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# Balancing Priorities, Aligning Interests: Developing Mitigation Capacity in China and India

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*Comparative Political Studies*

**Abstract**

Debates about how to respond to climate change have largely focused on the difficulties in agreeing on national targets for reducing greenhouse gas emissions. By assuming that the main obstacle to emissions reduction lies in the inability to reach agreement internationally, the current debate underplays the challenges of building the state capacity that will be needed to ensure mitigation takes place. The implementation of mitigation strategies is far from straightforward. It requires careful balancing of competing priorities and deliberate strategies to bring different interest groups on board. We analyse the way this balancing act has been carried out in promoting energy efficiency measures in China and India. The balancing act has been done differently as each country has tailored its approach to the specific context of competing priorities and differing state capacity. We encapsulate these differences by referring to China's

approach as 'state-signalling' and India's approach as a 'market-plus' approach. China's approach is more explicitly statist than India's, but in both countries the state plays a central role in building the support base for its policies through processes that we describe as the bundling of policies and interests. These bundling strategies are used to help build informal coalitions in favour of energy efficiency measures.

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**Keywords**

climate change, domestic politics, energy, coalitions, informal institutions, China, India

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## Introduction

Debates about how to respond to climate change have concentrated on the difficulties in agreeing targets for emissions reductions, and hence on the question of how to achieve an equitable response. The emphasis placed on reaching international agreement on high level targets assumes a neat path can be drawn from high level objectives to actual mitigation (Prins et al. 2010: 10), and thus underplays the political challenge of building the domestic support and forms of capacity that are needed to promote and sustain mitigation measures.

This paper unpacks the neglected question of what forms of state capacity are needed to pursue climate change mitigation measures in the area of energy efficiency. It does so by looking at how government agencies in China and India have balanced climate change mitigation against equally pressing policy priorities by manoeuvring creatively to overcome obstacles to policy implementation. The research focuses on how the relevant agencies have sought to bring different players together in order to form informal coalitions that have a common interest in mitigation objectives.

Our analysis focuses on China and India. As two of the fastest growing contributors to greenhouse gas emissions, their policies will have a major impact on global climate change. However, the tendency to lump these two countries together obscures some important differences. They published their national climate change strategies in 2007 and 2008 respectively, but the approaches taken to implementing these strategies differ both because the two countries are at very different stages of development and because their states have different levels and forms of capacity that they can draw on to drive implementation.

China, a country where strong authoritarianism coexists with a high degree of decentralisation, adopted a 'state-signalling' approach. The national government steered policy implementation by providing guidelines and concrete energy efficiency targets for local governments to follow. By contrast, India, where the centre lacks a comparable ability to ensure its policies are implemented, pursued what we describe as a 'market-plus' approach.

This approach draws on the high price of energy to incentivise energy efficiency measures. Despite its focus on market incentives, state capacity proves to be critical for the success of this approach as well, with the state being intensively involved in developing the players and rules that enable these market mechanisms to operate.

In both countries, we trace the policy process beyond drafting policy positions at the national level to look at the mechanisms the respective national agencies draw on to get them implemented. In China, national energy efficiency targets are allocated to provincial governments and provinces are the main starting point to understand state capacity and national implementation approaches. The research therefore analyses the implementation of national energy efficiency targets in Shanxi province, one of the largest coal-producing provinces, which is well-known for its high concentration of energy-intensive enterprises. In India, the research looks at the national Bureau of Energy Efficiency (BEE), which has been focusing on identifying suitable partners to promote energy efficiency including both state-level government agencies and private sector players. Given the incipient nature of the energy efficiency work done by most of BEE's state-level partners, we focus on BEE's attempts to develop a network of private sector energy service companies (ESCOs). Since these are located in major cities across the country, the case study element of the research is therefore not concentrated on a particular locality as it is in China. Given these differences, we focus on drawing lessons from two significant cases rather than making a direct comparison between them. The analysis draws on official documents and 137 semi-structured interviews conducted in China and India over the period from June 2010 to September 2011 with representatives from government, private and state-owned companies, and civil society organisations.[1]

[1] In China, the research focused on five municipalities and 15 counties in Shanxi in 2010. A follow-up visit in 2011 was used to trace the policies and initiatives started in 2010 and analyse their effects. A small number of interviews were also conducted in Inner Mongolia to provide a counter-example to Shanxi's relatively successful implementation record. The majority of interviewees were officials from economic commissions, environmental

## State Capacity, Coalitions and Bundling

Government policies are neither formulated nor implemented in a vacuum, yet debates about how developing countries respond to the challenges presented by climate change have tended to overlook the domestic political challenges to formulating and implementing policies to reduce their rising greenhouse gas emissions. In unpacking this issue we focus on how government agencies make use of the capacity that is available to them and how they utilise the capacity of the state to build a wider coalition in support of mitigation measures through strategies of policy-bundling and interest-bundling.

### *State capacity*

We follow Lant Pritchett's definition of state capacity as: 'the capability of governments to affect the course of events by implementing policies and programs' (Pritchett et al. 2010: 1). Charles Tilly draws on a similar definition when he argues that 'in a high capacity regime … whenever state agents act, their actions affect citizens' resources, activities and interpersonal connections significantly [whereas] in a low capacity regime, state agents have much narrower effects no matter how much they try to change things' (Tilly 2007: 16). The critical question, therefore, is what factors facilitate or hinder a state's capacity to implement mitigation policies, and what measures can be taken to overcome major obstacles to implementation.

Two additional points need to be taken into account in conceptualising state capacity. The first is that state capacity applies to policy formulation as well as implementation: capacity

protection bureaus, development and reform commissions, construction bureaus, and industrial enterprise managers involved in energy efficiency programmes. In India, interviews were conducted in 2010 and 2011 with government officials, energy efficiency and renewable energy companies, civil society organisations and academics. The largest set of interviews in India was with energy service companies (ESCOs). Interviews were used to gain insights into the relationships and strategies that support implementation with interviews spanning different sectors in order to look at how informal coalitions are developed and sustained.

must include the ability to weigh and balance competing interests in formulating policies that can credibly be considered to serve national objectives. The second is that the state's actions should not just impact on citizens but should do so in broadly the way that was intended during policy formulation. A degree of slippage is to be expected and is not necessarily undesirable – it is much more important that policies are made to fit the real world than that the real world should be made to fit those policies – but when policies primarily result in effects that were unintended we can hardly view this as an indication of state capacity. This problem of unintended consequences is well acknowledged in the development literature, most notably in James Ferguson's account of the unintended consequences of a development programme in Lesotho (Ferguson 1990).

These two caveats are important when we look at state capacity to implement climate change policies, because they alert us both to the scope for policies to be captured in order to serve particular interest groups and because they highlight the scope for mitigation strategies to lead to unintended consequences. As Navroz Dubash (2009a) argues, the problem of unintended consequences is particularly likely to be an issue in a context where the focus is on high-level targets, such as emissions caps, without consideration of the political and institutional obstacles to change. The critical question, therefore, is what factors facilitate or hinder a state's capacity to implement mitigation policies, and what measures can be taken to overcome obstacles to implementation. In this paper we focus on the strategies used to build coalitions that contribute to driving the mitigation agenda by bundling together competing policies and interests.

*Coalitions*

While the state has a vital role to play in tackling climate change, the nature of the collective action problem presented by climate change means it cannot address the problem single-handedly. With a large proportion of energy consumed by non-state entities or by state-owned

enterprises,[2] the state's capacity to deliver on mitigation targets depends on its ability to bring other parties on board.

Previous research highlights the important role of non-state actors in both the private and non-profit sectors in the formulation and implementation of environmental policy (Giddens 2009; Keck and Sikkink 1998; Newell 2000). However, these studies analyse cross-sector interactions as being between distinctive organisations that are characterised by their categorisation as part of the state, the market or civil society. In practice, these boundaries are often blurred (Lewis 2008) and shaped as much by personal relations as by the distinctive characteristics of each sector. A substantial body of research has drawn attention to the role of personal connections, often structured through social identity and usually between social elites, in shaping interactions between state and non-state actors (Evans 1995; Harrison 2012; Harriss-White 2003; Kohli 1994; Migdal 1994). These studies argue that the informal coalitions arising from such personal relations are a key explanatory variable in the ability of states to carry out activities ranging from industrialisation (Evans 1995) to poverty reduction (Evans 1995; Kohli 1994).

Our research findings support this hypothesis by illustrating the critical role that informal coalitions play in the implementation of climate change policies. We analyse the process of coalition formation as being about aligning interests and building relationships through a set of political practices that we refer to as bundling. We consider how such coalitions can be formed where different parties are not necessarily pursuing the same objectives. Environmental policies are not distributionally neutral (Baviskar et al. 2006): they may advance, neglect or even harm the interests of particular groups. This makes it important to look at how climate change mitigation is reconciled with other priorities.

[2] Although the state remains a major direct player in economic activity, the private sector (together with the informal sector in India) is the larger player in both economies (Bardhan 2010: 78-80). However, the state is particularly likely to be involved in some of the most energy intensive activities.

*Bundling*

Coalitions have to be built and sustained through the actions of individuals. Our analysis therefore focuses on the practices government agencies use in order to build informal coalitions that can advance and sustain policy objectives. In the case of climate change mitigation, the potential losers are likely to be more established and more influential than the potential winners. This means it is necessary to find ways of making mitigation policies more attractive, or at least alleviating their negative effects, in order to bring different interest groups on board. This is achieved through deliberate measures to align the interests of diverse groups that we refer to as 'bundling'.

Bundling is a strategy used in situations where the support for policies is uncertain given their redistributive, costly, or otherwise contentious nature. It refers to the creation of win-win scenarios so that different policy objectives and/or the priorities of different interest groups can be pursued simultaneously (Kostka and Hobbs 2012). Bundling can take different forms depending on the level and form of alignment of interests that it is designed to achieve. In this paper we identify and analyse two specific forms of bundling.

The first and more high-level form is *policy-bundling*. This refers to a set of techniques that are used to combine different policy objectives in order to facilitate the implementation of some or all of the policies in the composite bundle. Policy-bundling offers two major advantages for implementation. First, less popular policy initiatives can benefit from their association with policies that carry wider political support. For example, in China's 11$^{th}$ five year planning period, local authorities in Shanxi shut down scores of small mining operations in the name of promoting worker safety; in doing so, they achieved energy savings that were often an unstated objective. Secondly, policy-bundling can enable newer initiatives to benefit from the institutional structures and know-how of more established policy issues. For example, in India the bundling of climate change mitigation together with more longstanding initiatives to promote energy security makes it possible to draw on established structures that were set up

to serve earlier priorities, particularly agencies that promote renewable energy as a measure for enhancing energy security and extending access to electricity to remote rural areas.

The second form of bundling – *interest-bundling* – refers to deliberate efforts to bring together parties with distinct interests around a particular policy. Examples include linking the implementation of a policy to specific economic or other benefits – such as preferential access to government resources, expedited project approvals or negotiated agreements of mutual support – in exchange for the implementation of one or more policies. For instance, an enterprise may agree to comply with tough energy efficiency standards in exchange for strict enforcement by government that company leaders expect will push competing enterprises out of business.

These two forms of bundling are typically used in conjunction with each other. Together, they form the strategic core of the efforts undertaken in both countries to build informal coalitions capable of pursuing energy efficiency objectives. Through bundling, officials seek to align different interests and build relationships, thereby reconciling competing priorities and increasing their chances of achieving their own objectives.

**China and India: Political and Economic Contexts**

Looking comparatively at the experiences of China and India provides an opportunity to assess how two different countries with different political systems and at very different stages of development use bundling to improve the chances of effective implementation of their mitigation strategies.

There is often a temptation to lump China and India together as 'emerging powers'. It is true that both countries have been growing rapidly, that both are becoming increasingly influential on the international stage and that both have rapidly rising greenhouse gas emissions. However, China is significantly more developed than India, more urbanised and more industrialised. Despite its autocratic political system it has also pursued a more inclusive

model of development with the provision of basic education and healthcare having ensured that a much greater proportion of people than in India are equipped to participate in the formal sector economy.

These differences carry through to the significance of climate change within the two countries. China as a more developed and more industrialised country has substantially higher per capita emissions than India.[3] It is therefore unsurprising that, while many climate change initiatives are still in their early stages in India, the equivalent initiatives are more advanced and better integrated in China. This unavoidably limits the scope of the comparative conclusions we can draw. Our paper is therefore seeking to draw lessons from two significant cases more than it purports to make a direct comparison between them. In both countries, we are looking at processes that are still unfolding. This means we are able to look at the challenges that arise in building relationships, how interests can be aligned and relationships managed in order to form a coalition capable of overcoming major obstacles.

Comparisons of China's and India's political systems too often come down to a simplistic comparison between democratic and authoritarian systems, but this dichotomy has repeatedly been shown to provide an inadequate framework for understanding the differences between the two countries. Despite having pursued a gradual process of economic liberalisation over several decades, both countries retain a significant degree of state involvement in the economy including state ownership of key firms and large parts of the energy sector (Bardhan 2010: 55; Hsueh 2012).

At the same time, there are important variations between the two countries. Most notably, while China is characterised as a system where decentralisation and authoritarianism work hand in hand (Landry 2008), with a single authoritarian government under the Chinese Communist Party providing incentives and rewards for local officials to develop their

[3] Estimates typically put China's per capita emissions at more than three times those of India: the World Bank gives figures for 2009 of 5.8 tonnes per capita in China and 1.6 tonnes per capita in India.

localities, India's federal structure and multiparty system results in a greater degree of variation in how policy is implemented as 'the "Indian State", as ordinary people experience it, takes quite different forms in different regions' (Manor 2009: 18). Furthermore, India has a reputation as a state that is capable of formulating detailed and sophisticated policies but struggles to implement them. Lant Pritchett (2009) has encapsulated this problem by referring to India as a 'flailing state' – a state where the top echelons of the bureaucracy are detached from the limbs that are responsible for implementation.

This may lead us to expect less variation and swifter implementation of policies in China than in India, but it does not remove the significance of agential factors for climate change policies in China. Indeed, we demonstrate that China's more unified national approach has allowed substantial scope for leaders to manoeuvre and coalesce to prioritise or deprioritise particular environmental issues at the local level. By contrast, we find that the national government in India, with much more limited state capacity and a weaker record of turning policies into actions, has sought to involve itself more directly in how climate change mitigation takes place because national government agencies are less able to have confidence that policies will be implemented at the subnational level.

**Differences in Approach**

Climate change has begun to feature more prominently on the policy agenda of both countries. In 2007, China's first climate change strategy was published by the National Development and Reform Commission (NDRC), a powerful bureaucracy under the State Council in charge of China's overall long-term economic and social planning.[4] The 62-page document titled *China's National Climate Change Programme* sets out China's approach to climate change mitigation (NDRC 2007). The attention paid to energy production and energy efficiency reflects China's view that energy security is vital for the country's future development path.

[4] The State Council is China's highest decision-making unit in the executive branch of the government.

India's flagship document on climate change, the *National Action Plan on Climate Change*, was launched by the Prime Minister's Council on Climate Change in 2008 (PMCCC 2008). The Action Plan is a prominent and widely cited document that provides an indication of the increased attention given to climate change. It sets out eight separate 'national missions' relating to the twin concerns of mitigation and adaptation. In the area of mitigation, the two core missions are the National Solar Mission and the National Mission on Enhanced Energy Efficiency. In both national plans, the institutional architecture through which policies will be implemented takes a subsidiary role. However, these documents are not meant to be manuals for implementation but rather policy tools that help to frame the issue in a way that builds support and so increases the chances of effective implementation. Thus, despite the limited focus on implementation in official documents, the challenges of implementing mitigation measures have shaped the way in which these strategies are taken forward.

*China: State-Signalling Approach*

We describe China's approach as 'state-signalling'. In this approach, the national government provides guidelines and concrete energy efficiency targets for local governments to pursue. These 'signals' from the national government act as observable indicators of policy preferences (Stern and O'Brien 2012), indicating to local governments how much emphasis they should place on climate change mitigation as compared to other policy priorities. The confidence that these signals will be taken seriously by local government has enabled the national government to take a hands-off approach to how the targets are met. Signals are accompanied by concrete targets and incentives for local officials. Broad but credible policy goals allow for significant policy heterogeneity in how mitigation measures are woven into existing policies.

*India: Market-Plus Approach*

National agencies in India are less able to have confidence that the priorities outlined in the National Action Plan will be implemented and are therefore more closely engaged with the question of how implementation takes place. Their approach has been to pursue what we describe as a 'market-plus' approach. Rather than the centre setting targets as it does in China, it draws on the high price of energy to incentivise energy users to improve their energy efficiency and thereby make savings on their energy bills. Voluntary mechanisms are used as a first step in building sufficient consensus, following which mandatory measures can then be put in place that set the boundaries for market mechanisms. This includes setting minimum energy efficiency standards for consumer goods and introducing a mandatory emissions trading scheme for designated energy intensive sectors. While this approach emphasises price incentives, the state has been intensively involved in seeking to build the players and rules that enable these market mechanisms to operate.

In both China and India, agencies have adjusted their policy approach to the particular nature of their competing policy priorities and the institutional structures available to them. The 'state-signalling' and 'market-plus' approaches therefore emerge as responses to differing local contexts, but in both cases strategies have focused on the need to bring different parties with otherwise divergent interests on board to build coalitions in favour of energy conservation measures.

**China and State-Signalling**

China's state-signalling approach emerges from the need to balance competing priorities, combined with the existence of accountability structures that are sufficiently strong to allow trade-offs to be made at the sub-national level. The need to make these trade-offs drives the formation of informal groupings as government officials seek to reconcile their own political interests with those of powerful interest groups.

*Competing Policy Priorities*

Climate change and energy issues rank increasingly highly on the political agenda in Beijing. There is a strong consensus within the Communist Party that economic growth and social stability require the availability of adequate energy supplies. China's dwindling natural resources and heavy reliance on fossil fuel imports help to focus attention on the need to produce and consume energy more efficiently.[5] In the early 2000s, energy intensity[6] levels began to increase for the first time since 1978, which served as a catalyst for national energy conservation measures. Many of China's mitigation policies also reduce air pollution, which offers an important co-benefit for policy makers as air pollution has worsened significantly over the past decades. The environmental costs associated with air pollution ranged from one to four percent of GDP in 2003 (World Bank 2007: xiii) and an estimated 750,000 people die prematurely from respiratory illnesses every year. Pollution also increasingly causes social unrest with more than 51,000 pollution-related protests in 2005 alone (China Daily 2006). National leaders in Beijing therefore believe that mitigation policies can also help to promote energy security and prevent politically destabilising environmental problems.

Despite its growing profile, climate change is one of a number of competing priorities. China's leaders face many pressing challenges, including the need to increase employment, reduce the urban-rural income gap, reform rural land ownership, and improve the provision of affordable housing and health care services. Many of these priorities are of crucial importance as failing to address them could imperil domestic social and political stability. The credibility and sustainability of mitigation strategies therefore depends on the government's ability to demonstrate how they can contribute to other policy priorities.

[5] Over 50 percent of China's oil comes from overseas and China became a net importer of coal in 2009 despite having one of the world's largest coal reserves. Experts project that China could exhaust domestic sources of petroleum, natural gas and coal in seven, 22 and 75 years respectively (Dewey & LeBoeuf LLC study cited in Report to Congress 2010: 184).

[6] Energy intensity is the energy consumed per unit of GDP.

The implementation of national policy objectives is neither neat nor linear. China's combination of decentralisation and authoritarianism means national priorities are translated through an 'intricate bureaucratic system consisting of a multitude of self-interested administrative entities' (Conrad, 2010: 52). This leads to significant variation in the ambition and approach of climate change mitigation in different localities. However, in contrast to India, national priorities carry sufficient authority that they cannot be ignored. The combination of decentralisation and authoritarianism therefore provides sufficient incentive for national priorities to be taken seriously but also sufficient flexibility for decisions to be taken at the local level about how mitigation objectives should be achieved and how much weight they should be given against other competing priorities.

*Strengthening and Utilising Existing Institutions*

Over the past decades, leaders in Beijing have built up implementation capacity and strengthened incentives to comply with energy efficiency directives. This has been done by using existing institutions to promote new priorities, integrating energy reduction goals into national economic plans, and developing ways to incentivise officials to prioritise energy efficiency while at the same time giving them sufficient room for policy entrepreneurship at the local level.

Chinese policymakers have worked to build up a bureaucracy with sufficient authority and capacity to oversee China's energy efficiency and climate change strategy, including by using existing institutional structures to incentivise local leaders to take account of a new priority. One of the first attempts to centralise and strengthen climate change policymaking was the establishment in 1998 of an inter-ministerial coordination mechanism called the National

Coordination Committee on Climate Change.[7] The Coordination Committee brought together several high-ranking ministerial bodies under the leadership of the powerful National Development and Reform Commission (NDRC).[8] As a high ranked ministerial body, this committee provided a platform to debate and align divergent interests by bringing together departments with competing priorities.

In addition to the creation of this ministerial grouping, the bureaucratic agencies working on energy-related issues were restructured and strengthened. In 1998, a number of different energy-related agencies were consolidated into an Energy Bureau under the authority of the NDRC, but the bureau lacked the authority to coordinate between higher-ranked ministries and major national state-owned enterprises (Downs 2008).[9] In 2010, the National Energy Commission (NEC) was established to act as a new 'super ministry'. The NEC is directly under the supervision of the State Council and its administrative rank is above those of other ministries, giving it the muscle needed to drive energy saving initiatives. Its members include high-ranking officials and ministers reflecting the importance of integrating other ministries into the policy formulation process and linking climate change mitigation goals with other priorities.

However, high-level coordination and direction is not sufficient. Successful policy implementation requires buy-in from local leaders who can then drive the process forwards. Policy-makers in Beijing had to draw on pre-existing structures to incentivise local officials to find the most appropriate ways of pursuing energy efficiency policies in their areas. By

[7] The National Coordination Committee on Climate Change (NCCCC)'s official name in Chinese is *Guojia qihou bianhua duice xietiao lingdao xiaozu,* which directly translates as the National Climate Change Coordination Leading Small Group.

[8] NDRC's role as manager of the NCCCC suggests that even in the late 1990s the top leadership viewed climate change as a key national priority. This openness to the findings of climate change scientists is probably related to the technocratic nature of the Chinese political elite: more than 22 percent of current State Council members are trained engineers and 26 percent hold a PhD (Li, 2010: 7).

[9] The Energy Bureau was later elevated to a vice-ministerial body and renamed the State Energy Administration; but, as a vice-ministerial body, it still had insufficient administrative rank to coordinate between higher-ranked ministries and major national state-owned enterprises.

integrating energy efficiency and emissions reduction goals into the two most recent national Five-Year-Plans, the 11th (2006-2010) and 12th (2011-2015), Beijing has added teeth to the goals outlined in China's National Climate Change Programme. For the first time, the 11th Five-Year-Plan introduced a mandatory target of a 20 percent reduction in energy intensity by 2010 against 2005 levels. In the 12th Five-Year-Plan period, local governments have been tasked with achieving a further 16 percent reduction in energy intensity.

The inclusion of an onerous energy intensity target in the national Five-Year-Plan served as an important signal by national governments to local governments and state-owned enterprises, making it clear that implementation of energy efficiency goals was a matter of high priority. In 2010, Chinese Premier Wen Jiabao called for local officials to use an 'iron hand' (*tie de shouwan*) when implementing energy efficiency and emissions reduction policies (Wen 2011). The 'iron hand' was a phrase frequently used by local government officials during fieldwork interviews, an indication that signals from on high are well understood and taken seriously at local levels.

Although energy efficiency targets are set by the NDRC at the national level, they vary for each province. The provincial targets in the 11th Five-Year-Plan period ranged from 12 percent to 25 percent and from 10 percent to 18 percent in the 12th Five-Year-Plan.[10] This variation shows that central planners in Beijing do not try to impose a one size fits all policy upon sub-national governments. Provinces, in turn, include energy efficiency targets in the provincial-level planning documents and allocate targets across departments, municipalities and enterprises. Local government officials often inflate the targets when passing them on to lower tiers of government and bureaus in order to allow for slippage as they anticipate that

[10] Case-by-case negotiations took place in many provinces. A tug-of-war has emerged among coastal and non-coastal provinces in terms of who should carry the main burden of climate change mitigation. Applying the 'common but differentiated responsibility' concept to China's domestic context, central and western provinces emphasise their need to 'develop first'. Eastern provinces on the other hand argue that they are already starting from a low level of energy intensity and that it would be more cost-effective to focus on energy and emissions-intensive regions in western and central China.

some energy efficiency efforts will fail or that the results will be questioned by national inspection teams (Kostka, 2014).

Top-down negotiations of targets combined with bottom-up feedback processes allow for communication and re-evaluation of goals and implementation practices. In 2009, Shanxi province's initial target of reducing energy intensity by 25 percent in the 11th Five-Year-Plan was reduced to 22 percent after provincial leaders realised that the original target was unattainable. National leaders' acceptance of this reduction illustrates the flexible pragmatism among central planners: rather than seeing targets as a sacrosanct statement of policy intent, national planners are prepared to adjust them if necessary. A prerequisite for setting credible and attainable targets is frequent information exchange between local and national authorities, which could not have been achieved without underlying reporting practices and personal relationships on which it was able to build.

Like other mandatory[11] targets in China, energy efficiency targets are built into the cadre responsibility and evaluation system, an incentive system which evaluates and monitors the performance of public officials holding a position in the Party or government.[12] Under this system, local leaders sign individual responsibility contracts with the upper-level government which aims to secure further commitments from leading government officials. These personal contracts specify annual energy reduction requirements for the cadre's locality and are signals to local officials indicating that energy efficiency issues are of high national priority. To advance up the ladder and receive bonus payments, cadres need to meet these targets as part of their annual performance assessment; repeated non-implementation can be penalised through redeployment to a remote locality or, less frequently, expulsion from office.

[11] Mandatory targets refer to targets that are binding for governments or state-owned enterprise managers. Their mandatory status means they impact on the career progression of government officials.

[12] The term cadre refers to a public official holding a position in the Party or government (see Whiting (2001) and Edin (2003)).

Most managers of state-owned enterprises also fall under the annual cadre evaluation system, meaning they have strong incentives to improve energy efficiency. Like government officials, the managers of state-owned enterprises can be denied year-end bonuses and subjected to punishments if they fall short of their annual targets, while good performance provides an opportunity for career advancement. If managers significantly increase energy efficiency, they may receive promotion to a position within the government apparatus. For example, it is common knowledge among Shanxi enterprise managers that the former head of the largest iron and steel plant in Shanxi was promoted to deputy governor of the province after improving efficiency and production standards at the company.[13]

Despite the credibility of this incentive system, it does not always deliver the intended outcomes as some local leaders select short-term, low quality implementation approaches or engage in 'selective policy implementation' (O'Brien and Li 1999). In some localities, mandatory energy intensity targets were fulfilled only at the last minute through short-term measures such as cutting electricity to hospitals, homes and rural villages. Similarly, some local governments used a measure called 'sleeping management' (*xiumian guanli*). Towards the end of the 11th Five-Year-Plan, they required large enterprises which had substantially exceeded energy intensity standards to close in rotation for several months. In this way, local leaders could meet their energy intensity targets without actually having to close any of the large enterprises completely and suffer the social and economic consequences that would result (Kostka and Hobbs 2012).

[13] The finding that managers of state-owned enterprises (SOEs) are generally quite responsive to national targets calls into question the conventional view that SOEs, because of their closer informal connections (*guanxi*) with government authorities, tend to have more opportunities to avoid environmental regulations (Lo and Tang, 2006: 204). Whereas officials receive steady information feeds from SOEs, they find private enterprises to be much more opaque. Yet, while SOE managers in the Party hierarchy have strong personal incentives to abide by energy efficiency policies, they tend to be less responsive to the demands of low-ranking local government bureaus. SOE leaders are often senior in Party rank to directors of local Economic Commissions or Environmental Protection Bureaus, making it difficult for the latter to compel compliance with environmental standards. In general, the higher the administrative rank of an SOE, the more difficult it is for local government officials to enforce unwelcome regulations on SOEs. In one locality, for instance, officials complained that a central-level state-owned energy supplier located in their county refused to prioritise energy efficiency.

In other cases, anecdotal evidence from fieldwork suggests some localities falsify their reported energy intensity achievements. One locality reported that it had exceeded its energy intensity reduction targets for the 11th Five-Year-Plan period. However, the accuracy of these figures is questionable since leading officials in this locality indicated during an interview three months before the end of the evaluation period that they were a long way from meeting the target. In general, a combination of varied energy efficiency measurement methods and weak monitoring capacity leaves room for cadres to play the 'game about numbers' with their superiors. National and provincial government authorities frequently send out inspection teams to verify data and improve information flows. These cases demonstrate the perverse incentives the state-signalling approach can produce, but the lengths municipalities go to in order to demonstrate compliance also indicate that these are not targets local governments feel able to ignore.

*Informal Coalitions & Bundling Tactics in Shanxi Province*

The room for manoeuvre in how local leaders decide to respond to central directives on energy efficiency is evident when we look at particular cases. Shanxi province, a region well known for its coal production and large concentration of energy-intensive industries, exceeded national energy efficiency targets while many other provinces failed to do so, or only did so at the last minute through short-term measures that did not yield lasting change. Critical to Shanxi's success has been the way in which local leaders have responded to external pressure from Beijing[14] by finding ways to reconcile national priorities with local interests.

[14] Shanxi's leaders developed provincial plans that were even more ambitious than the national mandate. In 2005, five out of Shanxi's 11 municipalities were ranked among the 30 most polluted of the 113 cities examined by the national Ministry of Environmental Protection. Shanxi subsequently faced increasing national media coverage of high pollution in 2005 and 2006, which served to push pollution issues up the policy agenda of provincial leaders. Moreover, fatal mining accidents across Shanxi regularly featured in the Chinese media. Indeed, mining safety problems are synonymous with Shanxi, much to the embarrassment of provincial leaders. Serious pollution and

Shanxi's approach to meeting its targets demonstrates the flexibility local leaders have in deciding how to respond to central directives as there is large variation in the implementation practices used by municipalities and counties across the province. While we see evidence of local foot-dragging in some parts of the province, there is also a high degree of policy innovation in how local leaders undertake costly (and unpopular) energy efficiency measures.

Linfen, a municipality well-known for heavy pollution and coal production and ranked as one of China's most polluted cities in 2005, provides an example of implementation shirking. Despite extreme pressure from provincial and national governments, by summer 2010 Linfen had only achieved 60 percent of its 11th Five-Year Plan energy efficiency targets and provincial leaders complained about the lack of cooperation from Linfen's leaders. Part of the problem was leadership instability, as the frequent occurrence of mine accidents and work safety scandals forced local Party secretaries to resign. This contributed to weak leadership by government, which meant alliances were not formed between top government leaders and local businesses to drive the implementation of energy efficiency.

By contrast, other municipalities in Shanxi such as Yangquan or Yuncheng were more successful in meeting energy efficiency targets and even surpassed their targets. In these localities officials frequently reinforced formal incentives such as subsidies and guidelines through the use of informal mechanisms such as personal appeals, persuasion and promises. They sought out 'bundling' opportunities and identified coalition partners in both government departments and local business enterprises. Local leaders formed alliances with large state-owned and, less frequently, private enterprises to create flagship enterprises and demonstration projects which reflected well on local government's efforts to green the local economy.

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frequent accidents in Shanxi have also attracted the attention of the international media and, in response to this growing pressure, Beijing has kept an especially watchful eye on Shanxi's progress on energy saving issues.

Local government leaders used policy-bundling to gain more broad-based support within the province for costly energy efficiency measures. They sought to soften potentially controversial policies by presenting energy efficiency policies in ways that play to interests in their localities. The 'elimination of obsolete production capacity' and small plant closure policy are presented by local officials as programmes to upgrade and restructure production capacity. Official documents include phrases like 'productivity enhancement', 'technology upgrading', and 'productivity innovation'. This framing is used to emphasise that the costly energy saving policies will provide social benefits in the long-run, such as more local employment opportunities and improved workplace safety. This helps to create coalitions to support implementation of initiatives which are *prima facie* detrimental to particular interest groups or the general public. Energy efficiency measures were thus linked with broader efforts to upgrade technology in heavy industry, improve local air quality and promote safe working conditions. These distinct policy issues were bundled together in Shanxi when officials closed small, inefficient and highly polluting coke, cement, steel and coal mining enterprises. When closing down small energy inefficient enterprises, officials in the Shanxi Provincial Economic Commission, the agency in charge of overseeing provincial industrial energy conservation, worked together with the Coalmine Safety Administration Bureau. Linking energy efficiency to more popular initiatives related to safety and pollution helped to build public support and reduced the risk of opposition from local businesses.

In addition to using policy-bundling to strengthen the case for closing energy-inefficient firms, officials used interest-bundling to bring larger enterprises into a mutually beneficial relationship. Officials commonly persuade enterprises through unofficial means, such as personal appeals, preferential treatment, and compensatory benefits for enterprises that make voluntary efforts to reduce energy consumption. The Shanxi government approved provincial energy efficiency standards that were more stringent than national standards in the steel and magnesium industries, which drove smaller enterprises out of the market. Large and

politically important steel and magnesium enterprises benefited from the closure of some small plants because it decreased low-cost competition and so increased their market share. Officials used this as a carrot to induce large enterprises to improve their energy efficiency in return for maintaining favour with local authorities. The closure of small enterprises has major economic drawbacks in that it can depress local GDP, tax revenue and employment. To ameliorate these problems, government leaders often persuade bosses of larger enterprises to absorb some additional workers and add additional production capacity in order to offset local losses. Such persuasion tactics are particularly effective when local officials and managers have close personal or professional relationships.

China's mitigation efforts do not unfold neatly and in a linear way from the formulation of national policy. Implementation of national energy policies relies on creative manoeuvres by local government officials. Local leaders use bundling to overcome obstacles to implementation by strengthening formal and informal incentives to bring the interests of enterprises in line with those of the state. While there is disagreement and contestation about how much priority should be given to mitigation objectives, there is clearly an expectation that national objectives will be taken seriously in local decision making. This contrasts with the picture we find in India where national government agencies have had to focus on identifying and developing the partners that they believe are best able to give life to national objectives.

**India and the Market-Plus Approach**

Unlike in China, energy efficiency policy in India does not operate through a cascading chain from national target setting to local implementation. The national agency responsible for energy efficiency seeks to formulate policy and set the broad parameters, but it also seeks to build the capacity of its state-level counterparts *and* to work directly with particular bodies in helping them improve their energy efficiency. This means our analysis requires a different

approach to that used for China: rather than looking at how national policy is implemented at the local-level, we examine the strategies used to build the capacity needed to promote energy efficiency measures. This means looking at a group of actors whose relationships are being shaped by the policies they are involved with.

India's market-plus approach focuses on ensuring consumers, businesses and government departments have access to the sources of information and finance they need to implement energy efficiency measures, concentrating on areas where energy efficiency measures would deliver financial savings but where 'market failures' mean these actions are not being taken. It is also envisaged that an emissions trading scheme for designated energy intensive sectors of the economy will strengthen the existing price incentives. However, the market-plus approach does not simply rely on price incentives; it requires the state to be actively involved in creating both the rules and the players for those market incentives to operate. As in China, the state has used strategies of policy-bundling and interest-bundling to overcome obstacles. The focus has been on achieving a balance with competing priorities and alleviating weak institutional capacity by building a coalition that is intended to augment the state's limited capacity to drive forward its policies on energy efficiency.

*Competing Policy Priorities: Bundling Co-benefits*

Environmental issues, including climate change mitigation, take on a lower policy priority in India than in China. This is unsurprising given India's lower levels of development, lower $CO_2$ emissions and the high proportion of rural households that are still waiting to be electrified.[15] However, the challenges of mitigating climate change and meeting the country's growing energy needs have become increasingly interconnected. The high transmission losses

[15] In 2005 412 million people lacked access to the grid and only half of rural households were electrified (Urban et al. 2009: S47). Extending access to energy has been an important political issue; in the 2004 election 'a popular slogan was "bijli, sadak, pani" (electricity, roads and water), identifying power as one of the basic needs of the common man' (Sharma 2007: 584).

incurred in the distribution of on-grid electricity together with the high economic and administrative costs of renewable energy mean energy efficiency measures can look like a more effective way of meeting growing energy needs than producing more power and a substantially cheaper way of checking the rise in $CO_2$ emissions than renewable energy. This co-benefit combined with a strong appreciation of the negative impact climate change will have on India's development has led to climate change mitigation measures assuming greater priority in recent years.

The increased policy space given to climate change does not mean it has trumped other priorities, but rather that it has been incorporated into, and contributed to reshaping, earlier policy priorities. Like any sophisticated policy document, the *National Action Plan on Climate Change* is partly an exercise in framing. It positions the case for mitigation in the context of existing policy priorities, focusing on the scope for mitigation to advance existing priorities. It presents India as faced with the 'challenge of sustaining its rapid economic growth while dealing with the global threat of climate change' (PMCCC 2008: 1). The document carefully weaves together two narratives. India's long-standing position that 'the principle of equity ... must allow each inhabitant of the earth an equal entitlement to the global atmospheric resource' is reasserted and formulated as a commitment that 'its per capita greenhouse gas emissions will at no point exceed that of developed countries' (PMCCC 2008: 2). With per capita emissions that are less than one third of those in China and one fifteenth of those in the United States,[16] this commitment would require no action from India for the foreseeable future. Yet, it justifies immediate actions that go beyond this commitment by drawing on the language of 'co-benefits' to highlight the opportunities for actions that will both lead to reductions in $CO_2$ intensity and, simultaneously, bring benefits in other areas. The Action Plan thus 'identifies measures that promote our development objectives, while also

[16] The Action Plan cites figures of 1.02 tonnes per capita for India, 3.60 tonnes per capita for China, 9.40 tonnes per capita for the EU and 20.01 tonnes per capita for the US.

yielding co-benefits for addressing climate change effectively' (PMCCC 2008: 13). The language of co-benefits is thus used to bundle climate change mitigation together with more established policy priorities.[17]

*Constraints and Obstacles to Energy Efficiency*

Policy-bundling is partly a discursive device to frame and package priorities in ways that seek to reconcile competing priorities, but it also reflects the reality that new policies usually have to be implemented through existing structures. As in China, discussion of the institutional architecture through which policies will be implemented takes a subsidiary role in the Action Plan with only very limited detail under the separate missions, and just over half a page towards the end of the document. However, this does not mean that the strategy is naive about the challenges of implementation. Despite the limited focus on implementation in official documents, the energy efficiency measures adopted in recent years have been deliberately tailored to the available institutional capacity, the limitations of which were exposed by the shortcomings of earlier policy measures.

India has been pursuing measures on energy efficiency since the 1970s when the oil price shock led to a number of agencies being formed to promote energy efficiency. Balachandra et al. cite an early report produced in 1983 by the Inter-Ministerial Working Group on Energy Conservation, which stated that energy savings could be achieved at just five to ten percent of the cost of producing new energy (Balachandra et al. 2010: 6431). In 1989 the Energy Management Centre was formed as a subsidiary of the Ministry of Power. Energy efficiency measures achieved higher status with the introduction of the Energy Conservation Act in 2001 and the subsequent creation of the Bureau of Energy Efficiency (BEE) in 2002 to implement the terms of the Act.

[17] In contrast to the focus on wider environmental co-benefits in China, these co-benefits are understood primarily in economic terms.

The Energy Conservation Act meant that BEE had greater authority than its predecessors, but this was not matched by the capacity to enforce its policies. Indeed, BEE started from an unpromising position faced with three potentially overpowering constraints: the relatively low profile of energy efficiency as a policy issue, misaligned incentives where the actual cost of power is frequently borne by somebody other than the user of that power, and its exceptionally limited organisational capacity.

Energy efficiency encounters the same problem as mitigation strategies more generally: it is one of a number of competing priorities and often subservient to more pressing priorities. The passing of the Energy Conservation Bill in August 2001 'went unreported by all the leading newspapers and wire services' (Natarajan 2005: 154).

The problem of misaligned incentives where some large energy users are insulated from the cost of their energy consumption presents an obstacle to using price incentives to promote energy efficiency measures. In relative terms, 'India is an efficient user of energy (in broad GDP terms), and is not shy of imposing taxes on energy' (Joshi and Patel 2009: 5). As a result, the relatively high cost of power in the industrial sector[18] has promoted significant strides towards energy efficiency. By contrast, the cost of electricity for large farmers has always been a major political issue.[19] At the state level, leaders often 'promis[e] free or highly subsidized power supplies to farmers' (Sharma 2007: 584) and residential consumers, who collectively 'account for more than half of the total electricity units sold' (Bardhan 2010: 56). These subsidies promote inefficient energy use in agriculture where larger farmers may use significant quantities of electricity to pump water for irrigation. The result is 'a principal-agent problem that ... separates the responsibility for specifying, installing, operating, and/or

[18] Navroz Dubash suggests that 'in PPP terms, industrial tariffs for electricity are twice as high as in China and four times as high as in the US' (Dubash 2009b: 6-7, see also Bardhan 2010: 56).

[19] While these subsidies are justified in the name of the poor, it is the large farmers who benefit most. One study found that in the state of Andhra Pradesh poor farmers cultivating land areas below two hectares only get five percent of the total electricity subsidy (cited in Bardhan 2010: 46).

maintaining energy-using equipment from the accountability for energy costs' (Sorrell 2009: 343).

BEE's organisational capacity was initially very limited. It started with few staff and a heavy reliance on consultants. Energy is a concurrent function, with responsibility shared between the centre and the states. Existing agencies were selected in each state to take on responsibility for energy efficiency. In many states, this responsibility was assigned to the state-level Renewable Energy Development Agencies (REDAs) whose primary mandate is to promote renewable energy.[20] They are facilitative bodies and not in a position to roll policies out across their respective states as their presence is typically limited to state capitals. Like BEE itself, these agencies thus lack capacity to promote energy efficiency measures throughout the economy.

Given these constraints, BEE could easily have sunk without trace. The fact that it has been able to build the profile of both the organisation and its policies is due to how it has manoeuvred within these constraints. Key has been the decision to focus on incremental steps where there is a realistic prospect of impact. The major focus has been on building capacity by using visible leadership and policy successes to boost the profile of the organisation, and market-based incentives to forge a coalition that can promote energy efficiency measures more broadly.

*Co-benefits and Coalitions: Responding to Capacity Constraints*

BEE's low organisational profile and limited capacity, together with those of its state-level counterparts, meant it lacked both the clout and the physical presence to enforce measures on energy efficiency. With the exception of agriculture, the cost paid for power is usually high and many users are confronted by significant power shortages that impose additional costs. In

[20] Renewable Energy Development Agencies (REDAs) were set up in each state to promote renewable energy in line with the national priorities of the Ministry of New and Renewable Energy (MNRE) and the Indian Renewable Energy Development Agency (IREDA).

a country where per capita energy consumption is still very low and access to power at affordable rates remains an electorally important issue, this meant that energy efficiency measures that brought down energy costs were more likely to prove acceptable than punitive measures.

In line with the narrative of the National Action Plan, BEE has thus focused on promoting the co-benefits of energy efficiency measures. This strategy is designed to build a coalition in favour of energy efficiency by seeking to make it in the interests of a wide range of players to pursue or promote energy efficiency measures. To do this, BEE concentrated on the areas where energy efficiency would bring co-benefits, particularly cases where the co-benefit came in the form of savings on energy costs. The focus on co-benefits is the first step towards strengthening market-based incentives through the introduction of an emissions trading scheme called Perform Achieve Trade (PAT) for large industries in designated energy intensive sectors.[21] The PAT scheme marks a shift from voluntary to mandatory approaches to energy efficiency. As with China's targets for subnational government, the targets under the PAT scheme are not set on a one-size-fits-all basis. Recognising the massive variation between the most and least energy efficient firms, BEE has sought to avoid crippling the worst performers by giving them lower targets with a vision of gradually closing the gap between the best and worst performers. This approach is a pragmatic response to the need to balance energy efficiency with the competing developmental priorities highlighted above. Just as importantly, though, BEE has recognised that an emissions trading scheme will not prove effective if enabling mechanisms are not put in place to help firms find ways to improve their energy efficiency.

Co-benefits are shaped by particular policy decisions that bring together distinctive policy priorities to provide multiple arguments for a particular action. This means co-benefits are not

[21] For a discussion of the PAT scheme, see Bhattacharya and Kapoor (2012).

simple win-win scenarios; rather, they are shaped by particular policy decisions. A focus on co-benefits is therefore underpinned by deliberate strategies of policy-bundling and interest-bundling. India's focus on market incentives thus requires the relevant government agencies to be active in creating the conditions for these markets to operate. This includes creating the rules of the game but also facilitating the emergence of the players who will play that game. BEE sought to identify ways it could draw attention to areas where energy efficiency measures were not being taken even though they would lead to financial savings. It attributed such cases of 'market failure' to a lack of knowledge about the potential for energy savings and a lack of finance to fund the upfront investments that would deliver savings. It also recognised that incentives are sometimes misaligned, particularly in the public sector where the body responsible for the cost of installing and maintaining equipment does not always bear the cost of electricity, meaning it has little incentive to improve energy efficiency. BEE's approach thus focuses on aligning the incentives and knowledge for action by improving access to information and financing.

The challenge for a small organisation with limited reach was how to ensure its message was heard. This meant boosting the profile of the organisation. One of the most visible information strategies was the introduction of an energy efficiency labelling programme for electrical consumer goods in 2006. The programme used a star rating scheme to provide consumers with information about the energy consumption of different appliances. It started on a voluntary basis and was later made compulsory for some products. With manufacturers paying a small fee for printing labels indicating their star rating, the manufacturers were also paying for BEE's logo and then displaying it on their products. A relatively straightforward policy initiative thus helped BEE to build up its profile before seeking to make progress on more ambitious objectives. Demonstrating its ability to formulate policies and then ensure their effective implementation also helps to build the organisation's credibility within the policy sphere.

Most policies cannot provide a built-in publicity mechanism like the energy efficiency labelling programme. The visibility and profile of BEE's leadership has therefore been critical for raising the profile of its policies. With a well known and respected head, BEE has been able to utilise his reputation to boost the profile of both the organisation and its policies. He is regularly invited to give presentations at conferences and workshops, and a number of interviewees said they were aware of BEE because they had met him at such forums. For example, the environmental forums established by business associations organise annual conferences where they bring businesses together to discuss environmental issues and invite speakers from government agencies. The business associations benefit from this by demonstrating their ability to bring influential and senior government officials to their events, which in turn benefits members wishing to understand the direction of government policy, while BEE benefits from the opportunity to promote and explain its policies. These business associations have provided a readymade and willing network that helps BEE to inform larger businesses about its policies.

*Promoting new partners: BEE and the energy service companies*

BEE recognised that it could not reach sufficient businesses and government entities on its own, and that many lacked access to personalised information about energy efficiency measures that would save them money. To address this, BEE has sought to promote the emergence of a network of energy service companies (ESCOs) based on a business model that, in theory, gives them a strong interest in pushing the energy efficiency agenda.[22] The ESCOs are intended to act as facilitators with the technical expertise to make recommendations on

[22] Energy service companies provide advice on how to improve energy efficiency. They may also facilitate access to finance or manage implementation. Performance-based contracts where the ESCO's payment is linked to the savings achieved through energy efficiency are generally considered a defining feature of the ESCO model (Delio et al. nd: 3), but in practice many accredited ESCOs spend much of their time producing energy audits.

energy efficiency measures and the financial standing to be able to facilitate access to credit when necessary.

The ESCO model provides a good example of the level of state involvement required by India's 'market-plus' approach. Having identified the need for the formation of such companies, BEE has been actively involved in promoting their creation and facilitating their activities. It has required specified government bodies and private companies to commission energy audits, thereby significantly expanding the field of work for which ESCOs compete and so effectively creating a market that barely existed before. In an effort to ensure the success of the ESCO model, BEE has also shaped the rules by which this market operates by introducing a ratings system to accredit ESCOs, with accredited ESCOs listed on BEE's website. BEE has therefore not only sought to create the market but also to regulate who plays in that market.

BEE has shown flexibility in how it seeks to insulate ESCOs from bureaucratic obstacles. Unpredictable and slow payments can significantly increase the cost of doing business, while results-based payments are inherently difficult to enforce. ESCOs suggest that payment can be particularly unpredictable when working for government agencies. Even if they can be confident that their contract will eventually be honoured, they may have to tolerate delays and spend time chasing payment. In response to these challenges, BEE has created a new quasi-private organisation called Energy Efficiency Services Limited (EESL). EESL is a joint venture undertaking of a number of public sector bodies and is therefore able to combine the freedom of a private sector organisation with the influence of a government agency. This makes it well placed to mediate the process of government agencies contracting and paying individual ESCOs, which is intended to provide ESCOs with a simplified mechanism so that they have to engage with EESL, rather than dealing with multiple government agencies.

The creation of EESL provides a clear example of the adaptive flexibility that characterises BEE's market-plus approach. However, it also demonstrates the limitations of seeking a technocratic solution to weaknesses in state capacity. The ratings system has focused on the need for financial resources and technical expertise rather than the skills to engage strategically with the question of how to get policies implemented.[23] This focus on technical knowledge and access to finance has meant ESCOs are not always well equipped to address other non-technical obstacles to the implementation of energy efficiency measures.

The stories told by the ESCOs we interviewed suggest that trust is critical and that this can often only be built through a long-term relationship with a client organisation. Yet, the accredited ESCOs are mostly located in large cities, particularly in the capital Delhi and two cities – Mumbai and Pune – in the prosperous western state of Maharastra, which between them contain 25 accredited ESCOs. Interviews with ESCOs are typically conducted in smart air conditioned offices with the interviewees drawn from a highly-educated English speaking elite. This geographic, economic and social gap between ESCOs and many of their clients calls into question how well placed ESCOs are to build trust and overcome the non-technical obstacles to implementing energy efficiency measures.

Some of the greatest obstacles to improving energy efficiency can relate to issues of internal governance rather than a lack of technical expertise or financial resources, and this is especially true in the public sector. Misaligned incentives are the most obvious governance problem: where departments do not pay any or all of their electricity costs they have little reason to invest in more energy efficient technology. For example, a municipal engineer explained that there was little incentive to install more efficient pumps for supplying drinking water to his municipality as his department only paid part of the cost of electricity for running

[23] The ratings system, and ESCOs' perceptions of it, is discussed in more detail in Harrison and Kostka (2012).

the pumps but would have to bear the full cost of installing new more energy efficient pump sets.

Even where the economic incentives are clear, there are many reasons why energy efficiency measures might not be implemented. Several ESCOs suggested that it is more difficult to carry out energy audits in government agencies because nobody has overall charge of energy issues or the authority to drive changes through. Risk aversion may also be a problem as individuals risk little if they decline to take on energy efficiency measures but fear being held responsible if they implement technologies that do not deliver the promised savings. Given that many of the obstacles to implementing energy efficiency measures are neither technical nor financial, prioritising technical expertise is likely to result in energy service companies focusing on conducting energy audits rather than driving the implementation of energy efficiency measures.

BEE's 'market-plus' approach demonstrates the level of state involvement that is required to develop market mechanisms that incentivise energy efficiency. Yet, it also demonstrates the limitations of relying on incentives to develop financial and technical expertise when many of the obstacles to energy efficiency relate to broader governance issues. This is particularly important in India's still incipient efforts to strengthen its capacity to promote energy efficiency as weak state capacity makes the art of making the system work and manoeuvring within the constraints that exist integral to any effort to promote energy efficiency.

**Conclusion**

There are significant differences between the approaches to climate change mitigation adopted by China and India, but also some important similarities. These similarities highlight the importance of paying serious attention to the challenges states face in developing the necessary consensus and capacity to implement their climate change mitigation policies.

In both countries, climate change mitigation has to be balanced against other priorities such as economic growth and poverty reduction, meaning that we cannot expect the state to give its undivided attention to this issue. It is therefore important to understand climate change as one of a number of competing priorities. The nature and balance of these competing priorities shape the opportunities for mitigation. The ability of government agencies to build support with key stakeholders is therefore central to the chances of effective implementation. This is true for both China and India despite the different approaches they have taken and the differences in levels of state capacity.

China's 'state-signalling' approach and India's 'market-plus' approach are both mechanisms to bring different actors on board with bundling being used as a strategy to align otherwise divergent interests. In China's 'state-signalling' approach, the national government provides concrete energy efficiency targets for local governments to pursue. The confidence that these incentives will be taken seriously by local officials has enabled national planners in Beijing to allow for flexibility as to how the targets are met. Under India's 'market-plus' approach, by contrast, the centre seeks to develop ways of using the high price of energy to incentivise energy users to improve their energy efficiency and thereby make savings on their energy bills.

The effectiveness of such manoeuvres depends on the way in which different parties align their interests and the nature of the coalitions that are developed in order to pursue energy efficiency objectives. The reasons for coalition formation differ in the two countries. In China, coalition formation has been motivated by the need to alleviate potential opposition to ambitious and costly energy efficiency measures by bringing key players on side. In India, the need for coalition formation has been brought about by severe limitations on the state's capacity to pursue its objectives.

Despite the different reasons for coalition formation, strategies in both China and India have focused on the need to bring different parties with otherwise divergent interests on board

to build a coalition in favour of energy efficiency measures. In both countries, the state has sought to bundle different policies and interests together in order to minimise opposition and broaden the coalition of players with an interest in the state's measures on energy efficiency. In China, local governments have informally bundled measures to promote energy efficiency with other policies and interests in order to reconcile national targets with local priorities and create 'win-win' situations where large enterprises recognise they can benefit from energy efficiency policies. In India, this has been made explicit with actions on energy policies being justified in terms of the 'co-benefits' they bring in other areas such as financial savings made from achieving greater energy efficiency.

The formation of such loose coalitions is not a substitute for state capacity, but rather the result of officials' ability to bundle together particular policies and interests in order to ensure different groups have a common interest in pursuing energy efficiency objectives. Even at this early stage, it is clear that these bundling strategies do not always deliver the desired results. If interest bundling is treated as a technical exercise, rather than a process of relationship building, then it may only create incentives for isolated activities that do not contribute to the development of the forms of capacity needed to drive the implementation of mitigation measures.

Despite their different approaches, the experiences of both countries demonstrate the challenges faced in implementing even fairly modest mitigation strategies. This makes it important to look at the question of how states develop the capacity they need to implement mitigation measures, including bringing key stakeholders on board through the types of bundling strategies described in this paper.

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