears to be hard to overcome. However, especially after the Fukushima melt-down, there is still hope that the Japanese civil society might increase its influence and put enough pressure on the government and the public administration to rethink its energy and climate policy strategy and contribute to an efficient and effective market-based climate policy.

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