
Domestic Initiatives in a Global Context? Japan's Approaches to the Emissions Trading Schemes for the International Climate Change Regime

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Although in 2011 Japan finally decided not to participate in the second commitment period of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, under the principles of sustainable development and common but differentiated responsibilities, it has probed the ways in which the 'ultimate objective' of the UNFCCC will be realized in the international community. With regard to so-called 'emissions trading,' since the middle of the 2000s, Japan has continuously adopted various methods and approaches for domestic emissions trading at local and central government levels. This article analyzes Japan's recent efforts in introducing emissions trading schemes and finally refers to the Joint Crediting Mechanism, which covers the period until a future new agreement under the UNFCCC comes into effect.

Keywords

JVETS, Emissions Trading, Emissions Trading Scheme, Kyoto Protocol, UNFCCC, Joint Crediting Mechanism

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1. Introduction

As a party to both the United Nations Framework Convention on Climate Change of 1992 (“UNFCCC”)¹ and the Kyoto Protocol of 1997,² Japan has legislated domestic laws concerning climate change, in order to implement the international treaties under international law.³ These laws include:⁴ the Law Concerning the Promotion of the Measures to Cope with Global Warming;⁵ the Act on the Rational Use of Energy;⁶ the Act on Special Measures for the Promotion of New Energy Use, etc.;⁷ the Act on Special Measures for the Use of New Energy Use etc. by Electricity Business;⁸ the Act on Ensuring the Implementation of Recovery and Destruction of Fluorocarbons concerning Designated Products.⁹ Unlike some other countries, e.g., South Korea, New Zealand and Australia,¹⁰ a nation-wide scheme on ‘emissions trading’¹¹ has not

¹ United Nations Framework Convention on Climate Change, May 9, 1992, S. Treaty Doc No. 102-38, 1771 U.N.T.S. 107.

² Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, U.N. Doc FCCC/CP/1997/7/Add.1, *reprinted in* 37 I.L.M. 22 (1998). Japan decided not to participate in the second commitment period of the Kyoto Protocol (2013-20) and hence in this period it can only be eligible to transfer and acquire certified emission reductions. For details *see* Report of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol on its Eighth Session, Nov. 26 – Dec. 8, 2012, Decision 1/CMP.8, ¶ 15, at 4, U.N. Doc. FCCC/KP/CMP/2012/13/Add.1 (Feb. 28, 2013). *See* Ministry of Foreign Affairs of Japan, Japan’s Position regarding the Kyoto Protocol (Dec. 2010), *available at* http://www.mofa.go.jp/policy/environment/warm/cop/kp_pos_1012.html (last visited on Oct. 9, 2014).

³ *See, e.g.*, Yuji Iwasawa, *International Law in the Japanese Legal Order: Recent Developments*, 91 Proceedings of Annual Meeting-American Society of International Law 301-307 (Apr. 9-12, 1997).

⁴ *See e.g.* TADASHI OTSUKA, CHIKYŪ ONDANKA WO MEGURU HŌ SEISAKU [LAW AND POLICY ON GLOBAL WARMING] <available only in Japanese> 60-83 (2004).

⁵ *Chikyū ondanka taisaku no suishin ni kansuru hō* [Law Concerning the Promotion of Measures to Cope with Global Warming], Law No. 117 of 1998.

⁶ *Enerugi no shiyō ni kansuru hōritsu* [Act on the Rational Use of Energy], Law No. 49 of 1979.

⁷ *Shin enerugi riyō tou ni kansuru tokubetsu sochi hō* [Act on Special Measures for the Promotion of New Energy Use, etc.], Law No. 37 of 1997.

⁸ *Denki jigyōsha ni yoru shin enerugi tou no riyō ni kansuru tokubetsu sochi hō* [Act on Special Measures for the Use of New Energy Use etc. by Electricity Business], Law No. 62 of 2002.

⁹ *Tokutei seihin ni kakaru furonruu no kaishū oyobi hakai no zisshi no kakuho tou ni kansuru hōritsu* [Act on Ensuring the Implementation of Recovery and Destruction of Fluorocarbons Concerning Designated Products], Law No. 64 of 2001.

¹⁰ *See, e.g.*, LEGAL ASPECTS OF IMPLEMENTING THE KYOTO PROTOCOL MECHANISMS: MAKING KYOTO WORK, chs. 23-29 (D. Freestone & C. Streck eds., 2005); Hitomi Kimura, *Haishutsu Waku Torihiki wo meguru Saikin no Dōkō to Shōrai Wakugumi ni okeru Kadai* [Recent Developments of Emissions Trading and the Problems in a Future Framework], 37 KANKYŌHŌ KENKYŪ [ENVTL L. J.] <available only in Japanese> 12-18 (2012).

¹¹ *See generally* M. Schröder, *Emission Trading*, 3 MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 400-406 (R. Wolfrum ed., 2012).

been drafted.¹² Since the mid-2000s, however, local and central governments have taken various methods and approaches for emissions trading continuously.

The primary purpose of this research is to briefly introduce and discuss Japan's recent efforts and initiatives in incorporating emissions trading schemes at the domestic level. For this purpose, this paper will deal mainly with the following five topics: (A) Japan Voluntary Emission Trading Scheme; (B) Experimental Introduction of an Integrated Domestic Market for Emissions Trading; (C) Japan Verified Emission Reduction Scheme; (D) Emissions Trading Schemes by Local Governments; and (E) Joint Crediting Mechanism.

2. Japan's Emissions Trading Schemes

A. Voluntary Emission Trading Scheme of Japan (2005-2013)

The Voluntary Emission Trading Scheme of Japan ("JVETS"), launched in 2005 by the Ministry of the Environment, is the first carbon pricing and emissions trading system in Japan.¹³ This governmental project was initiated in response to the Kyoto Protocol Target Achievement Plan (Cabinet Decision of April 28, 2005). It declared:

The domestic emissions trading system is an issue that must be comprehensively studied about the wide range of discussion points includes a comparison of the domestic emissions trading system with other methods and their effects and the impact on industrial activities and the national economy.¹⁴

¹² In June 2010, unfortunately, the Bill for the Basic Act on Climate Change Countermeasures, which contained provisions for a domestic emission trading scheme of a cap and trade, was finally rejected. Article 13 of the Bill reads: "In order that the reduction of the emission of greenhouse gases be implemented steadily, the Government shall establish a domestic emission trading scheme (a scheme to set limits to the emission of greenhouse gases by emitters in a certain period, and to allow trading of emission amount with other emitters and other means for complying with the limits). The Government shall investigate legislative measures necessary for this, concurrently with the investigation on the tax for the global warming countermeasures stipulated in the next article, clause 2, and produce an agreed draft within one year after the enactment of this act as a milestone." See Ministry of the Environment Office of Market Mechanisms, Current Status of Market Mechanisms in Japan 4 (Aug. 2012), available at <http://www.env.go.jp/en/focus/docs/files/20120801-25.pdf> (last visited on Oct. 9, 2014).

¹³ See The Final Report on The Japanese Voluntary Emission Trading Scheme, available at <http://www.env.go.jp/earth/ondanka/det/jvets/gr-main.pdf> <available only in Japanese> (last visited on Oct. 9, 2014)

¹⁴ Shushō Kantei [Prime Minister of Japan and His Cabinet], *Kyoto Giteisho Mokuhyō Tassei Keikaku* [Kyoto Protocol Target Achievement Plan] 59 (Apr. 28, 2005) <available only in Japanese>, available at <http://www.kantei.go.jp/jp/singi/ondanka>. For English translation, see Kyoto Protocol Target Achievement Plan, available at http://www.kyomecha.org/document/pdf/kp_achieveplan.pdf (all last visited on Oct. 9, 2014). See generally *Kyoto Giteisho*

This JVETS is designed under the United Kingdom's Emissions Trading Scheme,¹⁵ the first domestic greenhouse gas emissions trading scheme in the world.¹⁶ Since *mandatory* emission trading schemes are likely to hamper and curtail domestic economic growth, JVETS was severely criticized by the concerned industrial sectors and the Ministry of Economy, Trade and Industry.¹⁷

JVETS was one of the most noticeable governmental attempts in the early 2000s which introduced an emission trading scheme in Japan; it was then regarded as "one feasible and credible monitoring, reporting and verification system."¹⁸ The Scheme was designed to support voluntary CO₂ reduction activities by business operators, in order to ensure that their target is achieved in a cost-effective way. It was carried out through the following measures: (1) a subsidy to facilities which contribute to CO₂ emissions reduction; (2) participants' commitments to reduce CO₂ merits for scheme participant emissions below their base year emissions; and (3) emissions trading.¹⁹ In short, under JVETS, the Ministry of the Environment provided subsidies for private participating companies²⁰ who had reduced their CO₂ emissions commitments below the base year. The Japanese Emissions Allowances were allocated to each participant that could be traded with the certified emission reductions freely in the corresponding year. Any remaining allowances and reductions could be carried over to the next operational period.²¹ If participants failed to meet their commitments,

Mokuyō Tassei Keikaku No Zenyō (Chikyu Ondanka Taisaku Suishin Honbu) [Global Warming Prevention Headquarters] et al. eds., 2005) <available only in Japanese>.

¹⁵ See, e.g., C. Dodwell, *UK Emissions Trading Scheme*, in *LEGAL ASPECTS OF IMPLEMENTING THE KYOTO PROTOCOL MECHANISMS*, *supra* note 10, at 445-459.

¹⁶ AKIHIRO AMANO, HAISHUTSU TORIHIKI [EMISSION TRADING] <available only in Japanese> 204-206 (2009).

¹⁷ HITOMI KIMURA & REAS TUERK, *EMERGING JAPANESE EMISSIONS TRADING SCHEMES AND PROSPECTS FOR LINKING 2* (Oct. 2008). See also Hitomi Kimura, *Climate Change Law and Policy in Japan*, in *CLIMATE CHANGE AND THE LAW* 588 (E. Hollo, K. Kulovesi & M. Mehling eds., 2013). [Emphasis added]

¹⁸ Shuta Mano, Jusen Asuka & Yasushi Ninomiya, *Japan Voluntary Emission Trading Scheme: Lessons for Policy*, *PROCEEDINGS OF INTERNATIONAL SYMPOSIUM ON ECOTOPIA SCIENCE 1314* (2007), available at <http://www.esi.nagoya-u.ac.jp/h/isets07/Contents/Session12/1336Mano.pdf> (last visited Oct. 9, 2014). See also TADASHI OTSUKA, *KOKUNAI HAISHUTSUWAKU TORIHIKI SEIDO TO ONDANKA TAISAKU* [DOMESTIC EMISSION TRADING SYSTEMS AND GLOBAL WARMING MEASURES] 61 (2011). <available only in Japanese>

¹⁹ Ministry of the Environment Office of Market Mechanisms, *Japan's Voluntary Emissions Trading Scheme (JVETS) 2* (Mar. 19, 2009), available at <http://www.env.go.jp/en/earth/ets/jvets090319.pdf> (last visited on Oct. 9, 2014). [Emphasis added]

²⁰ *Id.* at 6-7. JVETS participants are divided into the following industrial sectors (2005-2007): nonferrous, machine and other manufacturing (26%); food and drink (21%); office, hotel, supermarket, university, hospital, etc. (19%); textile (7%); paper and pulp (3%); chemical (13%); ceramic (9%); steel (2%) and: other (1%). *E.g.*, the companies included: Nippon Electric Glass Co., Ltd., Mitsubishi Gas Chemical Co., Inc., Nissan Shatai Co., Ltd., INAX Co., Panasonic Electric Works Gumma Co., Ltd. (2005-2007); Rengo Co., Ltd., House Foods Co., Victor Company of Japan, Ltd. (2006-2008); Mitsubishi Plastics Inc., Hitachi Seisen Ltd., Nippon Milk Community Co., Ltd. (2007-2009); and Takeda Pharmaceutical Co., Ltd., Showa Denko K.K., Isuzu Motors Ltd., Epson Imaging Devices Co. (2005-2007).

²¹ *Id.* at 5.

they were obliged to return subsidies to the government.²²

The Ministry of the Environment also observes that JVETS made a major contribution to establishing the basic infrastructure necessary for smooth operation such as emission monitoring, reporting and verification guidelines, the registry system, the emissions management system, etc.²³ This operational mechanism is similar to that of the European Union's.²⁴ JVETS was managed by the Competent Authority Committee which drafted guidelines, approved monitoring plans, produced verification reports, and evaluated verifiers' achievements.²⁵ These guidelines have served as an equivalent to EUETS monitoring and reporting guidelines.²⁶

The actual implementation of JVETS was reflected in 2009. Among 81 participants that performed emission reduction activities, 67 surpassed the reduction commitments (631,000 t-CO₂), while 14 could not achieve their stated commitments (15,000 t-CO₂).²⁷ It is also reported that 9 sold (23,000 t-CO₂), 40 banked (487,000 t-CO₂), and 23 cancelled (121,000 t-CO₂). The remaining 14 participants that failed to reach their commitments were obliged to buy emission allowances from other participants (15,000 t-CO₂).²⁸

B. Experimental Introduction of an Integrated Domestic Market for Emissions Trading

The Experimental Introduction of an Integrated Domestic Market for Emissions Trading is a large-scale governmental program which started in October 2008.²⁹ Its legal basis is the Action Plan for Achieving a Low-Carbon Society³⁰ which aims to "establish effective rules that actually lead to technology development and reduction

²² *Id.*

²³ *Id.* at 15.

²⁴ *Id.* at 10. See, e.g., C. WOLD, D. HUNTER & M. POWERS, CLIMATE CHANGE AND THE LAW 261- 268 (2009).

²⁵ P. Sopher & A. Mansell, *Japan: The World's Carbon Markets: A Case Study Guide to Emissions Trading*, at 3, available at <http://www.edf.org/climate/worlds-carbon-markets> (last visited on Oct. 9, 2014).

²⁶ *Supra* note 19, at 10.

²⁷ See Ministry of the Environment and the Ministry of Economy, Trade and Industry, Country Overview: Japan, available at http://www.env.go.jp/en/earth/ets/mkt_mech.html#01 (last visited on Oct. 9, 2014). Telephone interview with officials in the Global Environment Bureau of the Ministry of the Environment of the Government of Japan (July 9, 2014).

²⁸ *Id.*

²⁹ See Global Warming Prevention Headquarters' Decision on October 21, 2008, <available only in Japanese> available at <http://www.kantei.go.jp/jp/singi/ondanka> (last visited on Oct. 9, 2014). See generally OTSUKA, *supra* note 4, at 55-56.

³⁰ See Cabinet Decision on July 29, 2008, available at <http://www.kantei.go.jp/jp/singi/ondanka/> <available only in Japanese> (last visited on Oct. 9, 2014).

efforts and to develop a healthy market which is based on real demand and does not lend itself to money games.”³¹ This scheme allows various business entities, including major corporations and medium-scale enterprises in every sector to choose various “substantial emissions reduction” options.³² Under this mechanism, participating entities can set their own emission reduction targets and achieve them by using exceeded emission allowances gained from other participants and credits in domestic Clean Development Mechanism and the Kyoto mechanisms.³³ Creation and trade of credits may be used in the trading schemes of (1) domestic clean development mechanism credits and (2) Kyoto mechanism credits.³⁴ For the purpose of facilitating the Experimental Introduction, a Secretariat was established; it now consists of staff members from the Cabinet Secretariat, the Ministry of Economy, Trade and Industry and the Ministry of the Environment. The government hopes to furnish a possible model of emissions trading appropriate for Japanese industries focusing on manufacturing and technology.³⁵

In 2010, out of 109 participants that cleared their emission reduction targets,³⁶ 10 participants retired 2,530,000 t-CO₂ of allowances borrowed in 2009 and 105 participants banked 5,750,000 million t-CO₂ of allowance surplus.³⁷ In addition, among the 43 participants that failed to clarify their targets, five participants retired 3,650,000 t-CO₂ of allowances banked in 2009; 10 participants retired external credits; and 21 participants borrowed 21,140,000 t-CO₂ of allowances.³⁸ Also, 14 participants out of the aforementioned 43 participants and two participants that failed to retire allowances borrowed in 2008 and 2009 could not achieve their targets.³⁹

C. Japan Verified Emission Reduction Scheme

Japan’s Verified Emission Reduction (“JVER”) Scheme, launched by the Ministry of the Environment in November 2008, is an offset credit scheme, in which the amount

³¹ Ministry of the Environment, Experimental Introduction of an Integrated Domestic Market for Emissions Trading (2008), available at http://www.env.go.jp/en/earth/ets/mkt_mech.html#01 (last visited on Oct. 9, 2014).

³² *Supra* note 19, at 27.

³³ *Supra* note 31, at 1-2.

³⁴ *Id.* at 1-2. See also OTSUKA, *supra* note 4, at 55.

³⁵ *Supra* note 31, at 4.

³⁶ It amounts to 8.28 million t-CO₂.

³⁷ See Ministry of the Environment Office of Market Mechanisms, Consideration of Emissions Trading Scheme in Japan 16 (Apr. 2012). Japan reports to the UNFCCC Secretariat on the implementation of this scheme. See Government of Japan, Japan’s Fifth National Communication under the United Nations Framework Convention on Climate Change 231 (Dec. 2013), available at http://unfccc.int/resource/docs/natc/jpn_nc5.pdf (last visited on Oct. 9, 2014).

³⁸ *Id.*

³⁹ *Id.*

of greenhouse gas emissions reduction or forest sink from domestic projects are certified as offset credits.⁴⁰ Under JVER, individuals, private companies, and local governments can return funds for carbon offsetting (funds for purchasing JVER) to domestic project planners in forest management or local industries.⁴¹ According to Eisaku Toda, the scheme is “a new mechanism to promote the domestic Green New Deal program through a global warming prevention campaign, expansion of job opportunities, and economic measures by using private-sector capital.”⁴²

The Certification Committee under JVER registers projects and certifies greenhouse gas emission reduction and forest sink.⁴³ It also submits opinions to the Steering Committee and the Technical Sub-Committee.⁴⁴ The Steering Committee adopts and revises the rules of the scheme, including its methodologies. The Technical Sub-Committee is a subordinate body of the Steering Committee; it discusses newly-proposed and existing methodologies.⁴⁵ Further, the Certification Center on Climate Change of Japan, the Secretariat of the JVER Scheme supports the operation of the Committees.⁴⁶

In February 2010, 86 projects were registered in the JVER Scheme. Among them, 35 projects received certification of Offset Credit, while the total amount of certified credit is 41,502 t-CO₂.⁴⁷ Project types under the JVER Scheme include the following fuel switch from fossil fuels to woody biomass fuels for boilers; fuel switch from fossil fuels to biodiesel fuels (waste cooking oil base) used in vehicles and others; reduction of fuel consumption by improving transport efficiency and utilizing IT technology; energy efficiency improvement of air conditioning by introducing free-cooling and fresh air; and substitution of grid electricity for solar power generation.⁴⁸ In light of the relatively low number of projects, it may safely be assumed that the JVER Scheme was not well known to domestic Japanese companies.⁴⁹

⁴⁰ Ministry of the Environment, Review of the Offset Credit Scheme (2008-2013), at 3 (Dec. 2013), available at http://www.j-ver.go.jp/document/e/j-ver_generalization_eng.pdf (last visited on Oct. 9, 2014). See also OTSUKA, *supra* note 4, at 56.

⁴¹ Ministry of the Environment, *supra* note 40, at 3.

⁴² Eisaku Toda, The Current Status of Carbon Offsetting in Japan 12 (Mar. 16, 2010), available at http://www.env.go.jp/en/earth/ets/mkt_mech.html#01 (last visited on Oct. 9, 2014).

⁴³ Ministry of the Environment, *supra* note 40, at 4.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ See Ministry of the Environment Office of Market Mechanisms, Offset Credit (J-VER) Scheme 4 (May 2011), available at http://www.env.go.jp/en/earth/ets/mkt_mech.html#01 (last visited on Oct. 9, 2014).

⁴⁸ *Id.* at 3.

⁴⁹ Toshihide Arimura et al., *Nihon Kigyō to Haishutsuryō Torihiki no Jittai* [Actual Conditions of Japanese Companies and Emissions Trading], in HAISHUTSURYŌ TORIHIKI TO SHŌENERUGI NO KEIZAI BUNSEKI [ECONOMIC ANALYSIS OF ENERGY-

In addition, the Prefectural JVER Program Certification Scheme has been introduced as a *supporting* credit certification scheme operated by voluntarily participating domestic prefectures.⁵⁰ According to this system, the JVER Certification and Steering Committees certify original prefectural schemes that guarantee and issue greenhouse gas emission and removal as credit to match a ‘mother scheme.’ They are, then, formally indexed to the Program Certification List; credit issued by the Prefectural JVER Program is to be equally counted and registered in the JVER Registry.⁵¹ Today, the prefecture programs in Niigata prefecture (4 projects)⁵² and Kochi prefecture (14 projects)⁵³ are formally certified.⁵⁴

In April 2013, this JVER system was integrated into a new scheme, the Japan Greenhouse Gas Emission Reduction/Removal Certification Scheme. It aims to adopt the merits of the JVER Scheme and the domestic Clean Development Mechanism to complement each other and to establish a system in which various actors can participate.⁵⁵

D. Emissions Trading Schemes by Local Governments

In 2007, the Tokyo Metropolitan Government adopted and implemented the “Tokyo Climate Change Strategy: A Basic Policy for the 10-Year Project for a Carbon-Minus Tokyo.” (hereinafter Tokyo Strategy).⁵⁶ The Tokyo Strategy declared:

In keeping with the imposition of the obligation to reduce total emissions on large CO₂-emitting business establishments, we aim to institute the emission trading system. We will encourage and support smaller business establishments’ energy-saving measures by purchasing emission reductions attained by these smaller businesses through energy

SAVING AND EMISSIONS TRADING] 112-119 (Toshihide Arimura & Shiro Takeda eds., 2012). <available only in Japanese>

⁵⁰ *Supra* note 47, at 5. [Emphasis added]

⁵¹ *Supra* note 42, at 14.

⁵² Niigata Prefecture, *Niigata-Ken Ofusetto Curejitto Seido Jissi Yōkō* [Implementation Guideline of the Offset Credit Scheme of the Niigata Prefecture], May 15, 2009, <available only in Japanese>, available at <http://www.pref.niigata.lg.jp/kankyokikaku/1242256673958.html> (last visited on Oct. 9, 2014).

⁵³ Kochi Prefecture, *Kochiken J-Curejitto Seido Jissi Yōkō* [Implementation Guideline of the J-Credit Scheme of the Kōchi Prefecture], Oct. 1, 2013, <available only in Japanese>, available at http://www.kochi-sanrin.jp/j-ver/seidoichiran_new.html (last visited on Oct. 9, 2014).

⁵⁴ Ministry of the Environment, *supra* note 40, at 21.

⁵⁵ For details see Ministry of Economy, Trade and Industry, J-Credit Scheme, Nov. 2013, available at <http://japancredit.go.jp/english/documents.html> (last visited on Oct. 9, 2014).

⁵⁶ See *Tokyo Climate Change Strategy: A Basic Policy for the 10-Year Project for a Carbon-Minus Tokyo*, at 18, available at http://www.kankyo.metro.tokyo.jp/climate/attachement/tokyo-climate-change-strategy_2007.6.1.pdf (last visited on Oct. 9, 2014).

conservation activities.⁵⁷

Based on this environmental Strategy, in June 2008, the Tokyo Metropolitan Assembly passed an ordinance that incorporated Japan's first cap-and-trade emissions trading program into the "Tokyo Metropolitan Environmental Security Ordinance."⁵⁸

This mandatory CO₂ reduction and emissions trading program (hereinafter Tokyo ETS) covers the industrial and commercial sector.⁵⁹ It is estimated that these sectors represent approximately 40 percent of the greenhouse gas emitted in Tokyo and the ETS applies to large-scale facilities (*e.g.* office buildings and factories), which have total consumption of fuels, heating and electricity of at least 1,500 kiloliters per year (about 1,400 facilities).⁶⁰ It targets energy-related CO₂ alone; other global warming gases might be added as necessary.⁶¹ There are stiff penalties for infractions. Fines (up to JPY 500,000) will be imposed on non-complying entities; and if business facilities covered by ETS fail to implement the Governor's order by the deadline, their names will be publicized.⁶²

In accordance with the Global Warming Strategy Promoting Ordinance of 2008, Saitama Prefecture announced the Target-Setting Emissions Trading Program, which started in April, 2011.⁶³ The Program covers large CO₂ emitters, including office buildings and factories; about 600 facilities are covered and allowed to trade allowances.⁶⁴ On September 17, 2010, the Tokyo Metropolitan Government and Saitama Prefecture signed an agreement to link their emission trading systems.⁶⁵

⁵⁷ *Id.*

⁵⁸ OTSUKA, *supra* note 4, at 56-57. See also Government of Japan, *Japan's Sixth National Communication under the United Nations Framework Convention on Climate Change* 38 (Dec. 2013), available at http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/nc6_japan_webversion.pdf (last visited on Oct. 9, 2014) (The Japanese government regards the Tokyo ETS as "particularly advanced undertakings.").

⁵⁹ See Tokyo ETS, available at http://www.kankyo.metro.tokyo.jp/en/climate/cap_and_trade.html (last visited on Oct. 9, 2014)

⁶⁰ See The Tokyo Metropolitan Government Bureau of the Environment, Tokyo Cap-And-Trade Program: Japan's First Mandatory Emissions Trading Scheme, (March 2010), available at http://www.kankyo.metro.tokyo.jp/en/climate/cap_and_trade.html (last visited on Oct. 9, 2014).

⁶¹ *Id.* at 12. (However, with regard to these gases, annual reporting obligations are imposed on them).

⁶² *Id.* at 23.

⁶³ See Department for the Environment, Global Warming Countermeasures of Saitama Prefecture, *Mokuhyō Setteigata Haishutsuryō Torihiki Seido no Kijun Haishutsunen no Santei tou no kansuru Setsumeikai* [An Explanatory Meeting on the Calculation of Emissions Baseline etc. under the Target-Setting Emissions Trading Program] 4-8 (Feb. 2011) <available only in Japanese>, available at <http://www.pref.saitama.lg.jp/uploaded/attachment/433792.pdf> (last visited on Oct. 9, 2014).

⁶⁴ *Id.*

⁶⁵ Office of Market Mechanisms, *supra* note 37, at 11.

In 2011, Kyoto City has introduced a unique and community-based system which certify CO₂ emission reductions by small and medium enterprises, citizens and shopping districts as tradable credits utilizing the JVER mechanisms.⁶⁶ Similarly, between 2010 and 2012, Hiroshima City implemented an experimental project for emissions trading. There, ordinary citizens who contributed to reducing CO₂ are provided with cash or shopping tickets. In the program, local companies (responsible enterprises) purchased a reduced amount of CO₂, which may be deducted from their emissions.⁶⁷ This project, however, lasted for only two years mainly due to financial difficulties.⁶⁸

E. Joint Crediting Mechanism

After two years' preparations and research for its implementation, in 2013, the Japanese government finally adopted the Joint Crediting Mechanism ("JCM"), which covers the period up until the future enactment of a new agreement under the UNFCCC.⁶⁹ Its primary goal was to enforce the 'ultimate objective' of UNFCCC by promoting global actions for emission reductions or removals. For this purpose, JCM is designed to "facilitate diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries."⁷⁰ Japan reports on this scheme to the Subsidiary Body for Scientific and Technological Advice ("SBSTA") of UNFCCC.⁷¹

The first JCM project was established under the Low Carbon Development

⁶⁶ Kyoto Prefecture, *Kyoto Ban CO₂ Haishutsuryō Torihiki Seido* [Kyoto's CO₂ Emissions Trading System], available at http://www.kyoto-ets.com/kyoto_co2_toha.html (last visited on Oct. 9, 2014); Local Governments for Sustainability, *Kyoto City establishes Emissions Trading System* <available only in Japanese>, Sept. 21, 2011, available at <http://www.iclei.org/jp/details/article/kyoto-city-establishes-emissions-trading-system.html> (last visited on Oct. 9, 2014).

⁶⁷ See Hiroshima City, *Shimin Sanka no CO₂ Haishutsuryō Torihiki Seido no Jisshi ni tsuite* [On the Implementation of Emissions Trading System by Public Participation] <available only in Japanese>, available at <http://www.city.hiroshima.lg.jp/www/contents/0000000000000/1306751598600/index.html> (last visited on Oct. 9, 2014).

⁶⁸ Telephone interview with officials in the Department for the Environment, Global Warming Countermeasures, Hiroshima City (July 24, 2014).

⁶⁹ See generally Government of Japan, Recent Development of the Joint Crediting Mechanism (July 2014), available at <http://www.mmechanisms.org/initiatives/jcm.html> (last visited on Oct. 9, 2014). In this respect, the Conference of the Parties notes that: "Parties, individually or jointly, may develop and implement various approaches, including opportunities for using markets and non-markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries" Decision 1/CP.18, ¶ 41, at 8, U.N. Doc. FCCC/CP/2012/8/Add.1 (Feb. 28, 2013). [Emphasis added]

⁷⁰ *Id.* at 3.

⁷¹ See Submission by Japan on Various Approaches, including Opportunities for Using Markets to Enhance the Cost-Effectiveness of, and to Promote, Mitigation Actions, at 5, available at http://www.mmechanisms.org/document/130423_submission_japan.pdf (last visited on Oct. 9, 2014).

Partnership between Japan and Mongolia in January 2013.⁷² Although JCM has started operations as a non-tradable credit-type mechanism, it may be transformed into a tradable credit type.⁷³ Under this new scheme, credits are ultimately issued based on the quantified amount of greenhouse gas emissions⁷⁴ reductions or removals achieved by the contribution of project participants.⁷⁵ Earned credits can be also used to achieve emissions reduction targets of both countries.⁷⁶ A Joint Committee consisting of representatives from both governments develop rules and guidelines necessary for the implementation of JCM.⁷⁷ It designates the third-party entities (“TPEs”)⁷⁸ and determines whether to approve or reject the proposed methodologies, as well as to develop the JCM methodologies.⁷⁹

To date, Japan has signed bilateral agreements for JCM with the following 10 countries: Bangladesh (March 2013), Ethiopia (May 2013), Kenya (June 2013), Maldives (June 2013), Viet Nam (July 2013), Lao PDR (August 2013), Indonesia (August 2013), Costa Rica (December 2013), Palau (January 2014), and Cambodia (April 2014).⁸⁰

3. Conclusion and Outlook

In its fifth report to the UNFCCC Secretariat, Japan cautiously stated its position on emissions trading schemes as:

An issue that must be comprehensively studied on a wide range of points such as a comparison with other methods and its effects, its possible impacts on industrial activities and national economy, and international trends in emissions trading, as well as the

⁷² See New Mechanism Information Platform, available at <http://www.mmechanisms.org/initiatives/mongolia.html> (last visited on Oct. 9, 2014).

⁷³ See Rules of Implementation for the Joint Crediting Mechanism, JCM_MN_RoI_ver01.0, ¶ 4, available at <http://www.mmechanisms.org/initiatives/mongolia.html> (last visited on Oct. 9, 2014).

⁷⁴ It includes carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃).

⁷⁵ *Supra* note 73, ¶ 39.

⁷⁶ *Id.*

⁷⁷ Ministry of Economy, Trade and Industry, *The Low Carbon Development Partnership between the Japanese Side and the Mongolian Side*, ¶ 4, available at <http://www.meti.go.jp/press> (last visited on Oct. 22, 2014).

⁷⁸ *Id.*

⁷⁹ *Supra* note 73, ¶ 21.

⁸⁰ For details, see New Mechanism Information Platform, available at <http://www.mmechanisms.org/e/initiatives/jcm.html> (last visited on Oct. 9, 2014).

evaluation of specific proposals and the appropriateness of introducing such proposals.⁸¹

Recently, the Intergovernmental Panel on Climate Change noted that although economic effectiveness may be the main reason for using emissions trading compared to other economic policies and instruments, past experience in the greenhouse gas emissions trading schemes used at the domestic, regional and international levels is too limited to draw any conclusions.⁸² If we were to admit to the overwhelming consensus among scientists that the current global warming is substantially attributed to human activities, all necessary governmental actions must be urgently taken based on an evolving environmental precautionary approach or principle.⁸³

The Tokyo ETS is certainly an important steppingstone as the first mandatory emissions trading program in Japan. Most prefectures in Japan still have to adopt an emissions trading scheme. Hence, only companies located in Tokyo must bear the additional cost of dealing with the obligatory local environmental program. As Professor Otsuka notes, this situation may likely cause some ‘internal problems’ in terms of economic fairness.⁸⁴ In other words, “large CO₂-emitting business establishments” in Tokyo are in a disadvantageous position in relation to business entities located in other prefectures without emissions trading program. As a consequence, it may be suggested that Japan must consider a nation-wide emissions trading system in the context of globalism. On this point, the Bill for the Basic Act on Climate Change Countermeasures will provide a basis for a nation-wide discussion. In doing so, Japan could be a leading party of the international climate change regime in the foreseeable future.

⁸¹ Government of Japan, *supra* note 37, at 173.

⁸² IPCC, CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE 33 (2014).

⁸³ P. BIRNIE, A. BOYLE & C. REDGWELL, INTERNATIONAL LAW AND THE ENVIRONMENT 152-164 (3d ed. 2009). *See also* N. Schrijver, *The Status of the Precautionary Principle in International Law and its Application and Interpretation in International Litigation*, in LE PROCÈS INTERNATIONAL: LIBER AMICORUM JEAN-PIERRE COT 241-253 (2009); Toru Iwama, *The Precautionary Principle and the Risk Analysis in International Environmental Law*, 42 SEINAN L. REV. 1-39 (2010).

⁸⁴ Tadashi Otsuka, *Kokunai Haishutsuwaku Torihiki ni kansuru Hōteki-Hōseisakuteki Kadai* [Legal and Policy Problems on Domestic Emissions Trading] <available only in Japanese>, 1357 JURISUTO 20-21 (2008).