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**Working Paper**

## Energy efficiency in China: The local bundling of interests and policies

Frankfurt School - Working Paper Series, No. 151

**Provided in Cooperation with:**

Frankfurt School of Finance and Management

*Suggested Citation:* Kostka, Genia; Hobbs, William (2010) : Energy efficiency in China: The local bundling of interests and policies, Frankfurt School - Working Paper Series, No. 151, Frankfurt School of Finance & Management, Frankfurt a. M.

This Version is available at:

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**Frankfurt School – Working Paper Series**

**No. 151**

**Energy Efficiency in China:  
The Local Bundling of Interests  
and Policies**

by Genia Kostka and William Hobbs

September 2010



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## Abstract

With the end of China's 11th Five-Year Plan approaching, this paper analyzes sub-national governments' implementation strategies to meet national energy efficiency targets. Previous research focuses on the way governance practices and decision-making structures shape implementation outcomes, yet very little attention has been given to what strategies local leaders actually employ to bridge national priorities with local interests. To illustrate how leaders work politically, this paper highlights specific implementation *mechanisms* officials use to strengthen formal incentives and create effective informal incentives to fulfill their energy efficiency mandates. The analysis is drawn from fifty-three interviews conducted in June and July 2010 in Shanxi, a major coal-producing and energy-intensive province. Findings suggest that local government leaders conform to the national directives by 'bundling' the energy efficiency policy with policies of more pressing local importance or by 'bundling' with the interests of groups with significant political influence. Ultimately, officials take national policies and then frame them in ways that give them legitimacy at the local level.

Key words: China, local state, policy implementation, energy policy, governance

JEL classification: D73, D78, O18, R58, Q48, Q58

ISSN: 14369753

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\* The authors are thankful for receiving funding from the AusAID Leadership Program: Development Leaders, Elites and Coalitions ([www.LPDLEC.org](http://www.LPDLEC.org)). The authors also wish to thank Shi Xiangying, Tom Harrison, Adrian Leftwich, Christine Polzin, Sarah Eaton, Kyoung Shin, Kerry Lee, and Jessica Gordon for helpful feedback on earlier drafts of this paper.

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## 1 Introduction

Secure energy resources and their intelligent use are keys to China's continued, rapid development. The country recently overtook the United States as the world's largest energy consumer according to an International Energy Agency (IEA) estimate<sup>1</sup> and, as China's citizens become wealthier, concerns about obtaining greater consumption capability and energy consumption growth will continue into the coming decades.<sup>2</sup> Taking into account China's population size and the considerable gap between China's energy consumption per capita and that of developed economies, this trend has important implications for China and the world. The prioritization of issues by the international community and China may vary (there is much more emphasis on climate change and pollution outside of China, while concerns about economic growth and energy security take precedence domestically), but China's energy policy will increasingly find itself on the top of national and international policy agendas. At the local, sub-national level, however, socioeconomic and political benefits from decreased local energy consumption and decreased emissions is not a foregone conclusion and energy efficiency may receive less priority. While sustained economic growth based on continued availability of energy resources and environmental pollution problems are important issues, local governments may be more able and willing to manage short-term, local problems such as enterprise cash flow difficulties, attracting foreign and domestic investment and social stability issues. These problems are more self-contained and manageable, with clear and direct local benefits, than issues with significant collective action components like energy policy implementation. This collective action problem is particularly severe in China due to the cellular, 'honeycomb' governance structure<sup>3</sup> and the resulting competition between localities and variations in local level policy implementation.

This paper thus examines the practices of local governments implementing energy efficiency policy at the sub-national level. The main hypothesis is that local governments conform to the national administrative directives by 'bundling' the energy consumption management policy with policies of greater or more pressing importance for the local government or by 'bundling' with the interests of groups with significant political influence. Officials often opt to 'kill two (or more) birds with one stone' by choosing implementation pathways that balance local priorities with national targets and are more likely to faithfully implement energy conservation policies and projects which also address salient business, economic, safety, pollution, and political legitimacy interests and concerns in their local constituency. Local governments are less likely to strictly implement energy conservation policies without these 'policy-bundling' benefits and employ foot-dragging measures such as seeking loopholes in the implementation guidelines.

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<sup>1</sup> International Energy Agency (IEA), "China Overtakes the United States to Become World's Largest Energy Consumer," July 20, 2010, available at [http://www.iea.org/index\\_info.asp?id=1479](http://www.iea.org/index_info.asp?id=1479).

<sup>2</sup> For an in depth analysis of China's human development and energy use trends, see Renmin University of China, Program of Energy and Climate Economics. *China and a Sustainable Future: Towards a Low Carbon Economy and Society*. (Beijing: China Translation and Publishing Corporation, 2010). Vivienne Shue, *The Reach of the State: Sketches of the Chinese Body Politic* (Stanford: Stanford University Press, 1988).

Shanxi province is chosen as the research region as it is well-known for its coal production and large proportion of energy-intensive enterprises. In the 11<sup>th</sup> Five-Year Plan, Shanxi was assigned an energy intensity,<sup>4</sup> reduction goal of 25 percent compared to the 2005 level, which is higher than the national target of 20 percent. Figures provided in 2007, 2008 and 2009 Shanxi Provincial Economic Commission reports show the province as being on track to meet or surpass its 11<sup>th</sup> Five Year Plan energy intensity targets.<sup>5</sup> However, the specifics of this successful implementation have not been studied, and this research sheds light on local officials' interests and incentives. This, in turn, helps to understand specific measures taken to reach local energy savings and emissions reduction (ESER) targets. As the current debate of energy savings in China focuses on institutional barriers to reaching national goals,<sup>6</sup> this tends to obscure the question of what mechanisms and political compromises are needed to implement policies. The findings of this paper have wider implications for the region and the nation as a whole, especially for many developing regions that may follow in Shanxi's developmental and energy management footsteps.

The analysis is drawn from fifty-three interviews conducted in the provincial capital, five municipalities, and eleven counties during June and July of 2010. The majority of interviewees were officials from the Economic Commission, the Environmental Protection Bureau, and the Development and Reform Commission, as well as industrial enterprise managers involved in energy intensity reduction and efficiency programs. Interviews were semi-structured and provided an understanding of overall implementation at the provincial, municipal, and county levels through the study of local circumstances, and similarities and variation between implementation in different localities. The analysis also draws from government policy documents and reports, ESER statistics, statistical yearbook data, and internal enterprise energy consumption statistics.

The next section introduces concepts and arguments relevant to understanding implementation of national ESER policies at the local level. The subsequent part provides an overview of national energy efficiency efforts since 2006 and describes the local policy context in Shanxi province. The paper then analyzes local players and interests in the implementation of two industrial energy efficiency policies: the Shanxi Top-1000 Enterprise Program and the policy of 'elimination of backwards production capacity' and small plant closure. The research concludes with highlighting the bundling of interests and policies as a common im-

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<sup>4</sup> Energy intensity is the energy consumption per unit GDP.

<sup>5</sup> Shanxi Economic and Information Commission, *Shanxi Economic and Information Commission Document [2008] 1*, (September 2008); Shanxi Economic and Information Commission, *Shanxi Economic and Information Commission Document [2009] 1*, (July 2009); Shanxi Economic and Information Commission, *Shanxi Economic and Information Commission Document [2010] 1*, (May 2010).

<sup>6</sup> Lynn Price, Xuejun Wang, Jiang Yun, "The Challenge of Reducing Energy-Consumption of the Top-1000 Largest Industrial Enterprises in China," *Energy Policy*, Vol. 38, No. 11 (November 2010); Xiaofan Zhao and Leonard Ortolano, "Implementing China's National Energy Conservation Policies at State-Owned Electric Power Generation Plants," *Energy Policy*, Vol. 38, No. 10 (2010), pp. 6293 - 6306.; Mark Levine, Lynn Price, Nan Zhou, David Fridley, Nathaniel Aden, Hongyou Lu, Michael McNeil, Nina Zheng, Qin Yining, Ping Yowargana, *Assessment of China's Energy-Saving and Emission-Reduction Accomplishments and Opportunities During the 11th Five Year Plan*, (Berkeley, CA: Ernest Orlando Lawrence Berkeley National Laboratory, 2010).

plementation mechanism at the local level and offers a brief discussion of the implications of the findings.

## 2 Energy Efficiency Policy Implementation: Actors, Interests, and Incentives

China's energy efficiency programs at the national level have received a great deal of attention in the public policy literature,<sup>7</sup> yet an analysis of local implementation is essential for a full understanding of the national ESER initiative. Most China observers are well aware of gaps between the central government's official national policies and its practical outcomes at the local levels. In general, there are four competing approaches to understanding local policy implementation. First, several studies have linked policy implementation at the sub-national level to China's 'fragmented authoritarian' bureaucratic system,<sup>8</sup> arguing that splintered and disjointed institutional responsibilities of the implementation system itself are a major contributor to variation in local implementation. A second view explains the gap between national policies and local practices through China's highly decentralized governing structure, which allows local officials to be more selective about which national policies to implement and which ones not to implement.<sup>9</sup> Other scholars disagree with both views, arguing that the center still wields substantial power; this perspective holds that formal constraints imposed by the central government should be held to account for the environmental 'implementation gap'.<sup>10</sup> And yet another branch of literature suggests that local officials often deviate from the policy made at the central level due to a conflict of interest between national and local actors.<sup>11</sup> A conflict exists because national policies at times fail to take into account policies' potential negative impacts on businesses, employment, and taxation revenues. National policies without sufficient local support and legitimacy are only implemented strictly when there is direct and constant attention from the center. Policy implementation outcomes therefore often directly or indirectly relate to the differences between priorities at the national level and local incentives.

<sup>7</sup> Nan Zhou, Mark Levine, and Lynn Price, "Overview of Current Energy Efficiency Policies in China," *Energy Policy*, Vol. 38, No. 11, (2010), pp. 6439 - 6452; Michal Meidan, Philip Andrews-Speed, Philip and Ma Xin "Shaping China's Energy Policy: Actors and Processes," *Journal of Contemporary China*, Vol. 18, No. 61 (2009), pp. 591 - 616.

<sup>8</sup> Kenneth Lieberthal and Michel Oksenberg, *Policy-Making in China: Leaders, Structures, and Processes*, (Princeton, N.J.: Princeton University Press, 1988); David Lampton, "The Implementation Problem in Post-Mao China," in *Policy Implementation in Post-Mao China*, David Lampton ed., (Berkeley CA: University of California Press, 1987); Kenneth Lieberthal, "China's Governing System and its Impact on Environmental Policy Implementation," in *China Environment Series* (Stanford: Woodrow Wilson International Center, 2003).

<sup>9</sup> Elizabeth C. Economy, *The River Runs Black The Environmental Challenge to China's Future*, (Ithaca, NY: Cornell University Press, 2004); Kevin O'Brien and Liangjiang Li, "Selective Policy Implementation in Rural China," *Comparative Politics*, Vol. 31, No. 2, (1999), pp. 167 - 186.

<sup>10</sup> Ran Ran, *Environmental Politics at Local Levels in China: Explaining Policy Implementation Gap and Assessing the Implications*, (PhD Dissertation, University of Duisburg-Essen, 2009).

<sup>11</sup> Benjamin van Rooij, "Implementation of Chinese Environmental Law: Regular Enforcement and Political Campaigns," *Development and Change*, Vol. 37, No. 1 (2006), pp. 57 - 74.

These four approaches focus on the way governance practices and decision-making structures shape implementation outcomes, yet very little research has shown what strategies local leaders actually employ to bridge national priorities with local interests.<sup>12</sup> The low ambiguity of energy intensity reduction targets, and the high conflict involved in their implementation, makes ESER policy implementation a site of political contestation.<sup>13</sup> This research therefore highlights political mechanisms and incentives that local officials use to build support for policies that are sometimes unpopular. Formal incentives for government officials and state-owned enterprise (SOE) managers are political in nature and include evaluation criteria such as economic growth, social stability, and employment figures<sup>14</sup>, along with softer evaluation factors such as environmental pollution and emissions reductions. For both SOEs and private enterprises, formal incentives provided in environmental policy implementation schemes are profit-based and include subsidies and expedited approval of production scale expansions after the removal of old equipment. Informal incentives for government officials include a preference for harmony in their locales and consensus building, strong personal relationships with enterprise managers,<sup>15</sup> and an interest in sustaining grey income flows.<sup>16</sup> For enterprises, informal incentives include officials' provision of preferential access to land and funds, strong personal relationships with local officials, and informal assurances of continued, uninterrupted business operation.

To illustrate how leaders work politically, this paper highlights specific implementation *mechanisms* officials use to strengthen formal incentives and create effective informal incentives to fulfill energy efficiency objectives. The first is *interest-bundling*, which occurs when government officials link their own political interests with the economic and political interests of the large enterprises essential to successful implementation of the ESER policy. Officials link their interests with those of state-owned and private enterprise managers by signaling and communicating the importance of the ESER policy and indicating the willingness of the local government to provide incentives to comply. This approach avoids adversarial relationships with important local enterprises. The second mechanism is *policy-bundling*. Some ESER policies are connected with policies and concerns of more local or immediate interest like local pollution control or work supervision and safety. At other times, their implementation may be implicitly tied to formally unrelated policies with greater public emphasis and larger official

<sup>12</sup> Adrian Leftwich, "Beyond Institutions: Rethinking the Role of Leaders, Elites and Coalitions in the Institutional Formation of Developmental States and Strategies," *Forum for Development Studies*, Vol. 37, No. 1 (2010), pp. 93 - 111.

<sup>13</sup> For an in-depth description of the ambiguity-conflict model of implementation, see Richard Matland, "Synthesizing the Implementation Literature: the Ambiguity Conflict Model of Policy Implementation," *Journal of Public Administration Research and Theory*, Vol. 5, No. 2 (1995), p. 145 - 174.

<sup>14</sup> Pierre Landry, *Decentralized Authoritarianism in China: the Communist Party's Control of Local Elites in the Post-Mao Era*, (New York: Cambridge University Press, 2008); Susan Whiting, *Power and Wealth in Rural China: The Political Economy of Institutional Change*, (Cambridge: Cambridge University Press, 2000).

<sup>15</sup> Peter Hills and C.S. Man, "Environmental Regulation and the Industrial Sector in China: the Role of Informal Relationships in Policy Implementation," *Business Strategy and the Environment*, Vol. 7, No. 2 (1998), pp. 53 - 108.

<sup>16</sup> Shaoguang Wang, "Regulating Death at Coalmines: Changing Mode of Governance in China," *Journal of Contemporary China*, Vol. 15, No. 46 (2006), pp. 1 - 30; Andrew Wedeman, "The Intensification of Corruption in China," *China Quarterly*, Vol. 180 (2004), pp. 895 - 921.



support. These approaches increase public support and lessen resistance to implementation. The third tool is *framing*, a concept that originates from sociological research.<sup>17</sup> Frame analysis has been applied to the politics of environmental, energy, and climate change discourse and describes the effectiveness of linguistic ‘reframing’ of policies in dominating public perceptions of issues.<sup>18</sup> In this study, research suggests that local leaders ‘frame’ by conceptualizing and describing policies in ways that play to interests in their localities. This helps to create coalitions to support implementation of initiatives which are *prima facie* detrimental to interest groups or the public in general. Through these methods, municipal and county officials with unambiguous incentives to meet energy intensity target reductions can balance national and provincial demands with local interests. At the same time, they bundle ESER policy in ways that make it relevant to concerns of greater local importance. Ultimately, local officials take policies and programs of national and international concern and then bundle and frame them in ways that give them legitimacy at the local level.

In the following two sections, this paper introduces the national and provincial level energy efficiency efforts, highlighting the formal policy structures. This description also points out the shortfalls of formal incentives that necessitate policy implementation mechanisms outside of these structures. The paper then continues with a detailed analysis of the corresponding local implementation practices and outcomes.

### 3 National Context

Between 2002 and 2005, China’s energy intensity increased at an average of 3.8 percent<sup>19</sup> reversing a long-term trend of continuous energy efficiency improvements. In response to this development, the central government in 2004 began to introduce a series of policies, administrative plans, and laws to fill this gap and strengthen energy conservation work. Most importantly, in 2006, the Chinese central government introduced administrative measures to control energy growth and reduce energy intensity. The measures include an ESER program, which relies on administrative measures and tools deployed in China’s fragmented vertical and horizontal (*tiao tiao kuai kuai* 条条块块) governance structure, the most important of which are mandatory, ‘hard’ (*ying xing* 硬性) energy intensity reduction targets for government departments and enterprises. Other administrative measures and tools introduced between 2006 and 2008 are less stringent, but also important. In concert with the introduction of the hard targets, the central government also published a list of ten key energy-savings projects, ten key ‘people’s projects’, energy efficiency guidelines and industry efficiency standards, along with

<sup>17</sup> See Erving Goffman, *Frame Analysis*, (Cambridge: Harvard University Press, 1974).

<sup>18</sup> Maarten Hajer. *The Politics of Environmental Discourse. Ecological Modernization and the Policy Process*. (Oxford, UK: Clarendon Press, 1995). J. Ivan Scrase and David Ockwell, “The Role of Discourse and Linguistic Framing Effects in Sustaining High Carbon Energy Policy: An Accessible Introduction,” *Energy Policy*, Vol. 38, No. 5 (2010), pp. 2225-2233.

<sup>19</sup> National Bureau of Statistics. *China Statistical Yearbook (2002-2005)*.

other government documents to guide government and enterprise implementation of energy efficiency policy.<sup>20</sup>

As noted in the literature, hard targets in the cadre responsibility system are generally reserved for economic growth goals and measurements of social stability.<sup>21</sup> Energy policies of the 11<sup>th</sup> Five-Year Plan and the new developments in cadre management thus reflect the great emphasis placed on energy consumption saving at the highest levels of the Chinese Communist Party (CCP) and State Council, and can be considered a national reassessment of the ‘growth at any cost’ model previously pursued throughout the country. Yet, the ultimate success or failure of national initiatives continues to depend on local implementation.

Signaling from Beijing made it clear that faithful implementation of energy efficiency goals are a national priority, but the ESER program, begun in 2006 and in earnest at the provincial level in 2007, had a difficult start. Early government reports indicated that most provinces and the nation as a whole fell far short of initial yearly targets.<sup>22</sup> By the end of 2008, the country seemed on track to meet its energy intensity reduction target of 20 percent, but, in winter 2009, this trend reversed and energy intensity in China increased by 3.2 percent<sup>23</sup>, bringing into question the nation’s ability to meet its targets. In May 2010, Chinese Premier Wen Jiabao called for local officials to ‘use an iron hand’ when implementing the ESER policy, pushing the nation to ensure completion of its ESER targets stated in the 11<sup>th</sup> Five-Year Plan.<sup>24</sup>

Whether or not the country reaches its energy intensity reduction targets by 2010, the significance of the return to more or less effective energy management should not be underestimated. The high-energy intensity consumption practices in the 1990s and early 2000 provided opportunities for the development of entrenched business, economic, and political interests at the local level. At the same time, with the ‘grab the large, let go the small’ (‘zhua da fang xiao’) reform in the mid-1990s, which saw the privatization of small, locally-administered SOEs and the restructuring and modernization of the largest, predominantly centrally-run, enterprises, the Chinese local state’s regulation capacity decreased. How then can energy efficiency accomplishments be explained and how were local officials able or willing to overcome the challenges posed by vested local interests?

<sup>20</sup> For an overview of recent national energy efficiency policies, see Nan Zhou, Mark Levine, and Lynn Price, “Overview of Current Energy Efficiency Policies in China,” pp. 6439 - 6452.

<sup>21</sup> Maria Edin, “State Capacity and Local Agent Control in China: CCP Cadre Management from a Township Perspective,” *The China Quarterly*, Vol. 173 (2003), pp. 35-52. Whiting, S. H., *Power and Wealth in Rural China: The Political Economy of Institutional Change*, (Cambridge: Cambridge University Press).

<sup>22</sup> Nan Zhou, Mark Levine, and Lynn Price, “Overview of Current Energy Efficiency Policies in China,” pp. 6439 - 6452.

<sup>23</sup> “Wen Jiabao: Luoshi Zeren Quebao Shixian ‘Shiyiwu’ de Jieneng Mubiao” (“Wen Jiabao: Fulfill Responsibilities to Ensure Realization of Five-Year Plan Energy Intensity Targets”) available at [http://www.china.com.cn/policy/txt/2010-05/06/content\\_19978943.htm](http://www.china.com.cn/policy/txt/2010-05/06/content_19978943.htm), last accessed on September 18, 2010.

<sup>24</sup> *ibid.*

## 4 Local Context: Shanxi Province

Shanxi province has a high proportion of energy-intensive industry. In 2008, overall industrial production accounted for 54 percent of GDP and close to 76 percent of net taxes on production and heavy industry accounted for 81 percent of provincial energy consumption.<sup>25</sup> This carries with it implementation and transitional challenges, yet Shanxi has nonetheless arguably successfully implemented ESER policy. Shanxi provincial leaders have formulated policies stricter than national requirements, and are on track to meet their ESER goals.

Provincial policy overall heavily reflects policies at the national level. The provincial leaders have passed on the 11<sup>th</sup> Five-Year Plan's provincial 2010 goal of a 25 percent reduction in energy intensity against 2005 levels, to lower level governments and departments. The 2007 decision by the State Council to turn energy intensity reduction into 'hard targets' was outlined in provincial policy in 2008.<sup>26</sup> The province government also distributed its nationally assigned goal of completing 4.6 million square meters of energy-saving building renovations to lower level governments and departments, along with energy-efficient light bulb dissemination, district heating and other targets.<sup>27</sup>

Yet, provincial policy is not limited to national requirements. Shanxi leaders, including the governor and heads of the Shanxi Economic Commission and Development and Reform Commission, will be held responsible for progress in energy efficiency by the end of the 11<sup>th</sup> Five-Year Plan and therefore have strong incentives to ensure completion of national efficiency requirements when formulating Shanxi's provincial policy. Provincial leaders went beyond national requirements and made provincial ESER policy stricter than national policy to ensure their completion as leaders anticipated some local ESER efforts to fail or to be discounted by national inspection teams. Provincial targets assigned by the national government were raised for municipalities, counties, and enterprises to ensure completion of the overall provincial 11<sup>th</sup> Five-Year Plan target. In one municipality, for example, targets at the county level generally ranged from 27 percent to 30 percent in energy intensity reduction.<sup>28</sup> In supplement to national policies, Shanxi province introduced a Top-200 enterprise program modeled after the national Top-1000 Enterprise Program,<sup>29</sup> which was later expanded to a provincial 1000 enterprise program after improved energy use calculations. These national and provincial top-enterprise programs were intended to improve energy efficiency at the province's and nation's largest energy consuming enterprises. The provincial government also approved

<sup>25</sup> Shanxi Province Bureau of Statistics, *Shanxi Statistical Yearbook* (2009)

<sup>26</sup> Shanxi People's Government, *Shanxi People's Government Document [2008] No. 16*, (June 2008)

<sup>27</sup> Shanxi People's Government, *Shanxi People's Government Document [2007] No. 32*, (September 2007)

<sup>28</sup> Interview 21, July 2010, Municipal Economic Commission Official

<sup>29</sup> For an overview of the national program, see Lynn Price, Xuejun Wang, Jiang Yun, 'The Challenge of Reducing Energy-Consumption of the Top-1000 Largest Industrial Enterprises in China,' *Energy Policy*, Vol. 38, No. 11 (2010).

provincial energy efficiency standards more stringent than national standards in some industries such as steel and magnesium.<sup>30</sup>

These ambitious provincial targets and policies created a provincial energy efficiency policy structure strongly in line with national interest, yet created implementation difficulties, especially regarding funding. Given the expansion of energy efficiency programs, Shanxi province uses additional provincial funds to support these initiatives. In particular, in 2007 provincial leaders created a ‘Coal Sustainable Development Fund’ through taxation of all provincial coal exports and since then has used part of this money to provide funding for energy-saving initiatives, in addition to projects to counteract the detrimental impacts of coal extraction in the province.<sup>31</sup> The establishment of this fund took advantage of provincial interest and circumstance and bundled them with both coal mining concerns and the ESER implementation incentives.

This ‘Coal Sustainable Development Fund’ serves a number of purposes. First, it aims to soften the social and economic consequences of coal mining in Shanxi.<sup>32</sup> Second, it ensures that other provinces benefiting from the use of Shanxi coal foot the bill for costs not reflected in the price of coal. Third, it aims to raise the costs of exports and keep Shanxi resources within the province to ensure greater GDP creation from industrial processing, instead of low-wealth creation from exporting natural resources. Fourth, and most importantly, it fills government coffers and greatly enhances provincial policy implementation capacity in a number of key areas, including city greening initiatives and ESER policy implementation. Between March 2007 and the end of 2009, the fund reportedly collected over 43 billion yuan.<sup>33</sup>

In addition, interest convergence was not limited to financial capacity building, but also occurred during the formulation of the relatively stringent industry efficiency standards. As mentioned above, Shanxi province enacted provincial energy efficiency standards in industries such as steel and magnesium stricter than those set out at the national level. These provincial efficiency standards are created by the enterprises themselves giving them room to account for their own interests. For some industries such as magnesium or steel, which are dominated by one enterprise in the province, efficiency standards are created by a single drafter before being approved by enterprise associations and the government. Although it seems counter-intuitive for enterprises to willingly draft tough standards, especially when they are sufficiently stringent to lead to cost increases, in fact, many large enterprises have incentives to create high efficiency standards to squeeze small producers out of the industry and increase their market share. One manager of a large magnesium enterprise, for example,

<sup>30</sup> Interview 51, July 2010, Provincial Economic Commission Official; Interview 44, July 2010, County Economic Commission Official

<sup>31</sup> Shanxi People's Government, *Shanxi People's Government Document [2007] No. 39*, (September 2007)

<sup>32</sup> For an in-depth study on the socioeconomic consequences of coal mining, see Philip Andrews-Speed, Xin Ma, ‘Energy Production and Social Marginalization in China,’ *Journal of Contemporary China*, Vol. 17, No. 55 (2008), pp. 247 – 272.

<sup>33</sup> Zhong Guo, “Danghao ‘Meitan Xinzheng’ Shouhuzhe” (“A Good Guardian of the ‘Coal New Deal,’”) *Zhongguo Caizheng Bao* (China Financial Report), June 5 2010, available at [http://www.cfen.com.cn/web/cjb/2010-06/05/content\\_636949.htm](http://www.cfen.com.cn/web/cjb/2010-06/05/content_636949.htm), last accessed on September 23, 2010.

cited this as a major reason for supporting strict standards.<sup>34</sup> Indeed, this enterprise pushed for standards approved in Shanxi to also be approved at the national level, but met with resistance from enterprise owners in other provinces and national government officials concerned that they would limit growth in the industry.

However, despite these funding and standard-setting factors some provincial policies continued to run against local demands and interests. Many energy efficiency methods promoted by the national and provincial governments provided few enterprise cost-savings, except in the very long-term. According to one interviewee, a common saying among local enterprise managers is that ‘energy-savings are not cost-saving’ (*jieneng bu jieqian* 节能不节钱). This is especially the case as subsidies continue to be insufficient. For example, subsidies and rewards distributed by the provincial Development and Reform Commission and sometimes by the municipal and county governments are considered ‘symbolic’ and not always given out in a consistent manner. When subsidies are given, they are given after the project completion, creating a high level of uncertainty for enterprises considering energy-saving projects. According to one municipal official, between 2007 and 2009, there were around 250 industrial projects to upgrade production efficiency in the municipality. Of these, only 44 of the largest projects received subsidies.<sup>35</sup> Indeed, throughout Shanxi, only enterprises with very large production capacity and relatively advanced production capability, which are often large enterprises of significant economic and political importance, consistently receive compensation, subsidies and rewards.

Due to insufficient financial resources and policy aspects that ran in opposition to local interest, the necessity for local officials to bundle provincial and national interest with local interest remained. Among different ESER programs and measures the most important and locally emphasized were the provincial Top-1000 Enterprise Program, the ‘elimination of backwards production capacity’ and small plant closure policy, industry energy efficiency standards, and social ‘ten key projects’ program such as efficient light bulb programs, district heating and waste water management and energy-saving renovations in residential housing. This paper will examine two of them – the Shanxi Top-1000 Enterprise Program and the ‘elimination of backwards production capacity’ and small plant closure policy – and analyze the extent to which bundling of interests and policies, along with framing for the interests and concerns existent in localities, were used to address the challenges to implementing ESER policy.

## 5 Interest-Bundling, Policy-Bundling, and Framing

### 5.1 Shanxi Top-1000 Enterprise Program

The Top-1000 Enterprise Program in Shanxi is perhaps the most important component of the ESER policy at the local level. Enterprises on the list account for 90 percent of energy use

<sup>34</sup> Interview 45, July 2010, Manager of Large Industrial Enterprise

<sup>35</sup> Interview 28, July 2010, Municipal Economic Commission Official

in the province according to calculations by the Shanxi Provincial Economic Commission,<sup>36</sup> and energy efficiency improvements at these enterprises are the primary factor determining officials' progress towards energy intensity reduction hard targets. To implement the 1000 enterprise program, local leaders sign responsibility contracts committing themselves to energy intensity reductions in their jurisdictions, and then sign responsibility contracts with the enterprise managers on the 1000 enterprise list, committing them to specific energy consumption targets.

Because the targets in the cadre responsibility system are tied to these agreements, local leaders and officials have strong incentives to implement the Top-1000 Enterprise policy. At the same time, however, they have both limited willingness and capacity to enforce targets and standards. Local leaders such as the mayors and party secretaries have greater influence and implementation capacity than Economic Commission officials, but are not always willing to give priority to the enforcement of ESER policy. Mayors and party secretaries have many, sometimes conflicting, priorities and targets, and energy intensity targets are just one of them. As a result, Economic Commission officials often carry out ESER policies without the leadership's unconditional support for strict enforcement measures and must consider economic and political interests of enterprises to ensure their cooperation.

In terms of supervision and enforcement capacity at the county level, usually only one or two people in the Economic Commission are in charge of energy efficiency at enterprises. The same officials are responsible for many different industrial production and technology standards. With limited industry knowledge, it is difficult for them to thoroughly evaluate the required energy reports delivered by the enterprises. Even with greater human resources and skills, local Economic Commission officials cannot effectively implement ESER policy without the support and cooperation of large energy-intensive enterprises. The local governments can punish enterprises who exceed industry efficiency standards by raising the enterprise's electricity price and ordering utility companies to cut off electricity and water to the enterprise, a policy commonly referred to as 'cut water cut electricity' (*duanshui duandian* □□□□), but the legal basis for these punishments is tenuous, and enterprises can resist or appeal their enforcement.

Given their limited willingness and ability to enforce the policy, local leaders and officials often choose to bundle their own political interests with the economic and political interests of enterprise managers. Government officials ensure and explain to managers the formal rules and incentives within the national and provincial ESER policy such as provincial, and in some cases municipal, subsidies and often also provide informal incentives outside the formal implementation structure. Although the existence of subsidies and formal incentives such as

<sup>36</sup> Shanxi Economic and Information Commission, *Shanxi Economic and Information Commission Document [2010] No. 2*, (May 2010). This statistic was calculated using a broad definition of the word 'industrial', encompassing all aspects of energy use that might be impacted by industrial policy implementation, and was used to emphasize the importance of the Economic Commission's work. The provincial Development and Reform Commission and the provincial Construction Bureau went by different numbers. An official from the Construction Bureau, for example, believed the number should be closer to one third, as it set down by the National Development and Reform Commission, with transportation and housing taking up the remaining two thirds (Interview 27, July 2010, Provincial Construction Bureau Official).

promotions are clear, subsidy and compensation applications are complex and mistakes will result in denial of funding. Also, subsidies are limited and enterprise managers may be doubtful that their applications will succeed. Assurances and assistance from local officials can thus be essential to an enterprise manager's confidence that ESER measures will receive compensation from the government. On the informal side, when local officials and managers have close relationships, personal or professional, they persuade enterprises of benefits through unofficial means, such as personal appeals and preferential treatment for enterprises that make voluntary efforts to reduce energy consumption. Highlighting potential political, economic, or social benefits to be gained from implementing ESER measures is one of the informal means employed by government officials. Thus, government officials bundle their own political interests such as evaluations and promotion opportunities with the economic and political interests of enterprise managers, which vary according to enterprise forms of ownership.

Formal and informal incentives differ for SOEs and private enterprises. For SOEs, managers are more easily incentivized to meet ESER targets as they can be punished through political performance evaluations if they fall short of their goals. They can be excluded from year-end bonuses and be subject to other political punishments.<sup>37</sup> Beyond this, SOE managers may also implement the policies for perceived political benefit outside of the formal incentive structure. For some large SOE managers, government signaling communicates an advancement opportunity. If they can significantly increase energy efficiency and increase GDP per unit of energy consumed, they may be able to expect a number of political benefits and perhaps a promotion. For example, it is common knowledge among Shanxi enterprise managers that the former head of the largest iron and steel plant in Shanxi, Taiyuan Iron and Steel (*Taigang* 太钢), was promoted to deputy governor of the province after increasing efficiency and raising production standards at the company.

Offering political incentives, on the other hand, does not work as well for private enterprises owners. Private enterprises primarily evaluated ESER policies based on profit maximization criteria and energy efficiency projects do not always result in significant cost-savings. Accordingly, local officials can use signaling and persuasion to assure business managers of secure long-term operation, preferential treatment for future expansion projects, increased market share resulting from eventual consolidation of production capacity to the most efficient enterprises, and other economic benefits. A key component of the secure long-term operation incentive is continued access to local financing. Local banks, although making decisions independently, commonly align loan decisions with interests of local mayors and party secretaries.<sup>38</sup> Loans are thus tied to the loan preferences of local leaders, who are incentivized to prioritize large, energy efficient enterprises that met their ESER targets. Therefore, the private enterprise ESER interest-bundling is to some extent a race to stay on the government's good side and maintain preferential access to government-provided resources.

Signaling, informal assurances, and actual political and economic incentives are sometimes not enough to convince enterprise managers to improve energy efficiency. Some cases require concrete enforcement to ensure overall locality energy intensity reductions. Officials

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<sup>37</sup> Shanxi People's Government, *Shanxi People's Government Document [2007] No. 32*, (September 2007)

<sup>38</sup> Interview 16, July 2010, Manager at Private Industrial Enterprise

thus sometimes seek compromises to ensure enterprise managers will be as receptive as possible to enforcement. One way that local governments can bundle their ESER 'hard target' interests while also preventing long-term, undue harm to local interests is to use a measure called 'sleeping management' (*xiumian guanli* 休眠管理). For example, in one county, by early 2010 local leaders realized that they were not able to meet their ESER targets set in the 11<sup>th</sup> Five-Year Plan because of a single new coal power plant, which had greatly increased the overall energy intensity in the county. The income from this new plant is important to the local economy and government revenue, yet the detrimental impact on the energy intensity in the locality is undeniable. As a compromise, the local government therefore will require this enterprise and other energy-intensive enterprises which have greatly exceeded energy consumption standards to close in rotation for several months at the end of 2010. In this way, the local leaders hope to satisfy their ESER targets without actually having to close any of the concerned enterprises completely and suffer the social and economic consequences that would result. In addition, local officials in this locality and others use this example of enforcement to pressure other enterprises to comply. For the coal power plant temporary closure is a compromise because the company is allowed to continue operation, but for other enterprises, officials can employ impermanent closures as a very strong punishment.

That is, local governments rarely resort to harsh punishments, but still use it as a very real threat for enterprises if the jurisdiction is close to falling short of the officials' ESER targets and the mayor and other high level officials find themselves with their 'backs to wall'. Given tight personal networks between government officials and larger enterprise managers, local enterprises are aware of the importance of energy reduction to mayors and high level officials, even if they have little reason, legally or with respect to political influence, to listen to the appeals of Economic Commission representatives. Signaling by the government, often through informal channels, such as former government officials in management positions at large private enterprises, makes it clear to private enterprises that if they do not comply with ESER policies they will certainly be punished. For large enterprises which reduce energy consumption, the signaling from the government officials also ensures them that when they increase costs in the short-term they will not be undercut by other enterprises who avoid energy-saving renovations. In this way, they can anticipate that if noncompliant enterprises cut corners to take away market share, they will be punished or even closed.

## 5.2 Policy of 'elimination of backwards production capacity' and small plant closure

The second major and perhaps most reported ESER effort in Shanxi is the push to close inefficient and energy-intensive production lines and small industrial enterprises. To implement it, the Economic Commission in a county or municipality identifies enterprises that violate national and provincial guidelines on industrial equipment and production scale standards. After receiving the approval of the mayor, local Economic Commissions publish lists of enterprises or production lines that do not meet energy efficiency requirements and list



time frames for ‘voluntary’ closure. Some closed enterprises or enterprises that shut down outdated production equipment receive compensation of around 20 to 30 percent of the closed enterprise or production line value, but the majority do not.<sup>39</sup>

When implementing the plant and production line closure policy, local governments are more likely to resort to differentiated electricity pricing and cutting off electricity and water, especially for small enterprises. In some cases, local mayors can ask the Security Bureau to send police officers to assist with forced closures, along with removal and destruction of factory equipments. One case in which strict forms of enforcement were used prior to the end of the 11<sup>th</sup> Five Year Plan was in response to a ‘investment restriction’ punishment imposed by the national government that restricted the approvals of all new energy-intensive projects for three months. To placate the national government, local leaders ordered one electricity company to cut off electricity to over 70 enterprises<sup>40</sup> in order to have the investment restrictions lifted.

For most cases at the local level, there are fewer incentives to undertake this kind of strict enforcement, and local officials must consider local economic growth, employment, and social concerns. Major economic drawbacks of the small enterprise closures are that they decrease local GDP, tax revenue, and employment numbers. Local officials partially remedy these effects by adding capacity at large, relatively efficient enterprises. Within large enterprises, approval for new production lines is normally contingent on the closure of outdated production capacity, a national policy.<sup>41</sup> In some localities, enterprises were granted extensions while the new production facilities and equipments were under construction.

In areas with homogenous local income and no large enterprises, incentivization was more difficult and local leaders were willing to make allowances for the economic and social stability of the locality. Many local officials anticipated strong opposition to plant closure. In one reportedly isolated incident, for example, a local factory owner organized an employee protest in response to the coming closure of his enterprise. This situation resulted in the government ‘persuading’ the owner and his employees that the closure was in the interest of the locality and they would be provided re-employment opportunities.<sup>42</sup>

To avoid possible government-enterprise conflict, the local governments take preemptive measures to decrease costs of implementation for local interests. For one small town with a single large industrial plant, the county and municipal officials allowed a small, inefficient plant to stay open because of its importance in the local economy. This was done only after making sure the plant owners realized that they were being done a favor and must return the favor by making serious efforts to increase energy efficiency if they were to stay open. At the same time, local leaders emphasized that this was a temporary solution only, and that the en-

<sup>39</sup> Numerous interviews including: Interview 28, July 2010, Municipal Economic Commission Official; Interview 13, July 2010, County Development and Reform Commission Official

<sup>40</sup> China Finance Weekly, “Shanxi Jieneng Jianghao Taotai Luohou Ke Bu Ronghuan” (“Shanxi Energy Conservation and Consumption Reduction Elimination of Backwards is Pressing”), available at <http://finance.sina.com.cn/china/dfjj/20071210/00124267955.shtml>, last accessed on September 16, 2010.

<sup>41</sup> National ‘Link Small Unit Closures to Large Unit Construction Approvals’ Policy

<sup>42</sup> Interview 38, July 2010, Municipal Economic Commission Official

terprise must close eventually. In another case, a high profile closing, one local mayor brought together representatives from a number of the local departments to ensure that employees losing their jobs would be cared for by the government, and then arranged that they were provided re-employment and other forms of assistance. Some local officials also aligned their interests with those of small enterprise owners and gave enterprises the option of being able to sell or keep their equipment if they voluntarily close ahead of the final date for closure,<sup>43</sup> as opposed to being forced to remove and destroy equipment as set out in national policy. In this way, enterprise managers were given an incentive to implement the policy themselves, making highly visible government intervention unnecessary.

To avoid conflict in another way, local Economic Commission officials and local governments took advantage of the aftermath of the Financial Crisis in 2009 to make progress on plant closure policy implementation. The economic slow-down resulted in many energy-intensive enterprises operating in the red and thus not vehemently opposed to exiting the industry, or, when applicable, readily willing to accept the small compensation offered for closure. Many 'closed' enterprises were already near bankruptcy by the time the ESER 'elimination of backwards production capacity' and small plant closure policy implementation was undertaken in earnest in 2008 and 2009.<sup>44</sup> At the same time, it could be inferred that the social unrest issues could be avoided by attributing the closure to the economic circumstances, instead of government interventionist behavior.

In addition to interest alignment, local officials avoided conflict in the policy implementation of 'elimination of backwards production capacity' and small plant closure when they bundled implementation with another policy. Plant closure was implemented together with the environmental clean-up prior to the 2008 Olympics, with campaigns to improve work supervision and tax collection, and with pollution reduction policy.

First, ESER plant closures were at times carried out in conjunction with the 2008 Olympics clean up policy, although the link between the two policies did not become apparent to small enterprise owners until after the event. Local officials asked enterprises to close in the name of the Olympics, but were aware that national and provincial policy would allow them to prevent these enterprises from re-opening. Many small plants which had thought they would only stop production during the lead up to the Olympics and would be allowed to pick back up where they left off were kept from doing so by the new policies restricting energy-intensive production.<sup>45</sup> Others were unable to reopen due to the economic climate following the Financial Crisis.<sup>46</sup>

Beyond the Olympics policy-bundling, small enterprise closures were also carried out as part of a greater campaign against 'low quality' small enterprise managers. The primary goals of this campaign were to improve work supervision and tax collection, yet it was loosely tied to mine closures, a policy with greater backing from high-level governments. In these cases,

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<sup>43</sup> Interview 9, June 2010, County Economic Commission Official

<sup>44</sup> Interview 18, July 2010, Provincial Economic Commission Official

<sup>45</sup> Interview 45, July 2010, Manager of Private Industrial Enterprise

<sup>46</sup> Interview 51, July 2010, Provincial Economic Commission Official

lack of clarity works to the local officials' advantage, even though the plant closures are primarily ESER policy. Local officials improved regulatory capacity in local safety and tax collection, key areas for local governments, while avoiding confrontation which could count against them if any social stability concerns arose.

In addition to these methods, the prioritization of small plant closures took into account the relative pollution emitted by different industries, as all local officials were evaluated on SO<sub>2</sub> emission reduction goals in addition to energy intensity reductions, and some localities faced pressure from provincial, and in some cases, national authorities to improve air quality. Specifically, local officials prioritized closing cement, along with iron and steel, small plants as they benefited local officials' emissions reduction goals significantly more than other industries. Two county official interviewees stated that as long there were enough cement, iron and steel, enterprises in the county that officials could close, the locality would easily meet its SO<sub>2</sub> emissions reduction goals.<sup>47</sup>

Bundling of interests and policies in the closures of small coal mines was stronger than in other industries. Small coal mines have much higher rates of fatalities than large, state-owned coal enterprises<sup>48</sup>; there was increasing national media coverage of coal mine accidents in recent years; and, perhaps most importantly, beginning in 2006 the central and Shanxi provincial government planned forced buyouts of small coal mines by large, often state-owned, enterprises as part of promoting enterprises 'getting bigger and stronger' (*zuo da zuo qiang* □□□□□). The combinations of these factors, and in spite of the often close relations between local officials and small mine owners, brought about a shift in local officials' willingness to close small mining operations. Local officials and coal bosses saw the policy's implementation as inevitable as the national and international media coverage of mining disasters in concert with great attention from the CCP's leadership and the State Council highlighted the social and political prioritization of the policy. It was seen as only a matter of the time, rather than a question of whether it would be enforced.

State-owned mining companies greatly benefit from the coal mine closure policy. National policy requires the consolidation of coal mines to the largest producers<sup>49</sup> and renationalization of coal resources in some regions is a top national priority. Coal SOEs are thus able to buy out a very profitable industry, one much more profitable than industrial production, at little cost and are able to regain control of energy resources, giving them and the government leverage over energy use activities from their source. In return, they provide large bases of coal production upon which to start the mine production capacity consolidation, resulting in precedents for other regions to follow. Mergers and buyouts were begun first in regions with significant state-owned mining interests and then gradually carried out in areas with a greater concentration of large private enterprises.

<sup>47</sup> Interview 8, June 2010, County Environmental Protection Bureau Official; Interview 9, June 2010, County Economic Commission Official

<sup>48</sup> Shaoguang Wang, "Regulating Death at Coalmines: Changing Mode of Governance in China," *Journal of Contemporary China*, Vol. 15, No. 46 (2006), pp. 1 – 30.

<sup>49</sup> National Development and Reform Commission, *11<sup>th</sup> Five-Year Plan of Coal Industry Development*, (January 2007), available at [http://www.gov.cn/gzdt/2007-01/22/content\\_503391.htm](http://www.gov.cn/gzdt/2007-01/22/content_503391.htm), last accessed on September 18, 2010.

This policy met with harsh resistance from mine bosses (*meilaoban* 煤老板) and other mining interests, as the government offered very low compensation for buyouts and mergers and the owners were left with only a fraction of the value of their enterprises.<sup>50</sup> Yet, it was still strictly enforced. After initially resisting the mergers and buyouts, private coal mines began to formulate strategies to play to the interests of local governments and, in doing so, ‘buy time’ before being forced out of the industry. These strategies focused on improving the enterprises image of social responsibility and general benefit to society. Coal enterprises built parks and funded rural education and employment programs to position themselves with the government as ‘good’ enterprises, and thus deserving to be among the last to undergo merger or buyout.<sup>51</sup> In the end, however, these enterprises know that they cannot exert enough political influence to counteract the confluence of interests aligned against them.

### 5.3 Policy ‘framing’

In both the Shanxi Top-1000 Enterprise Program and the policy of ‘elimination of backwards production capacity’ and small plant closure officials often ‘frame’ their ideas in order to play to local interests. The Top-1000 Enterprise Program and the ‘elimination of obsolete production capacity’ and small plant closure policy are conceptualized by local officials as upgrading and production capacity restructuring programs. This framing is also used to emphasize that the ESER policies will provide social benefits in the long-run, such as more local employment opportunities and improved workplace safety.

Within this framework, the general view of local officials is that the responsibility of the Economic Commission, and the Development and Reform Commission is to *shift* production capacity from small or under-performing enterprises to large, efficient enterprises which can produce the greatest GDP with the lowest relative energy consumption. This conceptualization is officially based on the national policy of tying an enterprise’s large project approval to its small production line closures. Yet at the local level, the policy is unofficially expanded from a shift of production capacity within a single enterprise to an inter-enterprise shift of production capacity from small enterprises, which are closed, to large enterprises, which correspondingly expand production. Often, beneficiaries of this are state-owned or politically influential large private enterprises with access to provincial ‘elimination of obsolete capacity’ compensation and technology upgrade subsidies, given only to very large energy-saving projects, especially those which document savings over 10,000 tons of standard coal equivalent.<sup>52</sup> Under ideal settings, local officials conceive that this shift could result in new local production greater than the eliminated capacity, higher local value-added due to greater local

<sup>50</sup> Hua Geng, “Shijian Zai Wu Meilaoban?” (“Are Coal Bosses Going to Disappear from the Earth?”) *Nanfang Zhoumo* (Southern Weekend), September 16, 2009, available at <http://www.infzm.com/content/34791>, last accessed on September 7, 2010.

<sup>51</sup> Interview 37, July 2010, Manager of Private Coal Mine

<sup>52</sup> Lynn Price, Xuejun Wang, Jiang Yun, ‘The Challenge of Reducing Energy-Consumption of the Top-1000 Largest Industrial Enterprises in China,’ *Energy Policy*, Vol. 38, No. 11 (2010), pp. 6485 - 6498.

processing instead of exports to other provinces or municipalities for processing, and better government-enterprise relations resulting from greater tax collection. They also aim to cause little damage to the local economy and employment. The latter is possible even in the short-term as employees of closed enterprises are generally rural migrant workers and not counted in employment statistics.

In addition, officials portray small plant closures as contributing to improved supervision and inspection capacity, and increasing the overall level of social responsibility of enterprises. This is due to the fact that many safety and employment scandals, along with their cover-up, have occurred in small enterprises. There is little supervision of small industrial plants and their managers are given a great deal of leeway to conduct business as they wish. By closing these small enterprises, they increase the average social responsibility level of enterprises.

This framing is perhaps crucial to providing justification for the policies which benefit influential enterprises and individuals, especially when it seems insufficient to a local official to simply explain that large enterprises are always more efficient. They are presented as being in line with provincial policies to consolidate production capacity and increase production at the most advanced enterprises to develop 'local champions', and to avoid providing assistance to small enterprises that are hard to regulate. Several local government interviewees emphasized that although many small enterprises were or will be forced to stop production, most large enterprises had created increased production capacity by the end of 2008.<sup>53</sup> For example, according to one county level official in charge of closures of small enterprises, the local government closed 30 small energy-intensive plants, but these closed plants each had only around one million to two million yuan total investment and around 20 to 30 employees. Although this would mean that 600-900 employees lost their jobs, the official stressed that the closure had little effect on the overall local economy.<sup>54</sup> In another locality, one county official stated that 15 out of 37 coke plants had closed, yet large coke enterprises added more production capacity than was eliminated through plant closure policies.<sup>55</sup> This official emphasized that although many plants had been closed, overall production capacity had increased, future profits would be greater and tax revenues would correspondingly increase, and that the locality had improved the overall 'quality' of its enterprise owners by pushing small enterprise managers out of heavy industry.

## 6 Conclusion

At the national level, China's energy savings and emissions reduction policies at the national level are ambitious and at the provincial level in Shanxi they are even more bold. These efforts reflect China's national reassessment of the 'growth at any cost' and the turn towards a more sustainable, environmentally-friendly, and energy-secure growth path. However, the

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<sup>53</sup> Numerous interviews including: Interview 31, July 2010, County Economic Commission Official; Interview 36, July 2010, County Economic Commission Official; Interview 44, July 2010, County Economic Official

<sup>54</sup> Interview 36, July 2010, County Economic Commission Official

<sup>55</sup> Interview 31, July 2010, County Economic Commission Official

ultimate success or failure of ESER policies continues to depend on local implementation. Given entrenched interests and the many and sometimes seemingly conflicting demands placed upon officials, implementation of ESER policies is difficult and requires officials to find compromises with large enterprise players and consolidate local support by forming ad-hoc coalitions.

Not all sub-national governments have been successful in completing ESER mandates. In the months leading up to the end of the 11<sup>th</sup> Five Year Plan, the central government increased pressure on these local governments considerably to ensure completion of the national 20 percent energy intensity reduction target. As a last minute response, some sub-national governments undertook drastic measures to meet their energy intensity goals at the expense of the public. For example, in one county in Hebei province, the local government cut off electricity to hospitals, homes and rural villages, even to the point that one hospital was forced to close once every four days.<sup>56</sup> Such methods in Hebei and other regions forced an emergency note from the NDRC in September 2010 which banned short-term electricity cutting and production limitation methods that affect residential areas and public services.<sup>57</sup>

This research suggests that some regions such as Shanxi avoided this harsh, eleventh hour approach by preemptively bundling national policies with different local business and political interests. Local officials built implementation capacity by strengthening formal and creating informal incentives to improve implementation of some policies such as the Top-1000 Enterprise Program, and the ‘elimination of backwards production capacity’ and plant closure policy. This incentivization depended upon both the communication, explanation, and assurance of formal incentives and the use of informal means such as personal appeals, persuasion, and informal promises. In so doing, government officials brought the interests of local enterprises in line with the national interest in reducing energy use. To overcome the challenges of closing small industrial enterprises and inefficient production lines to meet energy efficiency targets, local implementers took into consideration the economic and employment interests of their localities to ‘soften the landing’ of enforcement, they bundled energy efficiency policy with policies of greater local importance to ensure smooth and ‘harmonious’ realization of energy goals, and took advantage of ‘windows of opportunities’ such as the Olympics and the economic downturn to decrease the risk of protests and other forms of opposition to government intervention. Officials’ ‘reframing’ of the national energy policy goals and its implementation provided the rationale for steps taken seemingly against the local interest. This ‘framing’ transformed national energy-saving policy from a conservation-oriented and restrained development framework to a growth model centered on the expansion of production, improved enterprise competitiveness, stable employment, and growing regulatory demands at the local level.

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<sup>56</sup> Xing Li, “Power Cuts Call for Energy Efficiency,” *China Daily*, September 10, 2010, available at [http://www.chinadaily.com.cn/bizchina/2010-09/10/content\\_11286604.htm](http://www.chinadaily.com.cn/bizchina/2010-09/10/content_11286604.htm), last accessed on September 23, 2010.

<sup>57</sup> “13 Dishi Jieneng Jianpai Xingshi Yanjun Fagaiwei Jinji Tongzhi Zai Gao Jingzhong” (“The Energy Savings and Emissions Reduction Situation in 13 Prefecture-Level Municipalities is Grim--the NDRC Emergency Notification Again Sounds the Alarm Bell”), *Shanghai Zhangquan Bao (Shanghai Securities Report)*, available at [http://news.xinhuanet.com/fortune/2010-09/18/c\\_12582559.htm](http://news.xinhuanet.com/fortune/2010-09/18/c_12582559.htm), last accessed on September 23, 2010.



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