

DOI: <https://doi.org/10.5281/zenodo.5999112>

## IMPLEMENTING VOLUNTARY AGREEMENT OF ENERGY CONSERVATION IN CHINA: DILEMMA, REGIME, AND REFORMS

Wen Xuwu, Kashif Imran Zadi & Usman Hameed

### ABSTRACT

Voluntary Agreement of Energy Conservation (VAEC) is a pilot program collaborating with renowned international agencies. It characterizes with contracting parties of local governments, SOE and achieved significant performance, yet its popularization is troubled with dilemmas of imbalanced internal rights, obligations, and external institutional tensions. Implementation of VAEC in China is under Pressurized Regime accompanied by Target Responsibility System and one-vote-veto during the transition. Inherent tensions between VAEC and Pressurized Regime should be coordinated to promote the performance of VAEC, which sheds light on dealing with carbon targets promised by China government for 2030 and 2060, respectively.

**Keywords:** Energy Conservation; Target Responsibility System; Pressurized Regime; Incentive Incompatibility; Regulation Structure; Substantive Involvement; Renewable Energy Revolution.

### I. INTRODUCTION

Internationally, most developed countries attach importance to energy conservation with the voluntary method in the 1970s during the first oil crisis. Since the 1990s, the Voluntary Agreement of Energy Conservation (hereinafter called VAEC) has been most widely used as a non-mandatory energy efficiency measure in the UK, France, Germany, Netherlands, Sweden, United States, Australia, Japan, and other developed countries. It motivates enterprises to save energy and promote energy efficiency with excellent results consciously.<sup>1</sup> The last decade has seen an increase in the use of these voluntary agreements (VA) as supplements to and sometimes replacements for traditional command-and-control regulation. More than 300 VAs

---

**Wen Xuwu** is a Professor of Law at Zhejiang University of Finance & Economics, Hangzhou, China. P.O.Box 310018.Email:1141707209@qq.com.

**Kashif Imran Zadi** is Assistant Professor of Law at the University of Management & Technology, Lahore, Pakistan.P.O.Box 310000.Email: kashif.zadi@umt.edu.pk.

**Usman Hameed** is Associate Professor of Law at the University of Management & Technology, Lahore, Pakistan.P.O.Box 310000.Email: usman.hameed@umt.edu.pk.

**Funding:** The Project Supported by the National Social Science Foundation of China (Project No.19BGJ072) and MOE Humanities and Social Sciences Fund (Project No.17YJA820032).

<sup>1</sup> Yun Jiang, Wenwei Du. Application of Voluntary Agreement of Energy Conservation overseas [J]. International Petroleum Economics, 2 (2005) 13:21-23. (in Chinese)

are in place in the European Union, and their number is still increasing.<sup>2</sup> Furthermore, by the late 1990s, estimates suggested that more than 13,000 companies in the United States were participating in Voluntary Environment Programs, and this number has continued to grow.<sup>3</sup>

China has won brilliant economic growth with soaring energy consumption in the past four decades. Its energy-related carbon dioxide emissions have increased all the way, topping the largest emitter in the world in 2007.<sup>4</sup> In China, energy consumption per million dollars of GDP is 2.4 times higher than the world average, 2.5 times the United States, and 8.7 times Japan.<sup>5</sup> Energy efficiency has increased only by two percentages for eight years since the enactment of the Energy Conservation Law.<sup>6</sup> In response, in 2006, China's central government set a goal in the 11<sup>th</sup> Five-Year-Plan (FYP) of improving energy intensity by 20% by 2010. Meanwhile, these energy conservation and emission reduction are obligatory indicators with legal binding force, not anticipatory indicators depicting the state's development goals.<sup>7</sup> The state also plans to optimize the development of the energy industry, prioritize conservation, and have coal as the basis for realizing pluralistic development.<sup>8</sup> The 14<sup>th</sup> FYP in 2020 set the goal for energy conservation and emission deduction: energy consumption of unit GDP decreased by 13.5%,

---

<sup>2</sup> The 300 VAs share some key characteristics; they are negotiated between public authorities and industry and define collective pollution abatement targets for branches of industry with different patterns concerning the scope and the implementation of agreements. However, in most member states of the European Union, the foundations of environmental policy are still represented by traditional command-and-control regulation, expressed under emission standards and licenses. See Peter Borkey, Francois Leveque, Voluntary approaches for environmental protection in the European Union – a survey. *European Environment*, 10(2000)35–54.

<sup>3</sup> Mazurek, J. (2002). Government-sponsored voluntary programs for firms: An initial survey, in T. Deitz and P. C. Stern, eds., *New Tools for Environmental Protection: Education, Information, and Voluntary Measures*. Washington, DC: National Academy Press, pp. 219–234.

<sup>4</sup> EIA, World energy-related carbon dioxide emissions by region. [http://www.eia.gov/environment/emissions/ghg\\_report/ghg\\_overview.cfm](http://www.eia.gov/environment/emissions/ghg_report/ghg_overview.cfm). Accessed September 1, 2020.

<sup>5</sup> NDRC, Special Planning for Medium and Long-term Energy Conservation. [http://www.ndrc.gov.cn/xwfb/t20050628\\_27571.htm](http://www.ndrc.gov.cn/xwfb/t20050628_27571.htm). Accessed November 18, 2020.

<sup>6</sup> Tiegong Li, Report of the Law Enforcement Inspection Team of the Standing Committee of the National People's Congress on Inspecting the Implementation of the Energy Conservation Law of the People's Republic of China. [http://www.npc.gov.cn/wxzl/wxzl/2006-09/26/content\\_354968.htm](http://www.npc.gov.cn/wxzl/wxzl/2006-09/26/content_354968.htm). Accessed May 12, 2021.

<sup>7</sup> The 11<sup>th</sup> Five-Year-Plan categorizes planning indicators for the first time into two quantitative types based on their attributes, i.e., anticipatory and obligatory. An anticipatory indicator is the country's development goals expected, mainly through autonomous market behavior to achieve. Mandatory indicator further clarifies and strengthens the government's responsibility based on an anticipatory indicator, in which requirements in the fields of public service and interest for local governments and relevant departments of the central government are put forward. The government should ensure the implementation of obligatory indicators through rational public resources and adequate administrative power. See Special Column Three of The Outline of the 11th Five-Year Plan for the National Economic and Social Development of the People's Republic of China. <http://www.npc.gov.cn/npc/c1482/200603/d2c973d3e21c4c5ca05e37ccab251d54.shtml>. Accessed August 23, 2018.

<sup>8</sup> The Outline of the 11th Five-Year Plan for the National Economic and Social Development of the People's Republic of China. <http://www.npc.gov.cn/npc/c1482/200603/d2c973d3e21c4c5ca05e37ccab251d54.shtml>. Accessed August 23, 2018.

and carbon dioxide emissions decreased by 18%.<sup>9</sup> Like its predecessor, these indicators are involuntary commitments government makes that should be decomposed for implementation by the provinces, autonomous regions, and municipalities.<sup>10</sup> China's central government has promised a highly strengthened scenario for carbon emissions in 2030 and 2060, respectively.

Energy conservation is implemented through command-control in shortage economy during China's planned economy. The transition to a market-oriented Economy changes relations between central and local governments, and the latter operates in a progressively decentralized context. Central government authority is limited in using the national mobilization system and command-control administrative methods during planned economy. The quota system cannot be enforced as it was in the past.<sup>11</sup> Under a decentralized context, local governments gain more autonomous capacity and power in dealing with economic and social management during the transition period. Accordingly, China promulgated several laws on energy conservation and carbon emission reduction, accompanied by various encouragement measures. These raise three fundamental problems. Firstly, what kind of rights and obligations are formed in pilot VAEC; secondly, how is the regulatory regime and how the dilemma is brought about in terms of internal and external factors; lastly, from what aspects reforms can be made to fill the gap between difficulties and regime.

Therefore, the remaining parts of this article are organized as follows: Part II describes pilot VAEC and its popularization, analyzing the internal imbalance of rights and obligations among contracting parties. Part III depicts regulatory structure, primarily laws, policies, and measures that framed the Pressurized Regime, implemented through governments at various levels, leading to external tensions. Part IV discusses coordinating tensions between VAEC and Pressurized Regime to improve future implementation. The last part concludes.

## **II. Pilot VAEC and dilemma**

VAEC refers to the agreement between government and energy consumption units or industry organizations to manage energy conservation to achieve energy conservation and emission reduction and increase energy efficiency.<sup>12</sup> Dual factors push China to approach the new method of VAEC. One is the grim energy conservation and emission reduction situation since the 1990s. The other is the success of voluntary agreements in developed countries.

### *A. Pilot VAEC and its popularization*

VAEC as an energy management method was introduced into China's high energy-consuming township enterprises for energy reservation and green House gas (GHG) reduction. In 1995, Global Environmental Fund (GEF) ratified the pilot project Energy Conservation and GHG

---

<sup>9</sup> The 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Long-term Objectives for 2035. <http://www.npc.gov.cn/npc/kgfb/202103/bf13037b5d2d4a398652ed253cea8eb1.shtml>. Accessed March 20, 2021.

<sup>10</sup> *Ibid.*

<sup>11</sup> Urda Eichhorst, Daniel Bongardt. Towards cooperative policy approaches in China—Drivers for voluntary agreements on industrial energy efficiency in Nanjing, *Energy Policy* 37 (2009) 1855–1865.

<sup>12</sup> State Standardization Administration, General Technical Rules for Voluntary Agreement of Energy Conservation. <http://c.gb688.cn/bzgk/gb/showGb?type=online&hcno=F6C311B84078085C1547EEFF6BB28A0>. Accessed December 12, 2019.

Emissions Reduction in Chinese Township and Village Enterprises. It aimed to catalyze demonstration, replication, and scaling up activities in four industrial township enterprises, i.e., brick, cement, foundry, and coking, to expand the use of energy-efficient technologies to reduce greenhouse gas emissions. The use of formal voluntary agreements between the enterprises, local government agencies, and relevant industry associations proved very effective.<sup>13</sup> The township enterprises made explicit commitments to local government to save energy and reduce emission; meanwhile, the government gave preferential policies in taxation, interest subsidies, financing, R&D, and other aspects according to actual local situations. Over 100 township enterprises in participation annually saved 451,000 tons of standard coal energy and reduced carbon dioxide emissions by 1,126,000 tons.<sup>14</sup>

From 2002 through 2005, the VAEC disseminated gradually to Shandong, Shanghai, Ningbo, Nanjing, other cities and provinces, and dozens of enterprises. Especially the two pilot state-owned iron and steel groups Jinan Steel and Laiwu Steel in Shandong Province, with the close collaboration of the former State Economic and Trade Commission (SETC), reached major indicators set by voluntary agreements. In March 2008, the Nanjing Environment Protection Bureau (EPB) signed voluntary agreements and three state-owned enterprises from the steel, cement, and power generation sector. Energy intensity targets are all in the range of a 3–5% reduction by 2009 over a 2007 baseline. Nanjing EPB also offered incentives to firms, such as preferential access to Environmental Fund, Environment-Friendly Enterprise status, and simplified procedures for receiving new environmental permits.<sup>15</sup>

The success of the pilot agreements in Shandong presages success development of VAEC at the local level. An expansion of the pilot projects is planned to promote voluntary agreements between public service institutions such as schools or hospitals with corresponding energy efficiency departments. Both NDRC and the Ministry of Environmental Protection are very interested in the performance of pilot projects in Nanjing. Ministry of Environment Protection (MEP) plans to expand it, and NDRC has indicated an interest in including voluntary agreements at the national level into its next energy conservation policy package.<sup>16</sup>

Unfortunately, the VAEC, after several years of pilot implementation, has not been widely promoted and accepted as it was in some developed countries. Its application is still quite limited with uncertainties. First, the application sector is restricted to the industrial, especially heavy industry. Second, areas and provinces that apply VAEC are few till now. Some provinces

---

<sup>13</sup> National Center for Science and Technology Evaluation of the People's Republic of China, The Catalytic Role of the GEF, Case Study: Energy Conservation and GHG Emissions Reduction in Chinese Township and Village Enterprises in China. [http://www.thegef.org/gef/sites/thegef.org/files/documents/OPS4-TD3-GEF\\_Catalytic\\_Role\\_Evaluation\\_in\\_China-NCSTE-20090717.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/OPS4-TD3-GEF_Catalytic_Role_Evaluation_in_China-NCSTE-20090717.pdf). Accessed December 14, 2017.

<sup>14</sup> Xinhua Net, China's township enterprise, reduces CO<sub>2</sub> emissions by 1.1 tons annually. [http://www.gov.cn/jrzq/2007-05/17/content\\_617877.htm](http://www.gov.cn/jrzq/2007-05/17/content_617877.htm). Accessed December 4, 2020.

<sup>15</sup> Urda Eichhorst, Daniel Bongardt, Towards cooperative policy approaches in China— Drivers for voluntary agreements on industrial energy efficiency in Nanjing, *Energy Policy*, 37 (2009) 1855–1865.

<sup>16</sup> China Voluntary Agreement Briefing, Shandong Province plans to expand the scope of voluntary agreements on energy efficiency (in Chinese). China Voluntary Agreement Briefing, 11(2006), at pp. 5.

in which heavy industries concentrate, such as Shanxi and Hebei, could be involved.<sup>17</sup> Thirdly, the development is prolonged, especially with building sectors.<sup>18</sup> For example, up to the present, no attempt has been tried for VAEC in the building sector. However, China's building sector consumes over 30% of the nation's total energy each year and is heavily dependent on the country's abundant yet polluting coal resources. Energy conservation service companies are not paid much attention, and their enthusiasm is not brought into play.<sup>19</sup> The above three problems are external dilemmas related directly to internal dilemmas, demonstrating that VAEC departs from traditional contacts based on more apparent agreement, balanced bargaining, and strict breaching rules.

### *B. Ambiguity of incentives among participants*

Generally speaking, three contracting parties to VAEC, including local governments, usually represented by Economic Committee or its functional agency, enterprises, and a third party designated by an industrial association or verification institution, agreed upon the rights and obligations of Agreement after voluntary consultation. Such contractual arrangement reflects the internal incentive-constraint mechanism.

In the Agreement, the enterprise takes initiative promises to achieve particular energy-saving or environmental objectives. The local government will provide specific support and incentives and assessment of implementation by a third party. However, rights and obligations written in legal texts are more virtual and soft constraints than explicit expressions—for example, both Model Text.<sup>20</sup> The actual agreements are vague in their language, sometimes using potential benefits or contributing to the benefits to replacing legal rights. When signing a contract, the contracting enterprise knows what it may obtain is possible interests or help to get claims after completing its obligations. It could be hoped that fulfillment of the agreement is of high risk or even significant risk when considering soft constraints on non-fulfillment. It did happen that in iron and steel companies' examples in Shandong province, the provincial government should have provided incentives such as technical information dissemination, financial support, and commendation as contracted. However, stipulations on these items were quite general and not presented in the agreements. The only incentive executed is a recommendation in the following three years. The two companies were nominated as The Pilot Enterprise of Energy Efficiency Voluntary Agreement in China by the Shandong Economic and Trade Commission (SETC). Local media reported this event widely.<sup>21</sup> The lack of incentives provided by the governments

---

<sup>17</sup> Yuan Hu. Implementation of voluntary agreements for energy efficiency in China, *Energy Policy*, 35 (2007) 5541–5548.

<sup>18</sup> Jihong Zhan, Yonghong Huang, Research on incentive mechanism of voluntary agreement of energy conservation in building sectors. APEC Conference on Low-carbon Towns and Physical Energy Storage, May 25-26, 2013, Changsha, China. [http://www.apec2013.net/upload/fck/20130814200805\\_fck.pdf](http://www.apec2013.net/upload/fck/20130814200805_fck.pdf). Assessed December 16, 2020.

<sup>19</sup> *Ibid.*

<sup>20</sup> Both Shandong Province and China Energy Conservation Association developed Model Text of Voluntary Agreement of Energy Conservation. The city of Ningbo signed the same VAEC with ten key energy-consuming enterprises under its jurisdiction.

<sup>21</sup> Yuan Hu. Implementation of voluntary agreements for energy efficiency in China, *Energy Policy*. 35 (2007) 5541–5548.

at different levels is a crucial problem. If we want to include more enterprises in voluntary agreement programs, incentives must be studied and applied.<sup>22</sup>

### *C. Imbalanced rights and obligations*

Table 1 lists in comparison form rights and obligations of each contracting party to VAEC. An overall view of the VAEC manifests that the Agreement is obligation-oriented, reflecting requirements for energy conservation of public interests. The local governments intend to exert more obligations and responsibilities through VAEC on contracting enterprises than rights and interests. The latter may enjoy easy to understand since local governments take primary responsibility to push forward the energy conservation undertakings. Local governments traditionally excel at command-control methods, mainly the Target Responsibility System, to achieve their goals politically and economically. Local governments have some "sticks" of required forms to compel enterprises to abide by, such as compulsory "power cuts" and "closure, stoppage, merger, and transfer." Secondly, Service-oriented governments, whether in administrative philosophy or practice, are under-development in China. Therefore the point is whether and when local governments and their officials may decide to take energy conservation into serious consideration.

Comparison between rights (or expectable interests) and obligations also shows the incompatibility of incentives among contracting parties. Taking social responsibilities should be advocated for granted, yet it should coordinate internal incentives and external constraints. Though local governments are expected to take primary responsibilities to manage energy conservation for public interests inconsistent with fulfillment of their functions, it should not be overlooked that contracting enterprises, as reasonable market participants pursuing their economic interests, usually put first profits calculation. It has been traditionally assumed that firms attempt to maximize expected profits.<sup>23</sup>

The contract theory of economics tells that a self-enforcing contract needs balancing rights (benefits) and obligations (costs) of each contracting party. A self-enforcing agreement is possible if the expected future gains from adherence exceed the current gain from violating the contract. In a self-enforcing agreement, the only penalty imposed on the violator is stopping the agreement. A potential violator compares the current gain from a violation with the sacrifice of future gains to respond to his recent breach. These future gains would accrue to him if he remained faithful to the agreement. He chooses the more profitable alternative. It follows that the parties to a self-enforcing agreement do not expect any violations of it.<sup>24</sup> Conflict comes up when incentives in the agreement lag behind constraints ones and institutes imbalance structures of rights. Incompatibility of incentives may lead to mysterious fulfillment of the agreement and moral hazard. Enterprises may enter these agreements and cooperate only symbolically rather than undertake substantive actions to reduce their environmental impact.<sup>25</sup> When the motivation of each contracting party to fulfill VAEC goes down, excursion and execution of external constraints of default responsibilities become crucial for the protection

---

<sup>22</sup> *Ibid.*

<sup>23</sup> Alan Schwartz, Robert E. Scott, Contract Theory and the Limits of Contract Law, The Yale Law Journal. 113 (2003) 541-619.

<sup>24</sup> L. G. Telser, A Theory of Self-Enforcing Agreements, The Journal of Business, 53(1980) 27-44.

<sup>25</sup> Jorge Rivera, Peter de Leon. Is Greener Whiter? Voluntary Environmental Performance of Western Ski Areas, The Policy Studies Journal, 32(2004) 417-437.

of public interests. However, design flaw hinders effective functioning of default rules in this respect, which needs to explore breach rules specifically.

**Table 1 Rights & Obligations of Contracting Parties to VEAC**

	<i>Rights (or Expectable interests)</i>	<i>Obligations</i>
Government	<ul style="list-style-type: none"> <li>●Achieve transformation of government functions and national goals of energy conservation under non-direct control</li> <li>●Try to explore new mechanisms for energy conservation management adaptable to the market economy, lay the foundation for government decisions in the future</li> <li>●Save high costs in formulating and implementing laws and regulations to reduce government expenditure</li> </ul>	<ul style="list-style-type: none"> <li>●Formulate and enforce local preferential policies; examine and approve the proposal for energy conservation</li> <li>●Assess and review interim and final reports; coordinate energy-saving loans and other financing activities</li> <li>●Grant awards and publicize enterprise's experience in energy conservation</li> </ul>
Enterprise	<ul style="list-style-type: none"> <li>●Avoid more stringent laws and regulations for improving energy efficiency from the government</li> <li>●Conserve energy, protect the environment, reduce production costs and maximize profits;</li> <li>●Establish better corporate image, expand market share, increase the value of intangible assets</li> <li>●Enjoy priority access to support of the government's policy</li> </ul>	<ul style="list-style-type: none"> <li>●Make out and implement specific energy efficiency programs and energy-saving projects</li> <li>●Submitted written interim and final reports</li> <li>●Carry out energy audit according to requirements of government</li> </ul>
Third-Party(if any)	<ul style="list-style-type: none"> <li>●Position itself faster and more accurately</li> <li>●Play the role of the bridge during economies transition</li> <li>●Exert and enhance professional superiority in energy-saving technology&amp; information</li> <li>●Accumulate research experience for policy mechanisms</li> <li>●Strengthen international cooperation and exchanges</li> </ul>	<ul style="list-style-type: none"> <li>●Coordinate relations between government and enterprises</li> <li>●Responsible for assessment of energy-using and energy audit</li> <li>●Issue assessment and audit report to the government</li> <li>●Provide technical and information services; popularize energy-saving technology and experience</li> </ul>

*Sources:*

(1)Model Texts for Pilot Program of Shandong Province on Voluntary Agreement of Energy Conservation.

(2)Ningbo Municipal Energy Conservation Association, field research materials.

(3) General Technical Rules for Voluntary Agreement of Energy Conservation.

#### *D. Zero-loss breach of agreement*

When a contract is made, there is always a possibility that one of the parties to it will fail to perform. If this happens, the defaulting party often must pay the other party damages. The amount is determined in several ways, by law or regulation, trade practice or custom, by a previous and explicit agreement of the parties' device.<sup>26</sup> The decision about breach depends on the damage measure in an obvious way: a party will default if and only if his position, given that he does so and pays damages, will be better than that if he performs.<sup>27</sup>Cost-benefit analysis

<sup>26</sup> Steven Shavell, Damage measures for breach of contract, *The Bell Journal of Economics*. 11 (1980) 466-490.

<sup>27</sup> *Ibid.*

shows that the primary motive for a firm's participation in VA is economical.<sup>28</sup> Because most VAs lack explicit measures to sanction firms that pursue only symbolic cooperative strategies or even identify such firms.<sup>29</sup> Contracting parties write a legally not enforceable agreement. A party will want to terminate a long-term contract when the opportunity cost of continued performance comes to exceed the gain.<sup>30</sup>

Although no one is certain of its effectiveness or power in enforcing contractual performance, there is certainly a strong relationship between regard for one's reputation and the decision not to breach a contract. The most vital market force is probably reputation. It is reasonable to hypothesize that the desire to avoid a negative reputation can induce some promisors to undertake a breach only where the benefits of that breach exceed the costs, including the costs of a tarnished reputation.<sup>31</sup>

Liabilities or damages for breach of VAEC have an inherent flaw. Firstly, look to the contracting enterprises. When an enterprise fails to fulfill its obligations stipulated in VAEC, it must refund the preferential treatments granted by the government or is no longer entitled to a series of national and local preferential policies. That is to say, even if the enterprise breach the agreement, it does not lose any economic loss at all, which may lead to avoiding supervision or punishment. Secondly, look to a violation of the contract by the local government. When the local government fails to fulfill obligations hereunder, the enterprise can opt-out of the execution of the agreement or terminate the agreement. By so doing, local governments suffer no loss if it does not provide policy support or other preferential treatment. Finally, when the third party fails to fulfill its obligations, both the enterprise and government have the right to withdraw the agreement's implementation and terminate the contract.

Considering the long period during which many changes in energy conservation technologies, energy demand, investment, negotiation costs, regulatory regime, and contracting parties' intent, the agreement may become incomplete. When incompleteness exists in a specific relational contract, it is necessary to access the court for adjudication disputes. However, the courts' ability to pretty contracts partly turns on the cause of incompleteness. However, a contract is prey.<sup>32</sup> To resolve the possible dispute arising from or related to fulfillment of the agreement, there should be at least a framework arrangement for dispute resolution. Under an incompletely specified contract, damage measures can induce parties to behave in a way that approximates what they would have explicitly agreed upon under a fully fixed agreement. Moreover, it is argued on familiar lines that because it is often costly or impossible to make

---

<sup>28</sup> Lenway SA, Rehbein K. 1991. Leaders, followers, and free riders: an empirical test of variation in corporate political involvement. *Academy of Management Journal*, 34(1991): 893–905.

<sup>29</sup> Magali A. Delmas, Maria J. Montes-Sancho, Voluntary Agreements to improve environmental quality: symbolic and substantive cooperation, *Strategic Management Journal*, 31(2010) 575–601.

<sup>30</sup> Alan Schwartz, Relational Contracts in the Courts: An Analysis of Incomplete Agreements and Judicial Strategies, *The Journal of Legal Studies*. 21 (1992) 271-318.

<sup>31</sup> Thomas S. Ulen, The Efficiency of Specific Performance: Toward a Unified Theory of Contract Remedies, *Michigan Law Review*, 83 (1984) 341-403.

<sup>32</sup> Alan Schwartz, Relational Contracts in the Courts: An Analysis of Incomplete Agreements and Judicial Strategies, *The Journal of Legal Studies*. 21 (1992) 271-318.



contractual provisions for contingencies at a very detailed level, there is an evident need for such substitutes for well-specified contingent contracts as are afforded by damage measures.<sup>33</sup>

In general, existing VAEC deals with breaching the agreement in a simplified way, neither considering the specific form of breach nor the actual situation under which breach occurs nor designing appropriate remedies for violation of the deal. Withdrawing from the agreement to terminate the contract is almost entirely free from loss. The autonomy of each party to the VAEC is fully respected on the surface. However, in the case of a breach, all contracting parties can "vote with feet" to achieve zero loss. In essence, the suffering of the public interest in energy conservation is inevitable. Since liability for breach of VAEC per se are designed to be soft and lack the solid binding force to all contracting parties so that they cannot count on seriously, external institutional factors make very sense in pressing and pushing to implement such agreement, which entails a turn to external research of broader regulations and regime.

### **III. Pressurized Regime on VAEC**

Since no policy instrument exists in a vacuum, VAEC is also embedded in a broader regulatory framework and is influenced by policy culture. They interact with existing policy instruments both within and outside the energy sector and are further influenced by other factors.<sup>34</sup> Energy conservation in China relates to laws, regulations, policies, and ministerial rules that form a Pressurized Regime inclusive of both procedural and substantive factors.

#### *A. Laws regulating energy conservation*

China has promulgated laws and statutes at state and local levels, mainly Electricity Law (1995, Cleaner Production Promotion Law (2002), Renewable Energy Law (2006), Circular Economy Promotion Law (2008), with comprehensive Energy Law underway. Energy conservation is emphasized principally in these laws.<sup>35</sup>

Article 12.2 of the Constitution stipulates that the state strictly thrift and opposes waste. Article 26 of the Constitution specifies that the state protects and improves the living environment and ecological environment and prevents pollution and other public hazards. These constitutional norms are of supreme legal force regarding energy-saving and environmental protection.<sup>36</sup>

---

<sup>33</sup>Steven Shavell, *Damage measures for breach of contract*, *The Bell Journal of Economics*. 2 (1980) 466-490.

<sup>34</sup>Urda Eichhorst, Daniel Bongardt, *Towards cooperative policy approaches in China— Drivers for voluntary agreements on industrial energy efficiency in Nanjing*, *Energy Policy* 37 (2009) 1855–1865.

<sup>35</sup>Not all local agencies are empowered to make laws and regulations. According to the Legislation Law of PRC, which was amended on March 15, 2015, local legislative power was expanded to all municipalities divided into districts. The people's congress of the city and its standing committee of a city divided into districts may, according to the specific situation and the actual needs of the city, formulate local laws and regulations on urban and rural construction and management, environmental protection, historical and cultural protection, without conflict with the constitution, laws, administrative regulations and local regulations of the province and autonomous regions. See Article 72 of Legislation Law of PRC.

<sup>36</sup>The constitution is the state's fundamental law and has the highest legal authority. The people of all nationalities, state organs, armed forces, political parties and public organizations, and enterprises and institutions must take the constitution as the basic standard of conduct. No laws, administrative or local regulations may contravene the constitution. See Article 5 of the Constitution of PRC.

Law on Cleaner Production Promotion was adopted in 2003 and provided several new policy instruments to improve energy efficiency and reduce pollution emission. Voluntary agreements for energy saving and pollution reduction among the latest instruments have been revolutionary.<sup>37</sup> Article 29 of this Law states that, after enterprises comply with the national or local emission standard, enterprises can voluntarily sign agreements with local economic and trade authorities for further energy saving and pollution emission reduction. The local economic and trade officials and the local environmental protection authorities should publicize the environmental performances of the enterprises concerned with the major local media. This is a significant step toward establishing new energy conservation and pollution prevention policy system, although it is still a very general stipulation and far from perfect.

China enacted its Energy Conservation Law in 1997 to promote energy conservation in the whole society, improve energy utilization and economic performance, protect the environment, ensure national socio-economic development, and satisfy the requirements of people's livelihood.<sup>38</sup> In its legal texts, energy conservation means the strengthening of energy utilization administration, adoption of measures that are technologically feasible, economically rational, and bearable to the environment and society, reduction in losses and waste in all links from energy production to consumption, and more efficient and rational utilization of energy resources.<sup>39</sup> The law was modified in 2007 so that other sectors, including buildings, public agencies, and transportation, can be regulated in the same law as the industry sector. It is in this particular statute that VAEC was first mentioned very briefly. Article 66.2 reads: The State uses policies like taxation, price to support the promotion of such energy conservation measures as Demand Side Management of Electricity, Contractual Energy Management, and Voluntary Agreement of Energy Conservation. This law recognized and laid the legal status for VAEC.

Two points are stipulated in Energy Conservation Law on how local governments manage energy conservation. First, the state implements an energy-saving Target Responsibility System and related evaluation system, the completion of which is considered when appraising the performances of local people's government and its responsible person. Provinces, autonomous regions, and municipalities shall report annually to the state of their fulfillment of energy-saving goals.<sup>40</sup> Second, the law sets up sound management in terms of energy-saving administration for local governments, laying down that local people's governments above the county level shall strengthen the leadership in energy conservation, deploy, coordinate, supervise, inspect and promote energy conservation.<sup>41</sup> Considering geographical broadness and enormous diversities in economic development, local governments, and their component departments take primary responsibilities and are in charge of local undertakings of energy conservation.

Many national rules and policies are promulgated for executing or coordinating energy conservation except for much more local counterparts. It is worth noting that China is

---

<sup>37</sup> Yuan Hu. Implementation of voluntary agreements for energy efficiency in China, *Energy Policy*, 35 (2007) 5541–5548.

<sup>38</sup> Article 1 of Energy Conservation Law of PRC.

<sup>39</sup> Article 3 of Energy Conservation Law of PRC.

<sup>40</sup> Article 6 of Energy Conservation Law of PRC.

<sup>41</sup> Article 11 of Energy Conservation Law of PRC.

characterized by a top-down policy approach and strong prevailing hierarchies in institutions. Coercive institutional regulatory pressure is a crucial factor positively associated with voluntary environmental programs.<sup>42</sup> Meanwhile, despite comprehensive regulation of energy efficiency and pollution control in China, the execution of these policies is generally weak. The mysterious character of most of China's laws and diverging interests between local governments (economic development) and Environmental Protection Bureaus (environmental protection) often hamper the effectiveness of environmental management at the local level.<sup>43</sup>

### *B. Command-control approach in Pressurized Regime*

Since the execution of reform and opening-up policy in 1979, China has entered into an extended transition period by "touching the stone to go through rivers." Such transition brings a significant change in the relations between central and local governments. The central government's capacity is limited due to poorly coordinated institutions and inadequate financial resources.<sup>44</sup> The institutional comparison shows a positive relationship between the strength of fiscal incentives faced by lower-level governments and local economic performance. Countries with strong financial incentives for local governments are expected to experience healthier local business development, while those with low fiscal incentives are expected to experience the opposite. More substantial fiscal incentives are associated with faster growth of non-state enterprises and more significant reform in state-owned enterprises.<sup>45</sup>

During China's planned economy in shortage of materials, energy conservation is an integral part of enterprises mostly owned and controlled by the state. Reducing energy consumption is emphasized by all governments striding forward with heavy industrialization. In the 1980s, the government had direct control over state-owned enterprises (SOEs), which were the predominant form of industry in China. During this period, energy conservation management features command-control administration with the same strain as the planned economic system. Main conservation activities during planned economy are energy supply plan, energy quota for enterprises, strengthening of energy management in enterprises, technological innovation, advocacy of energy conservation, and technical services.<sup>46</sup> Production quotas proved an extremely effective way to cut energy use.<sup>47</sup> The government established a series of policy instruments to encourage energy saving. Industry and most commodities were still largely subject to government planning, and the government could use administrative tools such as quotas and targets to significant effect. Thus, quotas for energy consumption could be set for

---

<sup>42</sup> Jorge Rivera and Peter de Leon, Is Greener Whiter? Voluntary Environmental Performance of Western Ski Areas, *The Policy Studies Journal*, 32(2004) 417-437.

<sup>43</sup> Philip Andrews-Speed, China's ongoing energy efficiency drive: Origins, progress, and prospects, *Energy Policy*, 37 (2009) 1331-1344.

<sup>44</sup> Sulan Chen, Juha I. Uitto, Governing Marine and Coastal Environment in China: Building Local Government Capacity Through International Cooperation, *China Environment Series: Issue 6*, 67-80.

<sup>45</sup> Hehui Jin, Yingyi Qian, T. Barry R. Weingast. Regional decentralization and fiscal incentives: Federalism, Chinese style, *Journal of Public Economics*, 89 (2005) 1719-1742.

<sup>46</sup> Hai Xu, View Energy Conservation Agreement as effective management system [J]. *Environmental Protection*, 22 (2007) : 31-32.

<sup>47</sup> Nan Zhou, Mark D. Levine, Lynn Price, Overview of current energy-efficiency policies in China [J]. *Energy Policy*, 38 (2010) 6439-6452.

industries and individual plants, and the cost of energy that exceeded the quota was two to three times high. The government established technology centers for energy conservation throughout the country to provide information and training, and low-interest loans and tax credits were available for investment in energy conservation. As a result, the level of investment in energy conservation rose rapidly from 1981 to 1995. The low elasticity from 1980 to 2001 was primarily due to technological upgrading and energy conservation, which was stimulated by energy rationing in a command economy with minimal energy supplies. The change to an elasticity at or over one after China's entry to the WTO in 2001 reflects the shift from a command economy to market structures after the reforms of the late 1990s and lower attention to energy conservation programs and rapid expansion of energy-intensive industries.<sup>48</sup>

The Five-Year-Plan (FYP) has been adopted to coordinate national economic construction since 1953, in which vital financial goals and projects are selected as leading guidelines. The national FYP, though not law per se, is passed by the National People's Congress with the country's highest authority, whose contents can be legally binding. Furthermore, because of the long-term tradition of Rule of Man, many people think that national plans and planning enjoy a higher binding force than laws, viewing laws as tools and instruments implementing national strategies.<sup>49</sup> The 6<sup>th</sup> FYP put forwards: dramatically reduce material consumption, especially energy consumption, to coordinate means of production with the production of consumption; there should be plans to focus on the technological transformation of existing enterprises, to carry out extensive energy-saving technological innovation as the main target of the activity, while focusing the necessary funds to strengthen the construction of energy, transportation, and other key programs. Energy conservation is emphasized for the first time in the national economic plan until the latest 14<sup>th</sup> FYP.

### *C. Defining Pressurized Regime*

A pressurized regime means local political organization takes quantitative decomposition methods and materialized evaluation system to achieve economic catch-up and indicators designated by higher authorities.<sup>50</sup> The regime formed during China's transition to a market-oriented economy has three structural factors: (1) quantitative task decomposition. After making socio-economic development goals or receiving a mission designated by the upper government, the Party committees and governments shall, through signing Letters of Responsibility, quantify and decompose these for completion within the stipulated time by the lower layer of organizations and individuals. (2) Participation mechanism of various departments in the problem-solving. The standard form is that various party committees and government departments shall focus on the work plan and priorities for arrangement. (3) Materialized multi-level evaluation system. In addition to the traditional spirit awards of granting honorary titles, materialized encouragements such as job promotion, wage raises,

---

<sup>48</sup> Peter Sheehan, Fiona Sun, Energy use in China: interpreting changing trends and future direction.

[https://www.researchgate.net/publication/228641911\\_Energy\\_Use\\_in\\_China\\_Interpreting\\_Changing\\_Trends\\_and\\_Future\\_Directions](https://www.researchgate.net/publication/228641911_Energy_Use_in_China_Interpreting_Changing_Trends_and_Future_Directions). Assessed October 22, 2020.

<sup>49</sup> Zhiping Le, Analysis of legal effect of energy-saving and emission reduction targets [J]. Environmental Protection, 6(2007): 30-33.

<sup>50</sup> Jingben Rong, Zhiyuan Cui, etc., Transformation from Pressurized Regime to the system of democratic cooperation—Political System Reform in Counties and Townships, Central Compilation and Translation Press, 1998, pp.28. (in Chinese)

bonuses, and other incentives are provided to those who complete tasks. The one-vote-veto system punishes those who do not complete essential tasks.<sup>51</sup> Under Pressurized Regime, the operation of a specific target will go through the procedures of target setting, distribution, completion, and evaluation in sequence.<sup>52</sup>

There are two kinds of incentives in the Pressurized Regime. The positive one is a combination of the Target Responsibility System and materialized evaluation system that pushes local government to try hard to execute tasks assigned, while the negative one is by the one-vote-veto system. After decades of successful operation in local economic growth and social order, Pressurized Regime is transplanted to manage other social spheres step by step, including energy conservation management. The following exemplifies the operation of the Pressurized Regime on energy conservation through target responsibility systems and related programs governments take.

#### *D. Executing Pressurized Regime on energy conservation*

The development of the Pressurized Regime on energy conservation goes through four different yet interrelated steps. The first step is target setting. Senior leaders in China recognized that success in pursuit of energy intensity improvements would require the deep involvement of the Chinese Communist Party and the government. The November 2005 communique of the Politburo placed the 20% target as a significant national priority.<sup>53</sup> In 11<sup>th</sup> FYP, State Council, Central government of China, laid out a mandatory 20% reduction target in energy consumption per unit of GDP from 2006 through 2010. The second step is target distribution. In 2006, the State Council approved an indicator scheme submitted by the National Development and Reform Committee (NDRC), reiterating that the target is of legal binding force and governments of provinces, autonomous regions, and municipalities must strictly enforce to ensure completion of the target. According to the scheme, twenty provinces were given a 20% energy-saving target, and the other seven provinces were given targets ranging from 12% to 30%.<sup>54</sup> The State Council further required local governments to decompose provincial targets to lower-level cities and counties. The third step is execution by local governments at various levels and the high energy-consuming enterprises. The State Council requires governments at the provincial level to include the target in their provincial FYP planning and annual plan by breaking it down into lower-level governments, related sectors, and key enterprises. The last step is to evaluate. Bureau of Statistics, NDRC, and Energy Office develop evaluation index system, publish energy consumption indicator and assess the implementation of energy-saving; meanwhile, in conjunction with the Ministry of Supervision, undertake serious examination and assessment over the completion of the target.<sup>55</sup> Achievement of the energy-saving targets is part of the provincial government evaluation system. The responsible government leaders are evaluated annually on whether or not the targets under their jurisdiction have been achieved.

---

<sup>51</sup> Xuedong Yang, Pressurized Regime: A Brief History of A Concept [J], Social Science, 11(2012)4-11 (in Chinese).

<sup>52</sup> *Ibid* 50.

<sup>53</sup> *Ibid* 43.

<sup>54</sup> State Council, Reply to Plan on Regional Targets of Energy Consumption Reduction During the Eleventh Five-Year. [http://www.sdpc.gov.cn/fzgh/zcfg/t20061106\\_91998.htm](http://www.sdpc.gov.cn/fzgh/zcfg/t20061106_91998.htm). Assessed December 21, 2018.

<sup>55</sup> *Ibid*.

Top-1000 Enterprises Energy Saving Program (Top-1000 Program) is an ambitious action that involves mandatory top-down to meet energy-saving targets. The industrial sector accounts for 70% of China's total energy consumption and plays an essential role in energy conservation. High energy-consuming enterprises in the critical consumption industries are critical in energy consumption.<sup>56</sup> To achieve the 20% target, NDRC and other central government agencies launched the ambitious Top-1000 Enterprises Energy Saving Program (Top-1000 program).<sup>57</sup> The government guided enterprises to significantly improve their energy efficiency to reach advanced domestic production. Some enterprises attain either international or industry-advanced levels of energy intensity. The program further stipulated that the Top-1000 enterprises should achieve energy saving of 100 million tons of coal equivalent (Mtce) between 2006 and 2010.<sup>58</sup> NDRC then signed Responsibility Documents for the Top-1000 enterprise targets with 30 provincial-level governments who in turn signed energy-efficiency target contracts that include energy-saving amounts with each of the enterprises under their jurisdiction.<sup>59</sup> NDRC also signed the agreement with some central enterprises and provided national training programs for officials and managers. NDRC formulated in 2007 three schemes and methods for energy-saving statistics, monitoring and evaluation. One-vote-veto is applied to leading bodies and cadres of the provincial government and responsible personnel of SOE.<sup>60</sup> Most enterprises established a multi-level target responsibility system and task each branch, various aspects, and positions based on annual target decomposition. Enterprises set up evaluation systems, linking economic benefits to the energy-saving performance of carders and workers that formed effective incentive-restraint mechanisms.<sup>61</sup>

The provincial government and its leading carder that do not meet the targets will be deprived of annual rewards or honorary titles. Within one month after the evaluation announcement, they shall make a written report to the State Council proposing rectification measures. Leaders of SOE that do not meet the targets will be criticized and cannot participate in the annual awards or honorary titles.<sup>62</sup> Meanwhile, one-vote-veto is applied to both provincial government, its leaders, and responsible person in charge of SOE.<sup>63</sup> Small and medium-sized enterprises in the coal and electricity sectors were required to establish a database starting in 2008; local

---

<sup>56</sup>NDRC, etc. Implementation Plan of Top-1000 Enterprise Energy-saving Program. [https://www.ndrc.gov.cn/xxgk/zcfb/tz/200604/t20060414\\_965934.html](https://www.ndrc.gov.cn/xxgk/zcfb/tz/200604/t20060414_965934.html). Assessed December 22, 2018.

<sup>57</sup>Top-1000 enterprises refer to the nine critical energy-consuming industrial enterprises with independent accounting in iron and steel, nonferrous metals, coal, electricity, oil and petrochemical, chemical, building materials, textiles, and paper manufacturing, total 1008. The total energy consumption of each of these enterprises in 2004 reached or above 180 a thousand tons of standard coal. NDRC puts forward the name list of Top-1000 enterprises in conjunction with the National Bureau of Statistics and determines after a check by provinces, autonomous regions, or municipalities. See NDRC, Notice On Issuance of Implementing the Top-1000 Enterprises Energy-saving Program.

[https://www.ndrc.gov.cn/fggz/hjzy/jnhnx/200604/t20060413\\_1135174.html](https://www.ndrc.gov.cn/fggz/hjzy/jnhnx/200604/t20060413_1135174.html). Assessed January 19, 2020.

<sup>58</sup>*Ibid* 56.

<sup>59</sup>*Ibid* 43.

<sup>60</sup> State Council. State Council Notification on Approval of Schemes and Methods to Implement Energy Saving Statistics Monitoring and Evaluation. [http://www.gov.cn/zwgg/2007-11/23/content\\_813617.htm](http://www.gov.cn/zwgg/2007-11/23/content_813617.htm). Assessed July 1, 2020.

<sup>61</sup> NDRC, Announcement. [http://www.sdpc.gov.cn/zcfb/zcfbgg/2009gg/t20091124\\_315017.htm](http://www.sdpc.gov.cn/zcfb/zcfbgg/2009gg/t20091124_315017.htm).

<sup>62</sup> *Ibid* 60.

<sup>63</sup> *Ibid*.

government bodies must annually evaluate the largest energy-consuming enterprises in their jurisdiction. The energy conservation performance is submitted to an evaluation team comprised of officials from the NDRC, the Ministry of Supervision, the Ministry of Personnel, and several other departments. Failure to pass the evaluation means suspension of the jurisdiction's high-energy consumption projects, followed by an investigation by supervision agencies.<sup>64</sup>

Under Pressurized Regime, governments, their agencies at all levels, and enterprises actively fulfill targets, with series support of laws, regulations, rules, policies, and technique standards. The result is that overall these Top-1000 enterprises exceeded assigned targets two years ahead of schedule, contributing to a great degree national energy conservation target. By the end of the 11<sup>th</sup> FYP, the 881 enterprises saved 165.49 M, etc., of which 866 completed targets and 15 failed.<sup>65</sup>

It is noted that before the expiry of the national 11<sup>th</sup> FYP, mandatory administrative measures are taken in some areas, including varying degrees of power cuts to residents and enterprises.<sup>66</sup> Several provinces stop electricity supply to hospitals and traffic lights.<sup>67</sup> “Launching large power plants while suppressing small ones” and strengthening the target responsibility system by local governments are widely used to achieve emission reduction.<sup>68</sup> The mandatory administrative shutdown took place in considerable numbers time and again.<sup>69</sup> Market-oriented incentive mechanisms are ignored or even replaced by compulsory command-control measures with significant side effects on enterprises. Based on institutional inertia and path dependency, we have to take dilemmas and Pressurized Regimes into consideration to reflect practical experiences for further actions.

---

<sup>64</sup> Nan Zhou, Mark D. Levine, Lynn Price, Overview of current energy-efficiency policies in China [J], Energy Policy, 38 (2010) 6439–6452.

<sup>65</sup> NDRC, Announcement. [http://www.gov.cn/zwggk/2011-12/27/content\\_2030819.htm](http://www.gov.cn/zwggk/2011-12/27/content_2030819.htm). Assessed June 30, 2020.

<sup>66</sup> To complete energy-saving targets, some local governments take extreme mandatory power cuts to limit the necessary electricity needs of citizens and enterprises. Recognizing the harms and complaints brought forward through power cuts by local governments, central governments and their organs issued an emergency notice requiring stopping such wrongdoings. See General Office, Emergency Notice on Insurance of Normal Power Needs of Residents and Power Generation Order. [http://www.gov.cn/zwggk/2010-11/23/content\\_1751457.htm](http://www.gov.cn/zwggk/2010-11/23/content_1751457.htm). Assessed July 1, 2020.

<sup>67</sup>After the announcement of the progress barometer by NDRC for the energy-saving target of the first half in 2011, energy-saving situations in eight provinces are bleak and on the first level warning level. Power cuts to residents, hospitals, and traffic lights came up in several provinces. National Energy Administration, The National Development and Reform Commission (NDRC) announced the barometer of energy conservation targets in the first half of the year. The situation in the eight regions is tight.[http://www.nea.gov.cn/2011-08/16/c\\_131052128.htm](http://www.nea.gov.cn/2011-08/16/c_131052128.htm). Assessed December 21, 2020.

<sup>68</sup> “Launching large power plants while suppressing small ones” means linking building new lagers power projects to the shutdown of minor thermal power. The purpose is to reduce energy consumption and pollution emissions and compress backward production capacity.

<sup>69</sup> “Closure, stoppage, merger and transfer” are taken to reduce energy consumption and air pollution in large numbers during the 11th FYP. The measures are adopted by Jiangxi, Hunan, Zhejiang, Guangdong, Anhui, Chongqing, Shanghai, etc., and critical watersheds such as Poyang Lake, Taihu Lake. <http://www.sdpc.gov.cn/search/searchresultnew.jsp?page=2&searchword=%B9%D8%CD%A3%B2%A2%D7%AA&channelid=75009&recordsperpage=20&searchword1=%B9%D8%CD%A3%B2%A2%D7%AA&siteid=>. Assessed July 20, 2019.

## **IV. Reforms: coordinate tensions between VAEC and Pressurized Regime**

Except for internal design flaws regarding imbalance between rights and obligations, incentive incompatibility, soft constraints over breach of contract, and remedial measures for contracting parties to VAEC, external tensions between VAEC and Pressurized Regime should not be ignored improvement is made in the future. Although designing a renewed VAEC with clear legal language, balanced incentive, and guaranteed breach rules is essential, dealing with external dilemmas between VAEC and the Pressurized Regime that are inherent with clear-cut natures is inevitable for any progress in China's New Era.

### *A. Avoid Selective implementation from local governments*

Though VAEC and Top-1000 programs are implemented to save energy and reduce emissions under Pressurized Regime, their institutional designs make the two mechanisms noticeable. Although based on experience gained over three years pilot program with two iron and steel mills in Shandong Province that relied heavily on European experiences with voluntary agreement programs<sup>70</sup>, the Top-1000 program achieved superior performance. With strong leadership from central to local governments, strict concrete statistics, supervision, and supporting policies and regulations, the results of the Top-1000 program are encouraging. By contrast, VAEC is implemented slowly and narrowly. Different pressures and degrees thereof decide the selective implementation of local governments to a large extent.

Local government behavior depends on their economic priorities and the nature of their relations with enterprises.<sup>71</sup>The key challenge to implementing policies in China stems from its decentralized governance system. Although national policies on issues such as energy-saving are drafted in Beijing, their implementation is left to sub-national governments that often have other goals, such as economic growth. With their evolving into quasi-enterprises due to their independent economic interests, local governments often conflict with the central government's economic policies, especially environmental protection and renewable energy development.<sup>72</sup> Since local governments enjoy discretion in carrying out varied targets, they prioritize those with higher values in Cadre Evaluation Index System.<sup>73</sup> The evaluation result is used for promotion, demotion, dismissal, reward, and punishment of officials. Those activities that stand for higher scores in evaluation are directly economy-related and quantified with strict hard binding with one-vote-veto.<sup>74</sup> As a result, energy conservation and environmental protection are in an unfavorable position for a very long period in that they cannot add to GDP or even deduct GDP. Although one-vote-veto steps into the evaluation index in many places, its implementation is soft, and there is a rare case for which official is

<sup>70</sup> Lynn Price, Xuejun Wang, Jiang Yun. The challenge of reducing the energy consumption of the Top-1000 largest industrial enterprises in China. *Energy Policy*, 38 (2010): 6485–6498.

<sup>71</sup> Yeling Tang, *Transparency without Democracy: The Unexpected Effects of China's Environmental Disclosure Policy*, Governance: An International Journal of Policy, Administration, and Institutions, 2012 Wiley Periodicals.

<sup>72</sup> Wang Mingyuan, Issues related to implementing China's energy law: analysis of the Energy Conservation Law and the Renewable Energy Law as an example. *Vermont Journal of Environmental Law*, 8 (2007) 225:225-250.

<sup>73</sup> Cadre Evaluation Index System is designed to comprehensively assess officials in five areas: ethics, ability, diligence, achievements, and integrity.

<sup>74</sup> Ran Ran, Political Incentives and Local Environmental Governance under a Pressurized System, *Comparative Economic and Society*, 3(2013):111-118. (in Chinese)



accountable. Studies have shown that environmental indicators in various provinces and cities are "often the dummy targets" that make little sense in assessing official's comprehensive performances over the past several years.<sup>75</sup> Other prominent measures on which local governments depend are urgent compulsory power cuts before annual inspection triggered by the central government, especially before the expiration of the target set in 11<sup>th</sup> FYP. Such "military order type" means are effective in the short run but harm production and people's daily lives.<sup>76</sup> Implementing mandatory targets with robust approaches would be the optimum option for local governments when energy conservation becomes political pressure accompanied by strict evaluation.

### *B. Incentivize differentiated inclination among enterprises*

Unlike the Top-1000 program with definite mandatory targets and strict negative evaluation of one-vote-veto, VAEC faces indefinite non-mandatory targets and a self-enforcing system. Before concluding such an agreement and in the hope of participation from enterprises, local governments try to persuade enterprises with policy support or other forms of incentives without a complete supervision mechanism. Incompatibility of incentives restricts the popularization of VAEC. For those Top-1000 enterprises and key energy-consuming enterprises, whether or not signing VAEC does not influence their completion of the energy-saving target under the Target Responsibility System. They have no second option but to comply. If VAEC cannot provide them with reasonable incentives, it will not be easy to guide those enterprises to sign more stringent or higher targets than Target Responsibility System.<sup>77</sup> Moreover, theoretically speaking, contracting enterprises of VAEC are of broader outreach, not limited to SOE under the profound influence of governments.<sup>78</sup>

The distinction should be made between government and SOE and between government and private enterprises. Although the power distance between government and SOE remains significant, local governments' connections to and influence private enterprises are weaker. Their interaction is characterized by a certain degree of distrust, which many EPBs try to

---

<sup>75</sup> Even though One-vote-veto System plays a vital role in some spheres and has achieved good results, for example, economic administration, family plan, and social security management, there is an appeal to stop misuse of the one-vote-veto system to other social management spheres, especially spreading to investment attraction, petition, Satisfaction of the masses, suggesting that the system should be perfected. See Xinjin Paper [http://epaper.bjnews.com.cn/html/2013-11/04/content\\_475442.htm?div=-1](http://epaper.bjnews.com.cn/html/2013-11/04/content_475442.htm?div=-1). Assessed July 3, 2020.

<sup>76</sup> Xinhua Net, Difficulty in completing this year's emission reduction targets sets off power cuts tidal. [http://news.xinhuanet.com/fortune/2011-12/14/c\\_122418069.htm](http://news.xinhuanet.com/fortune/2011-12/14/c_122418069.htm).

<sup>77</sup> MA Li, LI Huimin, QI Ye, Comparative Analysis of Energy Conservation Target Responsibility System and Voluntary Energy Conservation Agreements, *China Population, Resources and Environment*, 6(2011):95-101.

<sup>78</sup> Controls and influences of governments on state economies are far more profound than on the private economy. It is reflected in the General Guideline of the Constitution of China, of which Article 7 reads: The state economy as the socialist economy under ownership by the whole people is the leading force in the national economy. The state ensures the consolidation and growth of the state economy. On the constitutional status of the private Economy, Article 11 reads: Individual Economy, private economy, and other non-public Economy is an essential component of the socialist market economy within the limits of laws. The state protects the lawful rights and interests of the individual, private, and non-public economies. According to law, the state shall encourage, support, and guide non-public economic development while supervising and managing the non-public economy.

overcome through a consensual approach.<sup>79</sup> Private enterprises are on the fringe of political pressure and under much fewer effects of governments.

### *C. Push substantive involvement with the reputation*

Another significant driving force for enterprises participating in VAEC is improving their image or reputation. Particularly in China, where social status (*mianzi*) is effective in social networks, reputation can be regarded as social currency. For example, a report on corporate social responsibility in China revealed that reputation was the number one driver for companies to publish sustainability reports, another voluntary approach to environmental management.<sup>80</sup> Priority in being awarded the Environment-Friendly Enterprise status stimulates driver in the VA pilot action in Nanjing.<sup>81</sup>

The role of reputation in a self-enforcing agreement should be based on whether or not a party has breached a contract and the probability of exposure. Under informal enforcement, the harmed party unilaterally decides that breach has occurred and then carries out actions that harm the reputation of the breaching party. However, for the reputation mechanism to work well, it must be the case that the parties do not behave opportunistically.<sup>82</sup> Informal enforcement, involving a loss of reputation and future access to the market for any party that defaults on a contract, may often be a better alternative. It is well appreciated that for transactions of modest value, parties may rely upon informal reputation mechanisms for enforcement rather than the legal system.<sup>83</sup> Usually, local governments or their responsible agencies keep informal or formal good relationships so that no contracting party would like to challenge. Most simply, if parties are to continue the relationship, this may call for many adjustments of rights and duties over time. The risk of losing the connection usually is a potent sanction.<sup>84</sup>

Whatever enterprises think or conduct, pressures of energy conservation and emission reduction from policies, regulations, laws, and statutes under which they operate are tightened everywhere during the construction of Beauty China in the New Era. Transforming external pressures into internal dynamics while maintaining an agreeable reputation entails cooperation among governments, enterprises, other stakeholders, and civil society. Since China enjoys vast territory with significant regional differences and its market-oriented transition would take a reasonably long time, there is no one-size-fits-all measure for guaranteed involvement from all types of enterprises. Policymakers need to adjust the design of VAECs for factors that trigger

---

<sup>79</sup> *Ibid* 43.

<sup>80</sup> Keith Weigelt, Colin Camerer. Reputation and Corporate Strategy: A Review of Recent Theory and Applications, Wiley

Online Library. <http://onlinelibrary.wiley.com/doi/10.1002/smj.4250090505/full>.

<sup>81</sup> *Ibid* 43.

<sup>82</sup> W. Bentley MacLeod, Reputations, Relationships, and Contract Enforcement, *Journal of Economic Literature*, Vol XLV (September 2007), pp. 595-628.

<sup>83</sup> W. Bentley MacLeod, Reputations, Relationships, and Contract Enforcement, *Journal of Economic Literature*, Vol XLV (September 2007), pp. 595-628.

<sup>84</sup> Stewart Macaulay, The real and the paper deal: empirical pictures of relationships, complexity and the urge for simple, transparent rules. *The Modern Law Review*, 1 (2003)66:44-79.

substantive or symbolic cooperation.<sup>85</sup> Image or reputation does influence acts of enterprises, yet more attention should be paid to profit-seeking by enterprises, especially private ones that are confronted with disadvantageous fierce market competitions.<sup>86</sup> Noting this, local governments are suggested to consider what potential participants need and how to meet these reasonable needs in case of symbolic or even no involvement.

#### *D. Set off the revolution of renewable energy*

VAEC aims at high energy-consuming enterprises that traditionally rely on nonrenewable fossil energy. Renewable energy can contribute to both energy supply and carbon emission. The development and exploration of renewable energy have become a worldwide trend to meet the demands of energy structure transition and tackle climate change.<sup>87</sup> China has achieved remarkable progress in terms of the development of renewable energy. At the end of 2019, China dominated the world's generation of installed capacity and consumption of renewable energy, with wind power capacity accounting for one-third of the world's total and PV power capacity accounting for one-fourth. Biomass power and geothermal power capacity have also been growing in recent years.<sup>88</sup> The 13th FYP requires at least 15% of energy to be supplied from renewable energy fuels, with multiply factors pushing the expansion of renewable energy on the fast track, including the national plan for renewable energy, government subsidies, grid parity incentives, special fund, priority for interconnection, feed-in-tariff, guaranteed consumption, foreign investment policy, etc.<sup>89</sup>

According to White Paper released by State Council in December 2020, coal consumption accounts for 57.7% of total energy consumption in 2019, a decrease of 10.8 percentage points from 2012. Non-fossil energy accounted for 15.3 percent of total energy consumption, up 5.6 percentage points against 2012. China has reached the target of raising the share of non-fossil energy to 15 percent in total energy consumption by 2020.<sup>90</sup> In the 14th FYP, China reiterates advancing the energy revolution and building a clean, low-carbon, safe and efficient energy system. China will accelerate the development of non-fossil energy sources, promote

---

<sup>85</sup> Magali A. Delmas, Maria J. Montes-Sancho, Voluntary agreements to improve environmental quality: symbolic and substantive cooperation, *Strategic Management Journal*, 6(2010)31: 575–601.

<sup>86</sup> Private enterprises are disadvantageous in several respects as loaning, land use rights, market entry, etc. Inequality between private and public enterprises enlarges so that the central government promulgates supporting policies to leverage such a situation several times, including two regulations on the non-public economy.

<sup>87</sup> Weidong Yang, Problems and Adjustments of Renewable Energy Legislation in China, *Journal of East Asia and International Law*, 2(2017)10: 339-356.

<sup>88</sup> End of The Year Wrap-Up: Five Figures Showed China's Renewable Energy Growth In 2019.

<https://www.renewableenergyworld.com/2019/12/01/end-of-the-year-wrap-up-five-figures-show-chinas-renewable-energy-growth-in-2019/#gref>. Accessed June 3, 2021.

<sup>89</sup> Wind And Solar Energy In China Issues And Regulatory

Regime. <https://advance.lexis.com/document/?pdmfid=1000516&crd=6858d722-30d3-48d7-b986-d4fe5478b306&pddocfullpath=%2Fshared%2Fdocument%2Flegalnews%2Furn%3AcontentItem%3A6011-WOX1-JCF5-V03R-00000-00&pdcontentcomponentid=149522&pdteaserkey=sr4&pditab=allpods&ecomp=ydgpk&earg=sr4&prid=c4384519-8939-4314-b016-c7891d4c5873>. Accessed June 3, 2021.

<sup>90</sup> State Council, Energy in China's New

Era. <http://www.scio.gov.cn/zfbps/32832/Document/1695135/1695135.htm>. Assessed June 3, 2021.

centralized and distributed energy sources, and vigorously increase the scale of wind power and photovoltaic power generation, aiming to increase non-fossil energy sources to about 20% of the total energy consumption.<sup>91</sup>As China progresses towards the carbon neutrality goal of peaking carbon emissions before 2030 and reaching carbon neutrality in 2060, renewable energy supply will redouble in recent years.

Above all, redoubling renewable energy means revolution on energy regime in that renewable energy developments require flexible and cooperative regime among government, enterprises, and other stakeholders. A systemic energy transition from fossil fuels to renewables is far from being completed, and the energy system continues to co-evolve with technological innovation and societal development.<sup>92</sup>President Xi Jinping was required to promote revolution on energy regime and open up the fast track of energy development in 2014. China should restore the attributes of energy commodities, build a market structure and market system for effective competition, form a mechanism that determines energy prices mainly by the market, change the way the government supervises energy, and establish a sound rule of law for energy.<sup>93</sup>

## **V. Conclusion**

Compared with dilemmas during pilot implementation of VAEC, local governments are more capable of enforcing targets of energy conservation under Pressurized Regime with Target Responsibility System and government program. For VAEC to act as a broader effective energy-saving mechanism in the future, it is necessary to arrange internal contractual rights in a definite balanced way, which means common but differentiated contractual binding for specific participants from SOE, private enterprises, and stakeholders. On the other hand, remedial measures for breach of agreements as a guarantee for effective implementation, whether self-enforcing or by a third party, need to be clearly stated in the deal in case of opportunism that may lead to uncertainty for fulfillment.

Tensions between VAEC and Pressurized Regime are inevitable in that the former requires cooperative self-enforcing governance while the latter demonstrates characteristics of top-down command-control. Unlike voluntary agreements in developed countries that emerged as an alternative means for improving environmental conditions outside the regulatory process, VAEC in China is a supplement to, not substitute for, mandatory approaches. In the field of social management, the effectiveness of the Pressurized Regime is that it can amass short-term resources to solve significant problems and overcome resistance from government departments to reduce the uncertainty of the situation.<sup>94</sup> Since local government must keep closer relationships with enterprises under their jurisdiction and take primary responsibilities to govern local environmental problems, it should recognize that VAEC is not a mandatory mechanism that may bring immediate effects to energy conservation. However, VAEC can generate economic benefits to enterprises in the long run. The conflicting role of each

---

<sup>91</sup> The 14th Five-Year Plan for the National Economic and Social Development of the People's Republic of China and the Outline of the Long-term Objectives for 2035.[http://www.gov.cn/xinwen/2021-03/13/content\\_5592681.htm](http://www.gov.cn/xinwen/2021-03/13/content_5592681.htm).

<sup>92</sup> Jukka Simila, Niko Soininen & Ellis Pauku, Towards sustainable blue energy production: an analysis of legal transformative and adaptive capacity, *Journal of Energy & Natural Resources Law*, (2021)1-19.

<sup>93</sup> Xi Jinping: Actively promote the revolution in China's energy production and consumption.[http://www.xinhuanet.com/politics/2014-06/13/c\\_1111139161.htm](http://www.xinhuanet.com/politics/2014-06/13/c_1111139161.htm). Assessed April 5, 2021.

<sup>94</sup> Xuedong Yang. Pressurized System: A Brief History of A Concept, *Social Science*, 2 (2012)11:4-11 (in Chinese).

participant oppresses them to give up voluntary cooperation in energy conservation. Though China has accumulated lots of experiences in developing the economy through "crossing a river by touching the stones" in the past four decades, more rational acts must be taken as soon as possible to control Pandora's box of climate change. The positive revolution of renewable energy and strict negative constraints on fossil energy with the rule of law will effectively overcome VAEC and Pressurized Regime dilemmas.