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ARTICLE

Improving the Legal Implementation Mechanisms for a Carbon Tax in China

DR. HAIFENG DENG*

I. INTRODUCTION

In order to respond to the challenges posed by the greenhouse effect, many countries have made efforts to reduce energy consumption by developing energy-saving technologies. Countries have begun to control carbon dioxide (CO₂) consumption through the use of market instruments. Moreover, because command and control measures have persistently failed to curb the emission of greenhouse gases, some European countries have successfully implemented a carbon tax policy along with green tax reforms, which has proven that a carbon tax can make a positive impact in reducing greenhouse gas emissions. Literature suggests that incorporating a carbon tax into fiscal policy will be a popular and effective option to reduce the global greenhouse effect in the future.¹

As a developing country, China needs “to maintain relatively rapid economic growth in the next few years, which will require

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1. See Shi-Ling Hsu, *The Case for a Carbon Tax: Getting Past Our Hang-Ups to Effective Climate Policy* (Island Press 2012) 25-115; see generally Ian W.H. Parry, *Reforming the Tax System to Promote Environmental Objectives: An Application to Mauritius* 6 (Int'l Monetary Fund, Working Paper No. 11/124, 2011), available at <https://www.imf.org/external/pubs/ft/wp/2011/wp11124.pdf>.

massive energy consumption.”² “Moreover, China’s rapid industrialization and urbanization require the support of heavy industr[y] and [high] energy consuming materials like cement and steel.”³ Currently, China is facing great pressure to meet its emissions reduction target by 2015.⁴ In order to alleviate the burden of reduction, it may be an appropriate time for China to implement economic instruments that can effectively respond to challenges posed by climate change. One of these economic instruments is a carbon tax. Most scholars believe that levying a tax on CO₂ emissions will be an inexorable green policy for China. However, the US-China Business Council issued the State Council Legislative Work Plan of 2012 stating that the environmental protection tax law is one of urgent and timely work.⁵ Recently, the Ministry of Finance, the State

2. Dong Fang Caifu Wang, *When Sewage Tax Reform*, EAST MONEY (Sept. 18, 2014), <http://www.mining.com/china-the-worlds-biggest-energy-consumer-and-producer-72513/>.

3. *China Faces “Great Pressure” in Meeting Emissions Target*, CHINA DAILY USA (Nov. 11, 2011), http://usa.chinadaily.com.cn/business/2011-11/11/content_14080300.htm.

4. *Id.* See DAVID COHEN-TANUGI, PUTTING IT INTO PERSPECTIVE: CHINA’S CARBON INTENSITY TARGET 1 (Nat. Res. Def. Council ed., 2010), available at https://seors.unfccc.int/seors/attachments/get_attachment?code=9VH8IUPHKI1I UHISGILD456OE35QK11N (China has reported its specific indicators of “carbon intensity” in the Copenhagen conference in 2009); Zhang Kunmin et al., *Environmental Policies in China: Evolvement, Features and Evaluation*, 17 CHINA POPULATION, RES. & ENV’T 4 (2007), available at <http://www.contemporaneaagr.es/files/environmental%20policies%20in%20china.pdf> (China has published “China’s Ten Countermeasures on Environment and Development” which has outlined the future roadmap of China’s sustainable development strategy); *Status of Ratification of the Convention*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php (last visited Sept. 24, 2014) (China has already signed the United Nations Framework Convention on Climate Change (UNFCCC)); Jonathan Watts, *Copenhagen Conference: Fears China May Downgrade Emissions Target*, THE GUARDIAN (Nov. 25, 2009), available at <http://www.theguardian.com/environment/2009/nov/25/copenhagen-china-carbon-targets> (President Hu Jintao has promised to reduce the carbon intensity of China’s economy by a “notable margin” between 2005 and 2020 and has made an emission reduction target that China’s carbon dioxide emissions relative to gross domestic product (GDP) should be reduced by fifty percent by 2020 compared with that of 2005).

5. The State Council General Office of the State Council on the Issuance of the 2012 Legislative Program (promulgated by the Dep’t of the St. Council, Feb.

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Administration of Taxation, the Ministry of Environmental Protection, and the Legislative Affairs Office of the State Council jointly established a leading group and several working teams, and drafted the *Environmental Protection Law of the People's Republic of China*, which will adopt a carbon tax into China's environmental taxes for the first time.⁶ It puts "coal and coal products, coke oven gas, crude oil, gasoline, diesel oil, fuel oil, liquefied petroleum gas, natural gas and other fossil fuels into the taxation scope."⁷ There is no doubt that carbon taxation will become prevalent in the near future. To ensure a successful carbon tax system requires scientific analyses, a determination of its self-consistency and effectiveness, scrutiny of its operating environment, and the construction of safeguard mechanisms.⁸

Within the framework of existing Chinese environmental laws, carbon taxation faces four main challenges: the contradiction of existing taxes, conflict with the carbon emissions trading system, necessary adjustments to the organizational structure of tax collection and management,⁹ and coordination with international trade rules.¹⁰ Implementing a carbon tax is a complete and systematic process containing three stages:

1, 2012, effective Feb. 1, 2012) (Chinalawinfo), available at http://www.pkulaw.cn/fulltext_form.aspx?Db=chl&Gid=172654 (China).

6. *Environmental Protection Law of the People's Republic of China (Presidential Decree No. IX)*, XINHUA NEWS AGENCY (Apr. 25, 2014), http://www.gov.cn/zhengce/2014-04/25/content_2666434.htm.

7. Liang Jialin, *Huanbao Shuifa Shouci Jiang "Tanshui" Naru Qizhong* [Environmental Taxation Law Adopts Carbon Tax for the First Time], JINGJI CANKAO BAO [ECON. INFO. DAILY] (May 24, 2013), http://jjckb.xinhuanet.com/2013-05/24/content_446671.htm.

8. See generally, *Low-carbon Economy in the Context of Issues Related to Introduction of a Carbon Tax Discussion*, RES. PAPERS CENTER (Dec. 12, 2011), http://eng.hi138.com/fiscal-levy-papers/tax-seminar-papers/201112/366284_lowcarbon-economy-in-the-context-of-issues-related-to-introduction-of-a-carbon-tax-discussion.asp#.VR_jGpTF_IM.

9. Li Meigin, Riben Tanshui Shijian he Jiejian [Japan's Carbon Tax Practice and Its Enlightenment to China], 3 CAIWU YU JINGRONG [ACCT. & FIN.] 61 (2014) (China).

10. See David Rich, *Climate Change, Carbon Taxes, and International Trade: An Analysis of the Emerging Conflict Between the Kyoto Protocol and the WTO*, ENVTL. ECON. & POL'Y (Dec. 9, 2004), available at <http://web.archive.org/web/20140913113100/http://are.berkeley.edu/courses/EEP131/fall2006/NotableStudent04/ClimateChangeRich.pdf>.

introduction, collection, and impacts assessment.¹¹ In order to address these problems, it is necessary to construct legal implementation mechanisms for carbon taxation in China. The legal mechanisms of implementing a carbon tax include a series of coordination and safeguard measures aimed at optimizing the comprehensive environmental, economic, and social benefits of a carbon tax. This will become operative by integrating the carbon tax with existing environmental taxes and fees and by coordinating the different functions of a carbon tax and the carbon emissions trading system. In the context of modern economic globalization, the practice of a domestic carbon tax policy must be consistent with international trade rules. Therefore, making reasonable regulations for carbon tariffs is also an important component of the legal implementation mechanisms.

Part II of this article discusses the possible overlap between existing environmental taxes and the carbon taxes that will be levied and identifies the conflict between the two systems. Part III establishes a balanced mechanism to promote the complementarities between carbon taxation and carbon emission trading. Part IV introduces the European practice of carbon tax management, and proposes to construct a technical and administrative organization to safeguard the positive social effects of carbon taxation. Part V critically discusses carbon tariffs to ensure their conformance with international trade rules.

II. LEGAL IMPLEMENTATION MECHANISM FOR THE ADOPTION A OF CARBON TAX

A. The Potential Influence of Adopting a Carbon Tax

Carbon taxes are levied on CO₂ emitting behaviors and aim to reduce air pollution. China faces pressure in dealing with greenhouse gas effects related to air pollution and climate change. By introducing a carbon tax, combined with the current tax system, green tax reform can be implemented in China.

11. Cui Jinghua, *Woguo Tanshui Zhidu Yaosu Sheji Yanjiu* [*The Design of Elements of Carbon Taxes in China*], 169 *CAIJING LIYUN YU SHIJIAN* (Shuangyue Kan) [THEORY & PRAC. OF FIN. & ECON.] 69 (2011) (China).

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Combining a carbon tax with the current taxes already levied will achieve intrinsic self-reconstruction and self-improvement of the tax system itself, namely self-consistency.¹² In particular, the whole tax system needs to undergo systematic adjustments and revisions to reduce the overlapping areas and supplement the ambiguous areas between carbon taxation and the current taxes.¹³

At the same time, the creation of a new tax may bring negative impacts to the economy, such as reducing the competitiveness of enterprises, especially energy-intensive corporations, reducing economic output, and causing unemployment. Zhang Peisen, a senior researcher with the Taxation Research Institute under the State Administration of Taxation stated, “the creation of a new environmental tax will be rather complicated, as it will have to take into account the relationships that already exist between the country’s existing taxes.”¹⁴ As a new environmental tax, a carbon tax will certainly face the same challenge anticipated by Mr. Zhang. Therefore, in order to limit the gross cost of the carbon tax, it is necessary to achieve revenue-neutrality so that the recycling of revenues can be used to mitigate some of the more damaging impacts of the

12. PRESCOTT LECKY, *SELF-CONSISTENCY: A THEORY OF PERSONALITY* (1962). “Self-consistency” was first issued as a concept in Social Psychology by Prescott Lecky, whose “central assumption was that self-conceptions are critical for survival because they enable people to predict and control the nature of social reality.” See William B. Swann et al., *The Cognitive-Affective Crossfire: When Self-Consistency Confronts Self-Enhancement*, 52 *J. PERSONALITY & SOC. PSYCHOL.*, 881, 881 (1987). Here we anthropomorphize the green tax system as a person, whose self-consistency means subjective self-consultation, self-control, self-granted and self-identity, and it shows the intrinsic consistency of a concept, idea, assumption, or conclusion. In short, the crux in evaluating the self-consistency from a theoretical perspective is whether it can improve and construct itself according to the changes, which are ever-evolving in society. See *id.* Self-consistency is the intrinsic basis of self-reflection and self-transcendence, which motivates internal tensions and works as the main growing mechanism from a systematic perspective. See *id.*

13. See generally Janet E. Milne, *Environmental Taxation in the United States: The Long View*, 15 *LEWIS & CLARK L. REV.* 417, 423 (2011).

14. *China Plans to Impose ‘Green Tax’*, *THE ECON. TIMES* (Oct. 27, 2011), http://articles.economictimes.indiatimes.com/2011-10-27/news/30328456_1_green-tax-environmental-tax-china-plans.

existing tax system.¹⁵ Above all, the integration of a carbon tax into the current tax system will achieve self-consistency and double dividend effects.¹⁶

In other words, the seamless implementation of a carbon tax into the current tax system is as important as devising a good tax plan. Therefore, it is necessary to have coordination mechanisms between the carbon tax and the currently levied taxes. In order to minimize the social costs of this tax adjustment, it is necessary to integrate the carbon tax with existing taxes and fees on a “one-to-one” basis, and to then achieve the optimization and upgrade of the current tax system under the guidance of “Greening.”¹⁷

15. Wallace E. Oates, *Green Taxes: Can we Protect the Environment and Improve the Tax System at the Same Time?*, 61 S. ECON. J. 915, 921 (1995), available at <http://classwebs.spea.indiana.edu/kenricha/Oxford/Oxford%202011%20Readings/Oates1995.pdf>.

16. See generally Firouz Gahvari, Book Review, 40 J. ECON. LITERATURE 221, 221 (2002) (reviewing RUUD A. DE MOOIJ, ENVIRONMENTAL TAXATION AND THE DOUBLE DIVIDEND (2000)), available at http://faculty.las.illinois.edu/fgahvari/index_files/RecentPublications/reviewof%20DD.pdf (“The double-dividend hypothesis asserts that in second-best settings, environmental taxes are welfare enhancing on two counts: the lowering of environmental damages, and the reduction in the existing distortionary taxes.”). Ruud A. De Mooij suggests, “the feasibility of the second dividend depends on the *net*, and often conflicting, effects of two factors.” *Id.* “There is the ‘revenue recycling’ [effect]: gains due to cutting the existing distortionary taxes *relative to* an alternative policy of lump-sum rebates of the generated revenues.” *Id.* “[T]here is [also] the ‘tax-base’ effect: the property that a marginal increase in any tax rate, in the presence of prior distortionary taxes, has a first-order effect on welfare by changing the existing tax base.” *Id.* The central question of most studies is indeed whether or not a double dividend can be obtained. See Ian W.H. Parry & Antonio M. Bento, *Tax Deductions, Environmental Policy, and the “Double Dividend” Hypothesis*, 39 J. ENVTL. ECON. & MGMT. 67, 67 (2000). Parry and Bento argue, “ignoring any environmental benefits, the net impact of an environmental tax swap is to significantly reduce the overall economic costs of the tax system for pollution reductions up to at least [fifty] percent.” *Id.* at 68; see also Jeong Hwan Bae, *The Welfare Consequences of Carbon Tax Reform in Open Economies: The Application of Computable General Equilibrium Model for Pennsylvania* 19 (Dec. 2005) (unpublished Ph.D. dissertation, Pennsylvania State University) (on file with Pennsylvania State University, The Graduate School, College of Agricultural Sciences).

17. Zhang Xiaoying & Zhong Jinwen, Huanjing Shuishou Tixi Xia de Zhongguo Tanshui Sheji Gouxiang [The Conceit of the Design of China’s Carbon Tax Under Environmental Taxation System], 6 WUHAN DAXUE XUEBAO (ZHEXUE SHEHUI KEXUE BAN) [WUHUAN U. J. PHIL. & SOC. SCI.] 852 (2010) (China).

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B. The Current Composition of Environmental Taxes and Fees

It has been twenty years since China started its comprehensive tax reform in 1994, during which time a number of single taxes were imposed on a step-by-step basis, such as the resources tax, consumption tax, and value-added tax. Since 1994, excise tax rates for vehicles have been made proportional to the size of car engines.

The rate for cars with engines 1.0 [liter] (L) or less was set at 3%, for engines over 4.0L it was 8%, and for engines in between [these sizes,] the rate was 5%. As of . . . April [1,] 2006, the range of excise tax rates for vehicles was broadened [from three percent to twenty percent]. Rates for small cars with engines between 1.0 and 1.5L decreased to 3 [percent], for engines from 1.5 to 2.0L they remained at 5 [percent, and] for engines between 2.0 to 4.0 the rate increased to between 9% and 15%. For engines over 4.0L, the rate [more than] doubled from 8% to 20%. On . . . September [1,] 2008, the excise tax rate for engines 1.0L or less further decreased to 1%, while for engines from 3.0 to 4.0L it increased to 25 %. The rate for cars with engines over 4.0L increased to 40%.¹⁸

In 2001, [the] value added tax (VAT) for wind power [was] cut in half [from seventeen percent] to 8.5[%]. In the same year, a circular determined that VAT collected for using municipal solid waste for power generation would be refunded back to the producer. In 2003, the VAT for biogas production was also reduced to 13[%].¹⁹

In 2003,

Foreign investment in both biogas and wind energy production also benefit[ed] from a reduced income tax rate of 15[%], as

18. *Vehicle Excise Tax Rates*, INT'L ENERGY AGENCY, <http://www.iea.org/policiesandmeasures/pams/china/name-24534-en.php> (last updated July 6, 2012).

19. *Reduced VAT for Renewable Energy*, INT'L ENERGY AGENCY, <http://www.iea.org/policiesandmeasures/pams/china/name-22670-en.php> (last updated July 5, 2012).

opposed to 33[%]. Renewable energy enterprises and bio-energy development projects can also request income tax reduction[s] or exemptions. In addition [producers of] wind turbines and their main components, as well as photovoltaic modules, benefit from preferential customs duty rates. As of September 2007, the Chinese government [has been] developing a series of preferential tax policies to encourage the development of energy conservation and renewable energy. The new incentives include income tax cuts for the producers and consumers of renewable energy, as well as a reduction of the import tax for “green” equipment.²⁰

The trend of greening the tax system has become increasingly apparent in view of the transformation of road tolls into fuel oil taxes and the creation of farmland taxes and pollution charges.²¹

Unfortunately, although all these tax policies may bring about slightly positive secondary effects on environmental protection, few of them are introduced into the tax system primarily for environmental reasons.²² As a result, the current tax system cannot effectively correct and prevent the negative externality of human behaviors, and the overall tax structure has not reached the optimum position to consider the environmental benefits.

It is undoubtedly true that if the current tax system cannot be reformed, the environment will be faced with destructive pollution and damage, causing it to be unable to support sustainable economic development. Fortunately, the implementation of a carbon tax offers the impetus for emissions reduction and environmental protection because the government

20. *Preferential Tax Policies for Renewable Energy*, INT'L ENERGY AGENCY, <http://www.iea.org/policiesandmeasures/pams/china/name-24106-en.php> (last updated July 6, 2012).

21. See Sun Zesheng & Song Yuhua, *Zhongguo de Ranyou Shui Gaige: Yiyi, Cuoshi yu Qianjing—Jianlun Nengyuan Fa (Zhengqiu Yijian Gao) de Ruogan Wenti* [Fuel Tax Reform in China: Significance, Measures and Prospects—with Additional Discussion of Some Issues of China's Draft Energy Law], 8 GUOJI SHIYOU JINGJI [INT'L PETROLEUM ECON.] 45 (2008) (China).

22. Liwen & Fan Liming, *Zhongguo Gongyehua Guocheng Zhong de Shuizhi Lühua* [Greening the Tax System in Chinese Industrialization Process] 3 SHUIWU YANJIU [TAX'N RES.] 6 (2006).

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will be able to rationalize complicated relationships between a carbon tax and other environmental taxes.

C. Executing Modes to Introduce a Carbon Tax Into the Current Tax System

In order to ensure that carbon taxation can effectively control and reduce CO₂ emissions, more needs to be done beyond perfecting a tax scheme. Take this metaphor as an example. If carbon taxation is viewed as an infant, it is necessary to ensure the infant has a strong “parent” to protect it from various threats. In this metaphor, an effective legal system that supports the carbon tax system assumes the role of the parental figure. In other words, to achieve the greatest amount of CO₂ reduction benefits through the use of carbon taxation, it is high time for China to adjust its current tax system and pave a smooth path to impose taxation on greenhouse gas emissions. According to the tax neutrality principle, the introduction of a carbon tax needs to be accompanied by the value-added tax and pollutant discharge fees, as well as the improvement of resource taxes, energy taxes, and other environment-friendly taxes.²³ However, a carbon tax should be introduced as the base for the overall tax reform because it can make up for the inadequacies of the pollution charge system and reduce the emission of greenhouse gases.

1. Optimization of the Current Tax Structure

“In most European countries, green taxes have been introduced without increasing the total tax burden [on enterprises]. The goal of fiscal neutrality is explicitly associated with green tax reforms in many countries.” Therefore, current

23. See JEREMY CARL & DAVID FEDOR, REVENUE-NEUTRAL CARBON TAXES IN THE REAL WORLD: INSIGHTS FROM BRITISH COLUMBIA AND AUSTRALIA (2012), available at http://media.hoover.org/sites/default/files/documents/CarlFedor_HooverETF2012_RevenueNeutralCarbonTaxesInBCandAUS.pdf (energy policy essay from the Shultz-Stephenson Task Force on Energy Policy of the Hoover Institution of Stanford University).

taxes will need to be adjusted in unison with the introduction of new environmental taxes.²⁴

a. Replacing the Fuel Oil Tax

In order to compare the features of a carbon tax against a fuel oil tax, it is necessary to identify their tax purposes and scopes, and to ascertain whether they have a similar effect on environmental protection. In 1998, the Highway Law transformed the road toll for maintenance into the Fuel Oil Surcharge.²⁵ In the revised version of the Highway Law from 2004, the fuel oil surcharge is replaced by a tax.²⁶ In November 2008, the State Council decided to launch a reform on taxes and fees for refined petroleum products by eliminating tolls for highway maintenance and waterway maintenance, administration fees of highways and waterways, passenger and cargo surcharges for highways and waterways, and imposing a fuel oil tax, which includes consumption tax on gasoline, diesel oil, and other refined oil within their price levels.²⁷

24. Johan Albrecht, *The Use of Consumption Taxes to Re-launch Green Tax Reforms*, 26 INT'L REV. L. & ECON. 88, 90 (2006).

25. China Soc'y For Human Rights Studies, *Highway Law of the People's Republic of China*, CHINA'S HUMAN RTS., <http://www.humanrights-china.org/zt/03102410/200312003112885524.htm> ("Expenses for highway maintenance should be acquired through collection of fuel oil surcharge paid by units and individuals in purchase of fuel oil according to the relevant provisions by the State. In cases where fuel oil surcharge is collected, no more road maintenance fees shall be collected.").

26. Zhonghua renmin gongheguo gonglu fa (中华人民共和国公路法) [Highway Law of the People's Republic of China] (adopted by the Standing Comm. Nat'l People's Cong., July 3, 1997, effective Jan. 1, 1998, and as amended by the Standing Comm. Nat'l People's Cong., Aug. 28, 2004) 2004 STANDING COMM. NAT'L PEOPLE'S CONG. GAZ. Chp. IV, Art. 36 § 1, available at http://www.npc.gov.cn/englishnpc/Law/2007-12/11/content_1383545.htm (China) ("The State shall raise funds for highway maintenance by means of taxation in accordance with law, and the specific measures and steps for implementation shall be formulated and taken by the State Council.").

27. See Chengpin Youjia Shuifei Gaige Fangan(zhengqiu yijian gao) (成品油价格改革方案 (征求意见稿)) [Refined Oil Tax Reform Program (draft)] (promulgated by the Nat'l Dev. & Reform Comm'n, the Ministry of Fin., the Ministry of Transp., & the St. Admin. of Tax'n, Aug effective Jan. 1, 2009), available at http://www.ndrc.gov.cn/rysgkfa/qw/200812/t20081205_251308.html (China).

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Initially, the fuel oil tax was introduced to replace the road toll with the goal of saving fossil fuels and reducing environmental pollution. Likewise, the main purpose of carbon taxation is to reduce greenhouse gases, including CO₂, and to protect the environment. Therefore, the purpose and effect of a carbon tax and the fuel oil tax are similar.²⁸ However, three slight differences between the taxes remain. First, the carbon tax levies a tax on both the energy exploitation stage and the terminal stage of consumption, while the fuel oil tax only imposes a tax on the final stage of fuel oil consumption. Second, the carbon tax is imposed on all carbon extraction behaviors as well as consumption, while the fuel oil tax only levies a tax on fuel oil consumption in transportation. Third, the carbon tax can be used as the general government administrative management expenditure, while the fuel oil tax can only be used for construction, and maintenance and management of highways, waterways, and air transports.²⁹

Some European countries impose a carbon tax on the consumption of natural gas or gasoline for land transportation.³⁰ For example, Denmark and Sweden levy carbon taxes on railway transportation.³¹ Denmark, Finland, and Norway also impose taxes on the fuel used for personal transportation equipment, as well as upon lubricating oil.³² Most Nordic countries also levy a carbon tax on the burning of diesel oil, such as the Netherlands, which imposes a carbon tax on their air transportation industry.³³ The carbon taxes imposed on transportation in European countries are similar to the fuel oil tax in China, therefore they provide practical evidence in support of replacing

28. *See id.*

29. Michael Waggoner, *Why and How to Tax Carbon*, 20 COLO. J. INT'L ENVTL. L. & POL'Y 1, 10 (2008).

30. Zhou Jian & He Jiankun, *BeiŌu Guojia Tanshui Zhengce de Yanjiu ji Qishi* [Research on Carbon Tax Policy of Nordic Countries and its Enlightenment], 22 HUANJING BAOHU [ENVTL. PROTECTION] 70 (2008) (China).

31. *See generally id.*

32. *See generally id.*

33. YANG JINTIAN & GE CHAZHONG (杨田、葛察忠), *HUANJING SHUI DE XIN FAZHAN* (环境税的新发展) [NEW DEVELOPMENTS ON ENVIRONMENTAL TAXES] 192 (China Env'tl. Sci. Press 2000).

the fuel oil tax on transportation with a carbon tax to reduce the tax burden on the Chinese transportation industry.

b. Coordinating with Other Related Taxes

Since China's first tax reform occurred in 1994, a tax system focusing on both turnover tax and income tax was established imposing twenty-three new taxes, including a value-added tax, a consumption tax, a resources tax, and a vehicle and vessel tax, all of which have direct or indirect consequences for energy production and consumption.³⁴

To avoid undermining long-term economic planning and investments, which are important for macro-economic development, the introduction of a carbon tax into the tax system needs to be fine-tuned. In other words, it is necessary to change the tax rate of all related taxes, such as turnover taxes, including the value-added tax, resources tax, and vehicle and vessel tax, in order to limit the negative effects of the new tax on the whole economy and thereby achieve tax neutrality, as well as a reduction of CO₂ emissions.³⁵

i. Turnover Tax

A turnover tax includes the value-added tax and the consumption tax.³⁶ The value-added tax aims to promote the use of clean energy and controls environmental pollution by implementing a low tax rate for clean energy.³⁷ Therefore, the carbon tax could serve as an additional tax to the value-added tax imposed on activities that emit CO₂ like coal gas, liquefied petroleum gas, natural gas, coal products for domestic use, and

34. Mun-Heng Toh & Qian Lin, *An Evaluation of the 1994 Tax Reform in China Using a General Equilibrium Model*, 16 CHINA ECON. REV. 246, 246-48 (2005).

35. Waggoner, *supra* note 20, at 2.

36. Lin Xuebing, Ministry of Fin. (China), *IMF Tax Policy Seminar for Asian and Pacific Countries on Tax Incentives: Tax System and Tax Incentive*, DOC88.COM (June 9, 2009), available at <http://www.doc88.com/p-057205979922.html>.

37. See Wang Huitong, *Ōumeng de Lde Zengzhi Shui Gaige ji Jiejian [The European Green Value Added Tax Reform and its Experience]*, 2 SHUIWU YANJIU [TAX'N RES.] 90 (2007) (China).

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crude oil.³⁸ On the other hand, it is necessary to reduce the refined oil tax and use the carbon tax as an additional tax imposed on the consumption of gasoline, diesel oil, lubricating oil, solvent oil, naphtha, kerosene, and fuel oil. At the same time, it is necessary to impose a coal consumption tax and incorporate the carbon tax as an additional tax.

Some may ponder the question as to whether it would be possible to increase the tax rate of both turnover taxes since the carbon tax added on both of the turnover taxes will increase the pre-existing tax rates. To answer this question, we need to distinguish between the functions of different taxes. A slight increase in the tax rate on the consumption tax or the value-added tax will magnify the negative influence on overall consumption and on investments because both the consumption tax and the value-added tax will mainly impact economic activities rather than emissions behaviors.³⁹ Comparatively, a carbon tax is imposed on enterprises to discourage pollution emissions. Therefore, the collection of the carbon tax will have fewer negative impacts on the economy than a direct increase in the turnover tax rates.

ii. Resource Tax and Vehicle and Vessel Tax

Resource taxes are imposed on items such as crude oil, natural gas, coal, mining, and salt.⁴⁰ Taxes on minerals and energy products are closely related to environmental polluting behaviors. In terms of reducing pollution, it is more effective to levy tax on consumption, rather than the exploitation, of resources.⁴¹ The main purpose of a resource tax is to promote the

38. See Zhang Xiaoying, *supra* note 17, at 852.

39. Richard J. Pierce, *The Past, Present, and Future of Energy Regulation*, 31 UTAH ENVTL. L. REV. 291, 299-300 (2011).

40. *China's Tax System*, ST. ADMIN. OF TAX'N OF THE PEOPLE'S REPUBLIC OF CHINA (Aug. 5, 2012), <http://www.chinatax.gov.cn/n6669073/n6669133/6887407.html>.

41. See Gong Huiwen et al., *Ziyuan Shui, Xiaofei Shui, Huanjing Shui Sanzhe de Guanxi* [*The Relations Among Resource Tax, Consumption Tax and Environmental Tax*], ZHONGGUO SHUIWU BAO [CHINA TAX'N NEWS], 5 (Oct. 8, 2014). See also Wang Jin-nan et al., *Yingdui Qihou Bianhua de Zhongguo Tanshui Zhengce Yanjiu* [*The Study on China's Carbon Tax Policy to Mitigate*

reasonable development and utilization of natural resources,⁴² while a carbon tax focuses on carbon emissions reduction at the consumption stage.⁴³ Therefore, a carbon tax will not affect the resources tax.

The vehicle and vessel tax is imposed on enterprises to adjust the distribution of social wealth, and therefore, it serves a different function from a carbon tax.⁴⁴ Therefore, the introduction of a carbon tax will have no effect on the vehicle and vessel tax. However, in order to strengthen the environmental effects on vehicle and vessel consumption, a new tax named, "Motor Vehicles Tax," needs to be imposed.

iii. Vehicle Excise Carbon Tax

The vehicle purchase tax is imposed on the entities and individuals who purchase the taxable vehicles, such as cars, motorcycles, trams, trailers and agricultural transport vehicles. Currently, the vehicle purchase tax is calculated under the rate on value method, and the tax rate is 10 percent. The price for tax assessment is the total amount of the price and other charges in addition to the price paid by the taxpayer to the seller for the purpose of purchasing the taxable vehicle (excluding value added tax); the State Administration of Taxation . . . provide[s] for the minimum price for tax assessment of the taxable vehicles of various types by reference to the average market transaction price of the taxable vehicles. Where the taxpayers purchase the taxable vehicles, they shall file the tax returns and pay up the tax amount payable in a lump sum within [sixty] days upon the purchase.⁴⁵

Consumers seldom consider environmental benefits when purchasing a vehicle. Normally, consumers are more concerned

Climate Change], 1 ZHONGGUO HUANJING KEXUE [CHINA ENVTL. SCI.] 101, 104 (2009) (China).

42. *See id.*

43. Fan Yong et al., *Xuanze Butong Huanjie Zhengshou Tanshui de Zhengce Xiaoguo Fenxi* [Analysis on Policy Effects on Various Carbon Tax Collections], 10 TANSUI YANJIU [TAX'N RES.] 53 (2012) (China).

44. *China's Tax System*, *supra* note 40.

45. *China's Tax System*, ST. ADMIN. OF TAX'N OF THE PEOPLE'S REPUBLIC OF CHINA (Aug. 5, 2012), <http://www.chinatax.gov.cn/n6669073/n6669133/6887407.html>.

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about the price of the car rather than the type of fuel the vehicle consumes. Therefore, in order to encourage consumers to form a low-carbon consumption habit, it is necessary to levy a carbon tax on the vehicle purchase. To some extent, a carbon tax on vehicles is indirectly imposed on motor vehicle manufacturers, which will stimulate the production of low-carbon vehicles, thereby shifting the vehicle market towards more environmentally friendly options. Moreover, the imposition of a carbon tax on vehicles sends a clear signal to car manufacturers to set a preference for low-carbon products. Once the vehicle purchase carbon tax is imposed, either the consumption tax on cars and motorcycles should be abolished, or the tax rate should be reduced in order to avoid tax overlaps and to limit the gross cost of the carbon tax on the economy. It is an excise tax on vehicle sales prices.⁴⁶ The tax should be levied on the basis of engine size, as measured by cylinder capacity in cubic centimeters (cc).⁴⁷

Similarly, a tax incentive for environmentally friendly commercial vehicles is in full force in Hong Kong.

Vehicular emissions are the major source of roadside air pollution in Hong Kong. Reducing emissions from vehicles can improve our roadside air quality. To encourage the use of environment-friendly commercial vehicles, which have low emissions, . . . the First Registration Tax (FRT) was offered to buyers of newly registered environment-friendly commercial vehicles.⁴⁸

Purchasers of “environmental-friendly commercial vehicles can enjoy tax concessions and make an effort to protect the environment.”⁴⁹ Although a tax concession scheme is not a real carbon tax, it is an alternative incentive to reduce carbon emissions from transportation.

46. See Ian W.H. Parry, *Reforming the Tax System to Promote Environmental Objectives: An Application to Mauritius* 4 (Int'l Monetary Fund, Working Paper No. 11/124, 2011), available at http://www.elibrary.imf.org/doc/IMF001/11857-9781455263417/11857-9781455263417/Other_formats/Source_PDF/11857-9781455293650.pdf.

47. *Id.* at 20.

48. *Tax Incentives for Environment-friendly Commercial Vehicles*, Env'tl. Prot. Dep't, http://www.epd.gov.hk/epd/english/environmentinhk/air/prob_solutions/environment_friendly_commercial_vehicles.html (last visited Sept. 25, 2014).

49. *Id.*

2. Integration of a Carbon Tax and Pollution Charge

Currently, a pollution charge is still a popular measure to curb pollution emissions in China. On December 31, 1978, the Central Committee of the Communist Party of China approved the *Report on Work of Environmental Changes* drafted by the State Council Leading Group of Climate Change, which established the Pollution Pays Principle for the first time.⁵⁰ In September 1979, The Environmental Protection Law of the People's Republic of China (Trial) was issued and explicitly regulated the pollution charge.⁵¹ On February 5, 1982, the State Council approved and issued the *Interim Measures on the Collection of Pollution Discharge Fee*, which became effective on July 1, 1982. Since July 1, 2003, a new pollution charge policy came into effect throughout the country.⁵² The State Council issued *The Regulation of Levy and Use of Pollution Charge*.⁵³ However, the pollution charge is blamed to have very low charge rates and an improper fund allocation.⁵⁴ As a result, many policy scientists support reforming the pollution charge system to make it a pollution tax.⁵⁵

50. Yang Honggang, *Huanjing Zhengce Gongju de Shishi Xiaoguo Jiqi Xuanze Yanjiu* [Research on Implementation Effect and Choice of Environmental Policy Instruments] 102 (2009) (unpublished Ph.D. thesis, Fudan University) (on file with author).

51. *China's Regulation for Pollution Charges*, NAT'L. DEV. & REFORM COMMISSION, http://jgs.ndrc.gov.cn/zttp/zyhjgg/200704/t20070409_127834.html (last visited Dec. 1, 2014).

52. *See id.*

53. *See id.*

54. Wang Meng, *Woguo Paiwufei Zhidu de Juxianxing Jiqi Gaike* [The Limitation and Reform of China's Pollution Pay System], 7 SHUIWQU YANJIU [TAX'N RES.] 28 (2009) (China).

55. Jin Dongsheng & Gong Huiwen, *Paiwu Shoufei Zhidu de Lishi Biran Xing jiqi Fangan Xuanze* [The Historical Inevitability and Choice of Transforming Pollution Fees into Taxation], 9 DIFANG CAIZHENG YANJIU [TRANSNAT'L FISCAL RES.] 13 (2010) (China). The current Minister of the Ministry of Finance, Lou Jiwei, once said, in order to promote use of the tax revenue regulation role in energy conservation, emissions reduction, and environmental protection through tax revenue regulations, it is necessary to do so in accordance with international practice by changing the current pollution charge system into the environmental protection tax. Comments on China's Pollution Charges and the Coming Pollution Tax, EAST MONEY, <http://finance.eastmoney.com/news/1371,20140918425165125.html> (last visited Oct. 20, 2014).

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Some scholars suggest that the transformation of a pollution charge into a pollution tax is theoretically (but not practically) possible, because the current tax collection and administration mode cannot provide the required conditions for transformation.⁵⁶ Moreover, the current tax collection system allows taxpayers to declare the tax independently.⁵⁷ Tax authorities often focus on auditing, which will allow enterprises to conceal or underreport pollution emissions in order to avoid taxes.⁵⁸ The tax authorities' retrospective-inspection cannot rely on evidence of taxpayers' pollution. Exhausted gas may have floated away and sewage may have been flushed; it may be impossible to collect such pollutants and calculate the tax payment. However, a pollution charge has more drawbacks than a pollution tax, because it has a weaker compelling force and poor stability. Corruption may also cause problems when a charge works on the basis of personal relationships and not legal regulations.⁵⁹ In addition, the management system of the pollution charge is not strict and the

56. Sun Lifen, *Paiwu Fei Gai Shui Nan Zai Hechu?* [Why it is Hard to Change Pollution Charge System into Pollution Tax?], 10 HUANJING JINGJI [ENVTL. ECON.] 43 (2009) (China).

57. Zhonghua Renming Gongheguo Paiwu Fei Zhengshou Shiyong Guanli Tiaoli [Explanation of the Pollution Charges Instituted by Bureau of Environmental Protection of the People's Republic of China] (promulgated by the Standing Comm. Nat'l People's Cong., May 11, 1984, effective Nov. 1, 1984, amended May 15, 1996), http://www.npc.gov.cn/englishnpc/Law/2007-12/13/conent_1383966.htm. See also *Explanation of the Pollution Charges Instituted by Bureau of Environmental Protection of the People's Republic of China*, CHINA.COM.CN, <http://www.china.com.cn/chinese/huanjing/357110.htm> (last visited Dec. 3, 2014).

58. See Zhonghua Renming Gongheguo Paiwu Fei Zhengshou Shiyong Guanli Tiaoli [Explanation of the Pollution Charges Instituted by Bureau of Environmental Protection of the People's Republic of China] (promulgated by the Standing Comm. Nat'l People's Cong., May 11, 1984, effective Nov. 1, 1984, amended May 15, 1996), http://www.npc.gov.cn/englishnpc/Law/2007-12/13/content_1383966.htm. See also Ding Chengzhang, *Woguo Paiwu Shenbao Dengji Zhidu Yanjiu* [The Research of the Discharge Reporting and Registration System in China], (2013) Soochow University, (Unpublished Master of Law Thesis, Soochow University) (on file with author).

59. Bai Yufei & Wang Guanqun, *Woguo Paiwu Fei Zhidu de Bianqian Licheng ji Gaige Wanshan Cuoshi* [Pollution Charge System: Its Transformation and Reform Improvement] 11 XUESHU YANJIU [ACAD. EXCHANGE] 79 (2011) (China).

discharge fees are not reasonably used.⁶⁰ In contrast, a fixable pollution tax can send an explicit cost signal to enterprises and will stimulate corporations to reduce their intensive use of fossil energy. This could promote clean production and cyclic utilization.

Although there are several obstacles to overcome in order to transform a pollution charge into a pollution tax, when considering aspects, such as social development, economic growth, and environmental protection, the advantages of a pollution tax outweigh a pollution charge. Pollution charge fees in China have similar functions and purposes with foreign environmental taxes. Nowadays, the general variety of environmental taxes imposed by Western countries mainly include an air pollution tax, a water pollution tax, a solid waste tax, a noise tax, a garbage tax, and a registration tax.⁶¹ The air pollution taxes include taxes on CO₂ and sulphur dioxide. They also include hydrocarbon taxes.⁶² In order to reduce the overlap between a pollution tax and a carbon tax, it is necessary to extract the pollution tax that is levied on exhausted gas containing CO₂. It must then be applied to the carbon tax system, which can assist in making significant breakthroughs on the transformation of pollution fees into pollution taxes.

III. LEGAL IMPLEMENTATION MECHANISMS FOR EXECUTING PROCESS OF CARBON TAX

The smooth implementation of a carbon tax requires a good external environment. As one of most popular emission abatement instruments, the carbon tax cannot avoid being influenced by other emission reduction tools, among which carbon emissions trading is a prominent influential factor. Both the

60. Yuan Xianghua, *Paiwu Fei yu Paiwu Shui de Bijiao Yanjiu* [A Comparison Between Pollution Charges and Pollution Tax] 5 *ZHONGGUO RENKOU ZIYUAN YU HUANJING* [CHINA POPULATION, RESOURCES & ENV'T] 41 (2012) (China).

61. Wu Yan & Chen Guoqing, *Guowai de Huanjing Shui jiqi Jiejian—Jianlun Woguo Huanjing Baohu Shui de Goujian* [Foreign Environmental Taxes and Their Enlightenments—the Construction of China's Environmental tax] *SHEWAI SHUIWU* [INT'L TAX'N IN CHINA] 55 (2005) (China).

62. ZHOU HOUYU, *WOGUO HUANJING SHUIFEI DE JINGJI YINGXIANG JI GAIGE YANJIU* [RESEARCH ON ECONOMIC IMPACTS AND REFORM OF CHINA'S ENVIRONMENTAL FEE AND TAX] (2014) (China).

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carbon tax and emissions trading systems address carbon-emitting behaviors.⁶³ If they were forced into the same field at the same time, the polluters would shoulder too much pressure to participate in market competition. Consequently, energy-intensive industries would shrink and this would discourage overall economic growth. The carbon tax is aimed at internalizing a firm's pollution cost into their production cost.⁶⁴ It also stimulates the company to reduce their emissions through the use of clean production and green technology.⁶⁵ When a carbon tax is levied on corporations that have already taken part in the carbon emissions trading system in order to satisfy emissions reduction regulations, the production cost of those companies will undoubtedly increase. This will absolutely lead to strong objections from industry, especially from energy-intensive enterprises. Therefore, in order to overcome the drawbacks mentioned above, it is necessary to establish a balancing mechanism for the carbon tax and emission trading systems, which can safeguard the implementation process of carbon taxation.

A. Comparative Analysis of a Carbon Tax and the Emissions Trading System

Generally, there are three primary methods to manage environmental problems: 1) command and control, 2) market regulation, and 3) self-discipline of enterprises. The combination of these measures is named the Ternary Model.⁶⁶ Both theory and practice have shown that an optimal Ternary Model leads to

63. *Carbon Tax v Cap-and-trade: Which is Better?*, THE GUARDIAN (Jan. 31, 2013), <http://www.theguardian.com/environment/2013/jan/31/carbon-tax-cap-and-trade>.

64. Zhang Jinhua, *Tanshui de Jingji Xiaoying Fenxi* [Analysis on Economic Effects of Carbon Tax] 2 XIANDAI JINGJI TANTAO [MODERN ECON. RES.] 86 (2010).

65. See OECD, *Shuishou, Chuangxin yu Huanjing* [Tax, Innovation and Environment] (Sun Yingchun et al. trans., 2011).

66. Wang Mingyuan, *Qingjie Shengchan Fa de Liyi Jizhi Tanxi* [Analysis on Interests Mechanism of Clean Production Law], 5 ZHENGZHOU DAXUE XUEBAO (ZHEXUE SHEHUI KEXUE BAN) [J. ZHENGZHOU U. (PHIL. & SOC. SCI. ED.)], 43-46 (2007).

comprehensive achievements of economic, social, and environmental benefits.⁶⁷

A carbon tax is one of the command and control measures featured within the administrative compulsory.⁶⁸ From the perspective of an administrative agency, a carbon tax is collected by the State Administration of Taxation, which mainly depends on the authority of governmental powers. While carbon trading more naturally embodies the regulation of the market economy, all transactions must still be run according to the market rule of equivalent exchange.⁶⁹ Both carbon tax and carbon trades are market-based regulatory tools, but comparatively, a carbon tax is much closer to a command and control feature than a carbon trade is. Furthermore, both the carbon tax and emissions trading programs are forced mainly upon large energy companies, and therefore, to successfully implement either, voluntary cooperation and participation of enterprises is required. Based on the different characters of carbon tax and carbon trade, either of them is a perfect tool for greenhouse gas reduction, which leads to the consideration of the complementary combination of these two tools.

In practice, the external costs and benefits of emission abatement are uncertain due to their various and unstable factors. Under a tax, the price of emitting a unit of pollution is set, but the total quantity of emissions is not. Therefore, a tax ensures everyone knows the price being paid (at least for the immediate future) for each unit of carbon dioxide emitted, but uncertainty remains about the actual quantity of emissions. Conversely, cap-and-trade provides certainty about the quantity of emissions (it cannot exceed the cap), but uncertainty about the cost of achieving these reductions.⁷⁰ This uncertainty results in

67. *See generally id.*

68. ARTHUR C. PIGOU, *THE ECONOMICS OF WELFARE* (Macmillan & Co., 4th ed. 1932) (1920), available at <http://www.econlib.org/library/NPDBooks/Pigou/pgEW20.html#>.

69. Carbon trading is established according to the Coase Theorem. *See generally* Ronald H. Coase, *The Problem of Social Cost*, 3 *J. L. & ECON.* 1, 43-44 (1960), available at <http://www.econ.ucsb.edu/~tedb/Courses/UCSBpf/readings/coase.pdf>.

70. *Carbon Tax v Cap-and-trade: Which is Better?*, *supra* note 63.

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different effects on emissions abatement of carbon taxation and an emissions trading program.⁷¹

On the one hand, a carbon tax is blamed for having an uncertain effect on abating emissions. Specifically, the abatement effect is closely related with the tax rate, therefore if the tax rate is high, there will be an emission reduction. As the tax rate increases, the abatement benefit will face marginal diminishing, which is called the “regressive effect” of the carbon tax.⁷² Taxing the carbon content of fuel remedies the market imperfection by incorporating the negative externalities of fossil fuels into prices and decision-making.⁷³ Meanwhile, the adoption of carbon tax breaks and exemptions will most likely aggravate the abatement uncertainty. Under this condition, the carbon emissions trading system can make up for this drawback.⁷⁴ Also, the emissions trading system can relieve emission pressure caused by tax policy, and it can stabilize economic activities. On the other hand, implementing a successful carbon emission trading practice in China does not seem likely due to the lack of well-designed preconditions. For instance, China has not established an effective management and legal system, reliable information disclosure system, and scientific measurement and monitoring network. In this respect, a carbon tax is comparatively more reliable for emissions abatement.⁷⁵ What is more, the emissions trading system in the United States has proved that emissions trading is more prone to cause corruption

71. Liu Mingming, *Tanpaifang yu Tanshui de Bijiao Fenxi* [Comparative Analysis of Carbon Emissions Trading, Carbon Tax, and China's Climate Change Legislation System Mode], 1 *JIANGXI CAIJING DAXUE XUEBAO* [FIN. & ECON. J. JIANGXI U.] 105 (2013).

72. *Why Emissions Trading is More Effective Than a Carbon Tax*, INT'L EMISSIONS TRADING ASS'N, http://www.ieta.org/index.php?option=com_content&view=article&id=207:why-emissions-trad (last visited Sept. 25, 2014).

73. DAVID RICH, CLIMATE CHANGE, CARBON TAXES, AND INTERNATIONAL TRADE: AN ANALYSIS OF THE EMERGING CONFLICT BETWEEN THE KYOTO PROTOCOL AND THE WTO 3 (2004), available at <http://web.archive.org/web/201409131113100/http://are.berkeley.edu/courses/EEP131/fall2006/NotableStudent04/ClimateChangeRich.pdf>.

74. See generally *id.*

75. See generally Zhou Shenglü et al., *Impacts of Carbon Tax Policy on CO₂ Mitigation and Economic Growth in China*, 2 *ADVANCES IN CLIMATE CHANGE RES.* 124 (2011).

and rent-seeking, which makes the trading system full of political complexities.⁷⁶

Above all, neither the independent implementation of a carbon tax, nor the emissions trading system is a perfect solution for CO₂ emissions reduction. The most feasible way is to combine the carbon tax with the emissions trading system to achieve the best results of emissions abatement.

B. Carbon Emissions Trading Practice in China

In order to address climate change and reduce GHG emissions, China has gradually set up a carbon emission trading market and a corresponding policy framework since 2011. At the end of October 2011, the National Development and Reform Commission (NDRC) issued the Notice on the Pilot Implementation of Carbon Emissions Trading, approving five provinces and eight cities to start a carbon emissions trading pilot work. By the early part of 2012, China's carbon emissions pilot program included the following provinces: Beijing, Tianjin, Shanghai, Chongqing, Hubei, Guangdong, and Shenzhen.⁷⁷

In the first half of 2014, with the exception of Chongqing, six pilot areas have completed the permits approval and allocation simultaneously. Exchanges including Chongqing carbon emission trading center are all officially launched, including those six pilot exchanges mentioned above, that have already formally put into use. According to the NDRC, the national official uniform emissions trading platform will be established by the end of 2016.⁷⁸

Although China's carbon emissions trading market is still in its infancy, which leads to a complex policy environment within which carbon taxation must develop. The implementation of the

76. Alex Rice Kerr, *Why We Need a Carbon Tax*, 34 ENVIRONS ENVTL. L. & POL'Y J. 69, 90 (2010).

77. NAT'L DEV. & REFORM COMM'N, NOTICE ON THE PILOT IMPLEMENTATION OF CARBON EMISSIONS TRADING (2011), available at http://www.climatefocus.com/documents/files/piloting_carbon_trading_in_china.pdf.

78. Quanguo Tan Jiaoyi Shichang Mingnian Qidong Guimo Xiangdang Yu Oumeng Tan Shichang Yi Bei (全国碳交易市场明年启动 规模相当于欧盟碳市场一倍) [*The National Official Uniform Emission Trading Platform Will Be Launched Next Year*], TANPAIFANG.COM, <http://www.tanpaifang.com/tanjiaoyi/2015/0510/44353.html> (last visited June 5, 2015).

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carbon tax depends not only on its own collection plan, but also on the carbon emission trading market and its emission abatement effects.

C. The Legal Implementation for Executing the Carbon Tax

Both the carbon tax and the emissions trading system have unique features. The carbon tax and carbon emissions trading system working alone cannot achieve the highest levels of energy conservation and emissions reduction, and therefore, studies of different combinations of the two systems have been conducted.

The first example is the Swiss model. Switzerland has successively introduced both a carbon tax system and a carbon emissions trading system.⁷⁹ It has also adopted an Act, which allows polluting companies to choose to pay the tax or to join an emissions trading system, as long as they can achieve the emissions reduction goals.⁸⁰

This joint implementation of the carbon tax and the emissions trading system is successful because each applies to different energy companies.⁸¹ If a firm voluntarily signs an agreement to reduce emissions with the government it can avoid paying tax.⁸² The Netherlands also uses the Swiss Model. The Netherlands does not collect an energy tax from coal and natural gas users because all coal and natural gas users have already taken part in a carbon emissions trading system. This means that they have already paid to pollute in a reasonable way, and to

79. Vicki Yow, *Carbon Policy in Switzerland*, VICKI YOW, UNIV. OF BRITISH COLUMBIA (Feb. 5, 2013), <http://blogs.ubc.ca/vyow/2013/02/05/carbon-policy/>.

80. See Zhao Jianying, *Ruishi Caiqu Cuoshi Jinyibu Jiangdi CO₂ Paifang* [*The Swiss Takes Measures to Further Reduce Carbon Dioxide Emissions*], JINGJI RIBAO [ECON. DAILY], July 13, 2007, at 7.

81. PETER EGGER & SERGEY NIGAI, ENERGY REFORM IN SWITZERLAND: A QUANTIFICATION OF CARBON TAXATION AND NUCLEAR ENERGY SUBSTITUTION EFFECTS (2013), available at http://www.economiesuisse.ch/de/SiteCollectionDocuments/20130130_Studie_ES2050_def.pdf.

82. *The Swiss Government Presents its CO₂ Law - Target: 10% Reduction in CO₂ Emissions by the Year 2010*, FED. DEP'T OF THE ENV'T, TRANSP., ENERGY & COMM. (Mar. 17, 1997), <http://www.uvek.admin.ch/dokumentation/00474/00492/index.html?lang=en&msg-id=3156>.

require an additional tax would give rise to the problem of double taxation.⁸³

The second system is the British Model, which puts the carbon tax and the emissions trading system in the same field. The UK government has issued a package of measures to respond to climate change by levying a carbon tax and establishing an emissions trading market. In 2008, the UK issued *The Climate Change Act* becoming a pioneer among developed countries.⁸⁴ The government also signed climate change agreements with energy enterprises and promised the energy companies an eighty percent tax discount, on the condition that they achieve the energy savings and emission reduction targets.⁸⁵ Besides the UK, Sweden has also adopted this model to deal with climate change.

Both models aim to achieve energy conservation goals, but in different ways. The former has an advantage in that the company can control the pressure imposed by the carbon tax. In addition, the company has the right to choose any appropriate method from the carbon tax or emissions trading programs to reach the emissions standard.⁸⁶ As a result, companies are more likely to achieve the emissions reduction objective. However, this model's drawback stems from the fact that the carbon tax and the emissions trading systems cannot be applied singularly. In other

83. MINISTRY OF ECON. AFF., AGRIC. & INNOVATION OF THE NETH., ENERGY REPORT 2011, at 40 (2011), available at <http://www.government.nl/government/documents-and-publications/reports/2011/11/01/energy-report-2011.html>.

84. *The UK Climate Change Act*, WORLD WILDLIFE FUND, http://www.wwf.org.uk/what_we_do/tackling_climate_change/how_we_re_tackling_climate_change/our_climate_work_in_the_uk/climate_change_bill_successes/ (last visited Sept. 26, 2014).

85. See ENV'T AGENCY, CLIMATE CHANGE AGREEMENTS OPERATIONS MANUAL 5 (2013), available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/351352/LIT_7911.pdf (“[Climate Change Agreements] are voluntary agreements containing targets to increase energy efficiency and reduce carbon dioxide (CO₂) emissions . . . Industrial operators that enter into and abide by the terms and conditions of their CCA are entitled to a discount on the Climate Change Levy (CCL), a tax added to electricity and fuel bills to encourage operators to reduce the amount of carbon they emit. This discount will also apply to sites where energy is consumed within a European Union Emissions Trading System (EU ETS) installation.”); Ralf Martin et al., *The Impacts of the Climate Change Levy: Evidence From Microdata 4* (London Sch. of Econ. & Pol. Sci., Working Paper No. 917, 2009).

86. EGGER & NIGAI, *supra* note 81, at 26. See also Yow, *supra* note 79.

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words, if the carbon tax was adopted alone, the whole economy will face great pressure caused by the regressive effect of the carbon tax. If the carbon emissions trading system is established without tax preference, the whole energy industry would lose competitiveness and the market itself may have rent-seeking space for corruptions.

Due to pragmatism, it is difficult to build a real carbon emissions trading market based on atmospheric environmental capacity within a short period in China. In order to achieve synergy between a carbon tax and a carbon emissions trading system, it is wise to adopt the UK model to construct a balanced approach by combining a carbon tax with an emissions trading system. Specifically, for those companies that have already adopted an emissions trading system, the government should offer carbon tax preferences, such as tax discounts or other types of tax breaks on the same level. Last but not least, since the basis of most carbon price mechanisms is narrow, gaining a wide range of tax bases is as crucial as lowering operating costs.

IV. LEGAL IMPLEMENTATION FOR A CARBON TAX'S POSITIVE EFFECTS

A. Functions of a Legal Implementation Mechanism for Carbon Tax Effects

The legal implementation mechanism for carbon tax effects is a collection of technical measures for carbon tax collection, administrative institutions for carbon tax management, and incentives, including both rewards and punishments, relating to tax implementation. This mechanism embodies a wide variety of safeguards based on tax introduction and implementation.

To guarantee the positive organizational benefits of carbon taxation, one must construct a professionalized department for tax management and distribute responsibilities to different tax-related departments in a clear way. In the 1920s, one of the new classical economists, Allyn Abbott Young, stated that division of labor and specialization are economic mechanisms that increase benefits accompanying the whole process of economic growth.

Later, his main idea was called the “Young Theorem.”⁸⁷ Specialized division of labor helps increase operational efficiency of the economy and achieves more benefits. Legal cost is the cost on the whole dynamic operational process of law. Specialization also helps to reduce the legal cost and achieve a scientific and efficient operational mechanism for carbon tax management.⁸⁸ According to this principle, the administrative departments responsible for managing carbon taxation should be specialized in order to make a stable organizational guarantee for carbon taxation. All related governments should perform duties and fulfill obligations on the basis of tax laws and regulations. Moreover, building a professional structure of tax agencies is the foundational requirement of constructing an effective carbon tax system, which helps to limit the negative impacts on the economy, saves the gross costs of carbon tax, and reduces CO₂ emissions.

Incentive mechanisms aim to reduce the regressive effect of a carbon tax and maintain the competitiveness of the entire enterprise.⁸⁹ The operation of a carbon tax will aggravate the economic burden of the whole society and increase the operational cost. The implementation of a carbon tax needs to be accompanied by stabilization methods to alleviate the tax burden on society. Most countries that have adopted carbon taxes simultaneously ensure the appropriate incentives for carbon taxation are in place, such as the preferential tax, tax rebates, and tax exemptions.⁹⁰ An effective way to overcome the negative effects of carbon taxation includes pumping the carbon tax revenues back into the national economy at different stages. This

87. Allyn A. Young, *Increasing Returns and Economic Progress*, 38 *ECON. J.* 527, 533 (1928).

88. See generally Qian Hong Dao, *Jingji Fenxi Faxue [Economic Analysis of Law]*, 28 (Law Press, 2005) (1991).

89. *Low Carbon Green Growth Roadmap for Asia and the Pacific: Fact Sheet*, U. NATIONS ECON. AND SOC. COMMISSION FOR ASIA AND THE PAC., <http://www.unescap.org/sites/default/files/23.%20FS-Environmental-tax-reform-and-competitiveness.pdf> (last visited Apr. 6, 2015).

90. See PAUL EKINS & STEFAN SPECK, *COMPETITIVENESS AND ENVIRONMENTAL TAX REFORM 11* (2010), available at http://www.greenfiscalcommission.org.uk/images/uploads/gfcBriefing7_PDF_isbn_v8.pdf. See also Paul Ekins & Stefan Speck, *Competitiveness and Exemptions from Environmental Taxes in Europe*, 13 *ENVTL. & RES. ECON.* 369, 370 (1999).

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also helps achieve positive benefits for both the economy and environment.

The carbon tax punishment system embodies the justice values pursued by the carbon tax legal protection system.⁹¹ The justice values mentioned here are different from the concept of “Tax Justice” in Economics and Ethics. It does not focus on judging the tax itself as “good” or “evil,” but rather on maintaining the interests of the righteous and punishing unfavorable behaviors. A carbon tax is imposed on all actors emitting carbon pollution, establishing the legal obligation for everyone to pay the tax for pollution-inducing behaviors. If anyone refuses to pay the tax it will damage the whole tax system. Therefore, it is necessary to establish punishment systems for tax arrears, tax evasion, and tax fraud. In other words, punishment measures can internalize social costs on violators themselves and protect the equity value for the carbon tax system.⁹²

B. The Current Environmental Tax Management System

Environmental taxes perform both environmental protection and tax adjustment purposes, and therefore, the environmental protection management system and the tax management system should be combined together in a systematic administrative arrangement that manages environmental tax issues. Environmental taxes themselves are a system, requiring the coherent and unified formulation and implementation of individual taxes. Accordingly, all related governmental offices should cooperate closely to make sure the carbon tax policy works successfully.

China has not established a mature environmental tax system. The current tax management system is not perfect yet. Specifically, the Ministry of Environmental Protection is

91. Peng Pengxiang, Zhou Shanchao, Xubaogen, *Qianlun Shuishou Lifa de Gongpingxing Yuanze* [Analysis on Principles of Fairness in Tax Legislation] 9 HUADONG JIAOTONG DAXUE XUEBAO [J. E. CHINA JIAOTONG UNIVERSITY] 88 (1997).

92. Henrik Hammar & Sverker C. Jagers, *What is a Fair CO₂ Tax Increase? On Fair Emission Reductions in the Transport Sector*, 61 ECOLOGICAL ECON. 377, 378-79 (2007).

responsible for environmental protection issues,⁹³ and the State Administration of Taxation is in charge of tax collection and management.⁹⁴ The two departments work independently and seldom communicate with one another and act cohesively, which leads to institutional defects in achieving the green effects of a carbon tax policy, as well as the fiscal benefits. Carbon taxes mainly involve four tasks, which include: designing the tax plan, monitoring and calculating carbon emissions, carbon collection, management, and use of tax revenues, and the punishment of illegal behaviors. The current tax management system cannot satisfy these intended effects because a carbon tax is different from an ordinary fiscal tax item in that it has a strong environmental protection purpose. Therefore, to achieve the positive social outcomes of a carbon tax, one needs to establish organizational safeguard mechanisms for the negative carbon tax effects.

93. See *Environmental Protection Law of the People's Republic of China*, CHINA.ORG, <http://www.china.org.cn/english/environment/34356.htm> (last visited Sept. 26, 2014) (“The competent department of environmental protection administration under the State Council shall conduct unified supervision and management of the environmental protection work throughout the country. The competent departments of environmental protection administration of the local people’s governments at or above the county level shall conduct unified supervision and management of the environmental protection work within areas under their jurisdiction.”).

94. See *Law of the People's Republic of China Concerning the Administration of Tax Collection*, LAWINFOCHINA.COM, http://www.china.org.cn/business/laws_regulations/2007-06/22/content_1214782.htm (last visited Sept. 26, 2014) (“The competent tax departments under the State Council shall be in charge of the administration of tax collection for t the whole country. All the national tax bureaus and local tax bureaus shall respectively administer the tax collection in accordance with the scopes of administration of tax collection stipulated by the State Council. The local people’s government at each level shall strengthen its leadership or coordination in the administration of tax collection within its jurisdiction, support the tax authorities in performance of the duties in accordance with the law, and in the computation of the tax amount by national tariff, and the collection of taxes in accordance with the law. The various departments and entities concerned shall support and assist the tax authorities in the performance of the duties in accordance with the law. No entities or individuals shall impede the tax authorities from performing duties in accordance with the law.”).

C. Institutional Construction

Learning from the experience of foreign countries will help China make better choices when distributing power among tax-related administrative departments. “Most European countries have a long tradition with respect to environmental taxes.”⁹⁵ It is reported that some developed countries like Norway, Denmark, Sweden, and the Netherlands have established Green Tax Reform Commissions since the 1990s, all aiming to manage overall issues with green taxes.⁹⁶ For example, the Netherlands established their Green Tax Commission in the second Congress Parliamentary of the National Environmental Policy Plan in March 1995.⁹⁷ This Commission was broadly entitled and had a huge group of members. It now consists of experts with environmental and accounting knowledge backgrounds, governmental officials, chief executive officers from big enterprises, and several former congress members. The goal of the Commission is to evaluate and develop all tax policies related to environmental quality and sustainable economic development, to adjust the existing tax policy to be more environmentally friendly, and, at the same time, to develop new types of taxes aimed to protect the environment, such as a carbon tax for reducing CO₂ emissions.

By studying the successful practical experiences of European countries, China could establish a scientific administrative system of carbon tax management. Specifically, there should be three aspects as follows.

In a macroscopic view, a management committee responsible for coordinating different departments and dealing with complicated issues comprehensively, akin to the Green Tax Reform Commission in European Countries should be established. This committee should consist of general officers from the four departments, managers from large enterprises,

95. Johan Albrecht, *The Use of Consumption Taxes to Re-launch Green Tax Reforms*, 26 INT'L REV. L. & ECON. 88, 89 (2006).

96. Jean-Philippe Barde, *Green Tax Reforms in OECD Countries: An Overview* 7-8 (Jan. 27, 2004) (unpublished manuscript, available at http://www.cepal.org/dmaah/noticias/discursos/3/14283/03_en.pdf).

97. *Id.*

non-governmental organizations (NGOs), and representatives of the public, experts, and scholars.

In a microcosmic view, carbon taxation in China also depends on the coordination and integration of the four departments including the NDRC, Ministry of Environmental Protection (MEP), Ministry of Finance (MOF), and State Administration of Taxation (SAT). The MEP will be responsible for calculating carbon emissions. The MOF will be responsible for designing and collecting taxes. The NDRC will be responsible for ensuring the consistency of the carbon tax policy into the general economic development.

From the perspective of the meso-level, establishing a supporting database system is important. It works as the technical support platform on which the tax policy, climate change management, and carbon emissions calculations are accomplished systematically. First, such a database can decrease the administrative costs of carbon taxation. Second, it is useful to distinguish clear lines demarcating obligations separating different departments. For example, if the illegal behaviors are caused by poor calculations, then the MEP should take the responsibility to address those problems. If the carbon tax design and collection are mistaken, then it is the MOF who should be punished.⁹⁸ Third, the database system is an open and clear system that protects the informational rights of public groups. Transparency of information processing is critical to achieve democratic supervision and systematic efficiency. It can deter corruption and other illegal behaviors under the supervision of the general public. Moreover, when conditions permit, it is valid to draw lessons from the “carbon emissions information disclosure” system established by developed countries,⁹⁹ which

98. Liu, *supra* note 35, at 423.

99. A system for carbon emissions information disclosure is a critical component for constructing a carbon market. Many developed countries have adopted this system; for example, Canada has established the Facility GHG Emissions Reporting Program, which requires all companies producing more than 50,000 tons of carbon emissions every year to disclose their carbon emission information. See ENV'T CAN., FACILITY GREENHOUSE GAS EMISSIONS REPORTING: OVERVIEW OF REPORTED EMISSIONS 2012, at 1 (2014), available at <http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=8044859A-1>. See generally, e.g., *Greenhouse Gas Reporting Program*, EPA, <http://www.epa.gov/ghgreporting/index.html> (last visited Sept. 27, 2014); *National Greenhouse and Energy*

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requires companies to clearly disclose all information regarding carbon taxes and carbon emissions trading. In effect, this successfully broadens the supervision for carbon taxation and as a result, carbon tax policy can be carried out effectively.

V. CONSTRUCTION FOR A CARBON TARIFF SYSTEM

At the end of June 2009, the Clean Energy and Security Act was approved by the U.S. House of Representatives, but rejected by the U.S. Senate. In May 2010, two senators put forward the draft version of the American Power Act of 2010.¹⁰⁰ Though the two acts were not passed officially, they both put forward the relevant provisions of “carbon tariffs” into United States domestic law.¹⁰¹ The intent to levy tariffs on imports based on their carbon emissions would substantially hit Chinese foreign trade and domestic industrial entities because China ranks first in exporting emission-intensive industrial products. According to a World Bank Report, Chinese industrial products will pay for twenty-six percent of the tariff on average.¹⁰² Consequently, exports will shrink by twenty-one percent.¹⁰³

In other words, a Chinese domestic carbon tax policy can influence the effect of foreign carbon tariffs on the Chinese economy. The essential way to achieve a positive result is to integrate a domestic carbon tax system with international trade rules.

Reporting Act 2007, AUSTRALIAN GOV'T COMLAW, <http://www.comlaw.gov.au/Series/C2007A00175> (last visited Sept. 27, 2014).

100. See generally H.R. 2454, 111th Cong. § 768(a) (1st Sess. 2009). See also S. 1733, 111th Cong. (2nd Sess. 2010). *Preliminary 1Sky Analysis of the Kerry-Lieberman “American Power Act” Discussion Draft*, 1SKY, available at <http://www.1sky.org/files/1Sky-Kerry-Lieberman-APA-Bill-Analysis-May-17-2010.pdf> (last updated May 17, 2010) (the 111th Congress Discussion draft).

101. Gao Xiang, Niu Chen, *Meiguo Qihou Bianhua Lifa Jinzhan ji Qishi* [The Progress and Enlightenment of US Climate Change Legislation] 3 MEIGUO YANJIU [AM. STUD. Q.] 39, 41-42 (2010).

102. See Huang Yinglai, Huang Yinchuan, *Oumeng Guojiang Zheng Tan Guanshui, Zhongguo Zhizao Shoudang Qichong* [The European Union Would Probably Levy Carbon and Chinese Products Could Be the First to Be Affected], NANFANG RIBAO [S. DAILY], Jan. 15, 2010, at A09.

103. See *id.*

There are three main views on the concept of carbon tariffs. First, some scholars believe the carbon tariff is a tariff that is levied on products or services directly.¹⁰⁴ Second, some think the carbon tariff is a Border Tax Adjustment imposed on the importation of a product or service.¹⁰⁵ This opinion is established on the condition of a domestic carbon tax. Third, some experts stress that a carbon tariff is an alternative way to force major emitting countries to purchase allowances from carbon emission trade markets.¹⁰⁶

If a carbon tax policy were formally imposed in China, the pressure caused by carbon tariffs would probably be reduced. To be specific, the positive effects caused by a carbon tax can be drawn as follows.

First, in terms of industrial development, the Chinese domestic carbon tax is levied on foreign products when they are imported into the domestic market.¹⁰⁷ This keeps the competitiveness of the domestic industry and protects the fair value of the carbon tax.¹⁰⁸

Second, a carbon tax is a useful countermeasure for foreign carbon tariffs for two reasons. According to the World Trade Organization's (WTO) principle of "national treatment," a double tax is prohibited.¹⁰⁹ Thus, as long as the domestic carbon tax has

104. See Working Party Report, *Border Tax Adjustments*, L/3464, 4 (Nov. 20, 1970) (adopted Dec. 2, 1970), available at https://www.wto.org/gatt_docs/English/SULPDF/90840088.pdf.

105. See John Whalley, *On the Effectiveness of Carbon-Motivated Border Tax Adjustments* 4-5 (Asia-Pac. Res. & Training Network on Trade, Working Paper, No. 63, 2009), available at <http://www.unescap.org/sites/default/files/AWP%20No.%2063.pdf> (last visited Sept. 23, 2014).

106. XING LI, INTERNATIONAL COORDINATION OF CARBON TAXES 169 (China Fin. Econ. Publ'g House 2010) (1991).

107. Huang Wenxu, *Tan Guanshui de Hefaxing Fenxi* [On the Legitimacy of Carbon Tariff – A Perspective of WTO] 12 SHIDAI FAXUE [PRESENTDAY L. SCI.] 108 (2010).

108. See generally Whalley, *supra* note 105.

109. See generally General Agreement on Trade in Services, art. XVII, Apr. 15, 1994 [hereinafter GATS]; Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, Apr. 15, 1994, 1867 U.N.T.S. 154, available at http://www.wto.org/english/docs_e/legal_e/26-gats_01_e.htm. China has signed agreements to avoid double taxation with nearly ninety-nine countries, including Japan, the United States of America, France, and the United Kingdom. See *Effective Tax Treaties*, ST. ADMIN. OF TAX'N,

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been paid on domestic products, those products should be exempted from foreign carbon tariffs. Additionally, setting a carbon tax for domestic products denies foreign countries the right to levy a tax on those products. The developing Chinese carbon tax is a good example of this popular emission reduction measure.¹¹⁰

Third, in the context of diplomatic negotiations, the introduction of a carbon tax would allow China to carry a greater international presence and afford it more credibility when participating in multi-lateral rule-making. By instituting a carbon tax, the international perception of China as a serious actor in the abatement of greenhouse gas emissions would afford it greater political capital in related global forums.

Finally, in terms of environmental protection, a carbon tariff or a carbon tax could make up for pollution treatment costs caused by the consumption of foreign products in the domestic domain and can prevent carbon leakage from foreign countries, so as to improve air quality.

Although carbon tariffs have caused fierce debates, both in theory and in practice, most scholars believe carbon tariffs could satisfy international trade rules if they are delicately designed.¹¹¹ There is no doubt that carbon tariffs are intended to support domestic carbon taxes and are a part of the domestic environmental tax regime.¹¹² However, carbon tariffs not only need to satisfy domestic laws, but they must also be integrated with international trade rules.¹¹³

<http://www.chinatax.gov.cn/n8136506/n8136593/n8137537/n8687294/8688432.html> (last visited Sept. 23, 2014).

110. See generally H.R. 2454, 111th Cong. § 767(c)(1) (1st Sess. 2009) (as passed by House of Representatives, June 26, 2009).

111. See generally Mark L. Belleville, *The Key Stone in the Carbon Tariff Wall: The Alberta Oil Sands and the Legality of Taxing Imports Based on Their Carbon Footprint*, 43 ENVTL. L. 365, 393-94 (2013).

112. See Wang Hui, *Huangjing Shui Lifa Chuyi* [Analysis of Environmental Tax Legislation], 3 FAXUE JIA [THE JURIST] 65 (2002).

113. In a theoretical study, the legitimacy of carbon tariffs under the WTO framework is a big controversy. Some scholars insist it violates WTO rules of National Treatment and the Most Favored Nation prohibition, and in fact is a kind of trade protection measure. See Zheng Lingyan, *Tan Guanshui de Heguixing ji Helixing Fenxi* [Analysis on Compliance and Rationality of Carbon Tariffs] 12 CAIMAO JINGJI [FIN. & TRADE ECON.] (2011) (discussing how some researchers think the carbon tariff is legal under article 3 and article 20(b), (g)

According to Article XX of the General Agreements on Tariffs and Trade (GATT), no measure can be “applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.”¹¹⁴ Nonetheless, “nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures . . . necessary to protect human, animal or plant life or health.”¹¹⁵ Therefore, the carbon tariff is legitimate under the WTO rules.

According to paragraph 2 of Article II, all carbon tariffs on foreign products should be levied in the same way as to similar domestic products.¹¹⁶ Therefore, the carbon tariff must satisfy at least three conditions: 1) tariffs on imports must be equal to tariffs on similar domestic products, 2) the same products from both domestic and foreign markets must shoulder the same tax burden, and 3) carbon tariffs are only levied at the border.¹¹⁷ Moreover, WTO rules only permit product taxes on final goods, but they do not allow the imposition of a process tax except if the process tax is levied on the goods that constitute inputs to the final products. In other words, if a carbon tariff is imposed on carbon emissions produced in the production process, then the tariff will be regarded as violating the WTO rules.¹¹⁸ Therefore, the Chinese carbon tariff should not be levied on the basis of carbon emissions in the production process. It should be collected

of GATT); see Liangyong, *WTO Kuangjia Xia Tan Guanshui Keneng Yinzhi de Maoyi Zhengduan yu Jiejue* [The Disputes and its Solution of Carbon Tariffs under the WTO Framework] 7 FAXUE [LEGAL SCI.] (2010).

114. General Agreement on Tariffs and Trade 1994 art. XX, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 154, 33 I.L.M. 1153 (1994) [hereinafter GATT 1994], available at http://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_07_e.htm

(“Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures . . . (b) necessary to protect human, animal or plant life or health.”).

115. *Id.*

116. Liangyong, *supra* note 113, at 78.

117. *Id.*

118. *Id.* at 78-79.

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on the basis of the carbon content in products or the carbon emissions created in production.

All in all, three considerations must be evaluated during the adoption of a carbon tariff in China. First, the purpose of the carbon tariff should be to promote environmental protection and greenhouse gas abatement. Second, the carbon tax should be imposed on both imports and exports. Third, the tax must be “equivalent to that paid by domestic producers.”¹¹⁹

VI. CONCLUSION

A carbon tax is an effective tool to reduce carbon emissions. China has already included carbon taxation on its official agenda. The emission reduction benefits of a carbon tax rely not only on a perfect tax collection plan, but also on a series of safeguard mechanisms. The construction of legal implementation mechanisms for the introduction, implementation, and output stages of carbon taxation, is complex and important work.

Constructing an integration mechanism to incorporate a carbon tax into the current tax system will protect the stability of the whole tax system, as well as the economy. The successful introduction of a carbon tax into the current tax system is an excellent opportunity for China to lay the foundation for an effective and cognizable environmental tax.

Both carbon taxes and carbon emission trading systems have their advantages and disadvantages. The best way to combine the two instruments is to establish a balanced selection mechanism and to offer industrial entities the right to choose their favored solution to match their practical needs. The opportunity to choose between a tax or participate in a trading system encourages enterprises to devote themselves to the reduction of carbon emissions, as well as toward the investment of resources for clean technology. The combination of a carbon tax and emissions trading systems will advance the objectives of carbon emissions reduction by achieving an optimal integration of economic benefits, technical progress, and environmental protection.

It is necessary to establish a specialized organization to implement the carbon tax policy and to safeguard its successful

119. Belleville, *supra* note 111, at 375.

operation. There are three steps to construct the management system. First, a comprehensive committee should be established to be responsible for policy making and macro-management. Second, there should be specific departments that are accountable for tax collection, rewards and punishment, monitoring, calculations, and various other duties. It is reasonable for the MEP to promulgate calculation and monitoring standards, for the SAT to collect the tax and to deal with the rewards and punishments, and for the NDRC as well as the MOF to make comprehensive policies and to coordinate with different departments. At a minimum, the improvement of a systematic database is a technical guarantee for all related issues. The database is a platform on which all information relating to the carbon tax can be clearly supervised and be publicly accessible.

As a special form of carbon tax, the carbon tariff should be designed according to WTO rules. Otherwise, it will face the risk of failure.

In conclusion, the construction of the legal implementation mechanisms of carbon taxation is a huge and challenging project, which requires China to have great courage and wisdom to reform and design. As the carbon tax is likely to become a popular practice in the near future, the construction of safeguarding mechanisms must be launched as soon as possible.