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# Manoeuvres for a Low Carbon State:

## The Local Politics of Climate Change in China and India

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# 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. Yet 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 context of competing priorities and differing institutional capabilities. 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.

# Executive Summary

**How do leaders in government departments in China and India manoeuvre to achieve emissions reductions in very different institutional and political contexts? How do they try to balance and align these actions with other competing interests and policy priorities? What strategies do they use to build informal and formal alliances or coalitions with other elites, from both government agencies and wider society? What lessons can be drawn about how best to implement or support manoeuvres that strengthen the state's capacity to promote climate change mitigation?**

The discussion about how to respond to climate change has largely focused on the difficulties in agreeing on national targets for emissions reductions. By assuming that the main obstacle to reducing emissions lies in the inability to reach agreement internationally, the current debate underplays the challenge of building the state capacity that will be needed to ensure mitigation takes place. Yet, the implementation of mitigation strategies is far from straightforward, and delivering emissions reductions requires creative manoeuvres to bring together competing interests and priorities. These manoeuvres include strategies to bundle different interests and policies, and build informal and formal alliances or coalitions with elites from both within and outside the state.

By focusing on the role of leaders, elites and informal coalitions, this paper unpacks the neglected question of what forms of state capacity and political strategy are needed to pursue climate change mitigation measures in the area of energy efficiency. We examine how government agencies in China and India manoeuvre within differing structural contexts – institutional, organisational and political – to make the most of their limited influence and organisational capacity. In both cases, we see agencies tailoring their approach to the particular nature of competing policy priorities and the organisational structures through which the policies are to be implemented.

## Key Findings

**'State-signalling' and 'market-plus': contrasting approaches from China and India.** The findings illustrate how national and sub-national governments work strategically and politically to achieve emissions reductions by using approaches and practices tailored to their specific contexts.

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, 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.

By contrast, national agencies in **India** are less able to have confidence that national policies will be implemented at the local level and therefore are 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, 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. 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. For example, the state has facilitated the emergence of energy service companies that are intended to provide private firms and government agencies with the technical advice and financing they need to implement energy efficiency measures.

Both the 'state-signalling' and the 'market-plus' approaches require intelligent, creative and painstaking work to achieve results.

**Competing policy priorities and institutional frameworks**. It is vital to understand climate change as one of a number of **competing priorities and interests,** some of which may be in line with mitigation strategies and some in conflict. In both China and India, agencies have tailored their policy approach to the particular nature of their competing policy priorities and the organisational structures involved. The 'state-signalling' and 'market-plus' approaches therefore emerge as responses to differing local contexts.

- In China, mitigation is a prominent policy issue, motivated by the government's belief that climate change policies can promote energy security and an internationally competitive green technology sector, but also prevent politically destabilising environmental problems.

- For India, lower levels of development mean action on climate change is primarily treated as desirable where it is compatible with more pressing domestic concerns relating to economic growth and poverty reduction. For example, energy efficiency measures are pursued as much for their potential to alleviate chronic energy shortages as for their contribution to climate change mitigation.

In countries where economic growth and poverty reduction present pressing competing priorities, we **cannot expect 'the state' to give its undivided attention to this issue**. Rather, particular segments of the state are responsible for climate change mitigation and they may have to compete with other government agencies for policy space. The objective is therefore to strengthen these segments, and this is often done best by bundling climate change mitigation with existing priorities such as energy security or pollution control.

In both countries, the relevant state agencies and their leaders promote their agenda within the constraints presented by **limits on their organisational capacity.**

- In China, a system where decentralisation and authoritarianism work hand in hand, the state provides 'signals' of its policy preferences by setting incentives and rewards for local officials. These include regular binding targets with concrete figures, incentives such as promotion and bonus payments through an annual evaluation system and punishments such as redeployment to a remote region. These ensure that officials at every level have incentives to at least partially fulfil national mandates from Beijing.

- In India, by contrast, national agencies responsible for leading climate change policy face greater obstacles to the implementation of national objectives on mitigation. This is partly because the national agencies have limited presence at the sub-national level. In each state an existing government

agency has been selected to take on responsibility for promoting energy efficiency, but these agencies are largely confined to the state capitals and lack the capacity to promote mitigation strategies throughout their states. Furthermore, climate change mitigation has to be balanced with competing policy priorities such as chronic energy shortages, persistently high levels of poverty and the high proportion of rural households with no access to electricity. Agencies have therefore had to be creative not just in order to maximise their impact, but to have any impact at all. In particular, they have sought to broaden their reach by using the 'market-plus' approach to incentivise private actors to engage with mitigation strategies.

**Agencies do not just seek to implement policy, they also look to bolster their own position within the state** in order to enhance their limited capacity and further their objectives. Thus, in thinking about these agencies' work, it is necessary to consider not just the immediate impact of mitigation strategies but also how they can be used to increase the influence of these agencies in the longer term. Given the limited scope of current actions in relation to the scale of mitigation that will ultimately be required, this will sometimes be the most important contribution of current initiatives.

## Manoeuvres for a Low Carbon State

- **In both China and India, the designated government agencies and their leaders need to be creative in order to promote their agenda in spite of the constraints they face.** In order to ensure their policies take effect and ultimately lead to reductions in emissions, effective leaders manoeuvre actively and continuously to build and maintain coalitions, and align interests and policies through 'bundling'.

- **In both countries the ability to build and sustain coalitions is central to the effectiveness and sustainability of climate change policy.** For various reasons, state strategies in 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 climate mitigation measures. In China, coalition formation has been motivated by the need to alleviate potential opposition to ambitious and costly energy efficiency measures. In India, the need for coalition formation arose from the severe limitations on the state's capacity to pursue its objectives in this area.

- **Aligning interests through 'bundling'.** Bundling is a common political tactic that combines distinct policies or interests to strengthen the pursuit of a policy goal. It is often used where the implementation of policies is uncertain given their costly or otherwise contentious nature. The ability to identify and create possible 'win-win' situations is an important policy skill. We consider the benefits of 'interest-bundling' (where parties with distinct interests are brought together around a particular policy) and 'policy-bundling' (where one initiative is used to pursue multiple policy priorities). Such tactics can form the substantive core of informal coalitional politics, enabling multiple players to achieve ends they could not achieve on their own.

- **Creating and using professional and personal networks.** The use of creative manoeuvres as outlined above means that leaders and donors need to be able to identify key interest groups and bring them on board. This is an essential political skill that takes leaders and donors well beyond their formal technocratic skill-set. Leaders who are embedded in their localities may be better placed to draw on existing professional and personal networks in making the context-specific policy adaptations that underpin such coalitions.

## Policy Implications

- This research highlights the need for policy-makers working on climate change mitigation to approach **energy policy not just as a technical issue but also as a political issue.**
- To do this, they **need to take account of the history, politics and institutions of the local context in order to devise pragmatic policies** with a realistic vision of how obstacles can be overcome.
- To be pragmatic, climate change policy **needs to balance and align climate change actions with competing policy priorities.** In China, for example, arguments for energy efficiency have been strengthened by the more visible and immediate impact they will have on local air pollution. In India, energy efficiency measures have been made more attractive by stressing how they will contribute to bringing down high energy costs.
- The chances of successful implementation depend on how far these policies are **tailored to the strengths and weaknesses of the organisational structures** through which the policies are to be implemented, and the formal and informal institutional contexts in which they operate.
- From a more long-term perspective, it is also critical to look at how **policy choices can be used to strengthen the capacity and legitimacy of organisational structures**.
- Informal coalitions play a critical role in the state's ability to fulfil its policy priorities. However, coalitions are not a substitute for state capacity because the coalition building process is itself highly capacity intensive. It is essential to **ensure that coalition building runs in conjunction with the development of the necessary capacity to develop, sustain and manage these coalitions** if they are to contribute to furthering the intended policy objectives.
- In countries with low per capita emissions, but where emissions are rising rapidly, mitigation strategies should be formulated and **judged as much for their role in building the organisational, institutional and political capacity that will be needed to scale up mitigation strategies in the future** as for their immediate impact on current emissions levels.
- In these contexts, it is therefore particularly important to **pay attention to the interplay between the institutional, political and technical dimensions of climate change mitigation policies**, and the way these contribute to the shaping of strategies for policy implementation.
- The local specificity of these manoeuvres means they cannot be standardised. A key lesson, therefore, is that **international processes need to allow sufficient flexibility for such manoeuvres to take place, and to recognise that these manoeuvres will necessarily differ depending on the institutional context** and the balance of competing priorities.

# 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.[2] By assuming that the main obstacle lies in the inability to reach international agreement, these debates underplay the challenge of building the state capacity to implement mitigation strategies. This emphasis on high level targets assumes an 'implausibly straight driveway from the present to a magically decarbonised future' (Prins et al. 2010: 10; see also Prins and Rayner 2007), and thus underplays the political challenge of building the domestic support and forms of capacity that are needed to promote 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 help to address capacity constraints and so advance mitigation objectives.

Our analysis focuses on China and India as two of the fastest growing contributors to greenhouse gas emissions that published their national climate change strategies in 2007 and 2008 respectively. 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, since the state has been intensively involved in developing the players and rules that enable these market mechanisms to operate.

In China, the research 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.[3] In India, the study examines the approach taken by the Bureau of Energy

2 See Ikeme (2003), Roberts and Parks (2007), and Parks and Roberts (2008).

3 In Shanxi, the researchers secured support from the Shanxi Development Reform Commission and the Shanxi Economic Commission, which was crucial for being allowed to stay and conduct research in five municipalities and 15 counties in Shanxi. Interviews were conducted during June-September 2010 and September 2011. A visit in 2011 helped 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 protection bureaus, development and reform commissions, and construction bureaus, as well as industrial enterprise managers involved in energy consumption reduction and efficiency programs. Interviews were semi-structured, conducted in Chinese, and provided an understanding of overall energy policy implementation at the provincial, municipal and county levels through the study of local circumstances, along with insight into the similarities and variations in leaders' implementation practices amongst localities.

Efficiency (BEE) and particularly its role in promoting the emergence of energy service companies (ESCOs). Some analysis is also provided of mitigation strategies in the area of renewable energy where these have had an impact on current trends in energy efficiency.[4] 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.

By looking at two countries that are at different stages in their response to climate change, and that have developed different approaches to get there, we are able to draw out some common features in the tactics they have used to implement their policies. Our paper therefore seeks to draw lessons from two significant cases more than it purports to make a direct comparison between them.

4 The research in India was conducted through interviews in four cities – Kolkata, New Delhi, Mumbai and Pune. These included interviews with 35 energy service companies spread across the four cities; interviews in Kolkata with a cross-section of players in the renewable energy field in West Bengal including private companies, academic institutions, government agencies and civil society organisations; and interviews with a broad range of government and civil society bodies in Kolkata and New Delhi.

# Conceptualising 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 the role of 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).

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 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 major obstacles to implementation. In this paper we focus on two strategies. The first is deliberate efforts to build coalitions that contribute to driving the mitigation agenda; and the second is how competing policies and interests are bundled together in order to facilitate this process of building informal coalitions.

## 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 entities,[5] the state's capacity to deliver on mitigation targets depends on its ability to bring other parties on board. A critical issue in responding to climate change is therefore how government can ensure that other sectors of society are brought on board to implement potentially costly energy efficiency policies.

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).

In this paper we use the methodological framework of the Developmental Leadership Program (DLP) to investigate the strategies governments use to build coalitions that aid the implementation of policies designed to reduce greenhouse gas emissions. At the heart of this question lies the DLP's focus on 'how and why diverse leaders and elites [are] able to form *de facto* coalitions (both formal and informal) committed to overcoming the particular collective action problems facing them' (Leftwich 2009: 11). The DLP sets out a hypothesis that:

> "Successful and sustained development depends crucially on whether and how various leaders and elites within and across the public and private domains are able to form sufficiently inclusive 'developmental coalitions' (or growth coalitions), formal or informal, which:
>
> - "Negotiate the fundamental political settlements that are essential for building the core institutions of effective states.
> - "Establish, maintain and implement the locally appropriate, legitimate and feasible institutional arrangements that facilitate economic growth and (inclusive) social development.
> - "Co-operate – locally, regionally, nationally, sub-nationally, sectorally or within and between organizations – to overcome major collective action problems and/or major political, economic and social problems" (Leftwich 2009: 11).

Our research findings support this hypothesis by illustrating the critical role that informal coalitions play in the implementation of climate change policies.

We also take the question a step further to consider how such coalitions can be formed where different parties are not necessarily pursuing the same objectives. As Baviskar et al. (2006) have observed in their research on environmental policy in India, environmental policies are not distributionally neutral: they may advance, neglect or even harm the interests of particular groups. Thus, climate change coalitions

5 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.

will not necessarily also be 'developmental coalitions'. A central focus of the research has therefore been on how climate change has been reconciled with other priorities. 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'.

## Policy and Interest-Bundling: the Active Politics of Coalition Formation

Coalitions have to be built and sustained through the actions of individual leaders. Our analysis therefore focuses on the political 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 11th 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 long-standing initiatives to promote energy security has enabled the new push for energy efficiency 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

The research is based on a comparative study of how national policy is converted into local action in China and India. The study pursues a comparative approach both within and between China and India in order to identify common themes on how the nature of coalition building affects the formulation and implementation of national and sub-national climate change policies. We focus on these two countries firstly because they are the two developing countries with the highest levels of CO2 emissions, and secondly because they are countries in which the authors have substantial previous research experience. In both countries we studied the implementation strategy for specific climate change mitigation initiatives at the national and sub-national level. The focus on the agency of individual leaders in forming coalitions means we should not expect uniform outcomes, even where leaders are responding to similar incentives. The study therefore pursues a comparative approach both within and between China and India in order to draw out 'the complex specificities of individual cases' (Leftwich 2009: 20), as well as identifying common themes about how the nature of coalition formation affects the formulation and implementation of policies.

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 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 have become 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 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 government agencies are less able to have confidence that policies will be implemented at the local level.

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, the differences between the two countries are greater than the similarities. 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.[6] 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. In India, since many mitigation strategies are in their infancy and the local-level structures do not (yet) exist, we cannot directly assess their effectiveness. 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. Instead, we aim to take a snapshot of how coalitions are being built. It is a snapshot that comes with all the risks of conducting research in the early stages of a policy area that is changing rapidly. However, this immediacy also brings a certain advantage – we are able to look at the challenges that arise in building relationships and how they are addressed. In identifying these issues we are highlighting the challenges that exist rather than the chances of success. The critical question is how effectively interests can be aligned and relationships managed in order to form a coalition capable of overcoming major obstacles.

6 Estimates typically put China's per capita emissions at more than three times those of India: the World Bank gives figures for 2008 of 5.3 tonnes per capita in China and 1.5 tonnes per capita in India. While current emission levels in China are at what scientists agree is an unsustainable level globally, India's per capita emissions are below the level the planet can sustain. According to a survey conducted by Greenpeace India, even the richest one percent of India's population 'produce slightly less than the global average CO2 emissions of 5 tonnes' and only 25 percent more than average per capita emissions in China (Greenpeace India 2007: 2).

# Variation in Strategies for Policy Implementation

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.[7] 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. 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 energy efficiency measures adopted in recent years have been carefully tailored to the domestic contexts.

## 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 2011), 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

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

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. In both countries, the designated government agencies have had to be creative in order to promote their agenda given the multiple constraints they face. The ability to build and sustain coalitions is central to the effectiveness and sustainability of energy efficiency policy and 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.[8] In the early 2000s, energy intensity[9] 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 priorities, 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 simultaneously contribute to other policy priorities.

## Strengthening and Utilising Existing Institutions

Over the past decades, leaders in Beijing have built up implementation capacity and strengthened formal incentives to comply with energy efficiency directives. The main implementation measures introduced

8 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 7, 22 and 75 years respectively (Dewey & LeBoeuf LLC study cited in Report to Congress 2010: 184).

9 Energy intensity is the energy consumed per unit of GDP.

include utilising 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 and incentivise existing institutional structures 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.[10] The Coordination Committee brought together several high-ranking ministerial bodies under the leadership of the powerful NDRC. The Coordination Committee was used as an ad-hoc body to debate responses to climate change and temporarily fill the institutional void on energy and climate change policy.[11]

Existing agencies touching on energy-related issues were restructured and strengthened culminating in the creation of a new institution in charge of energy. In 1998, a number of different energy-related agencies were consolidated into the Energy Bureau under the authority of the NDRC, but as a bureau under the NDRC it lacked the authority to coordinate between higher-ranked ministries and major national state-owned enterprises (Downs 2008).[12] 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 drawn from the State Council, the Ministry of Foreign Affairs, the State Security Ministry, the Ministry of Finance, the Environmental Protection Bureau, the Ministry of Commerce, the Ministry of Land and Resources, the Ministry of Water Resources, and the Chinese military. The membership reflects 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 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

10 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.

11 NDRC's role as manager of the National Coordination Committee on Climate Change suggests that even in the late 1990s the top leadership viewed climate change as a key national priority. Indeed, policymakers expressed concern about the potential economic and social impacts earlier than many other governments. 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 degree (Li, 2010: 7).

12 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.

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.[13] 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 some energy efficiency efforts will fail or that the results will be questioned by national inspection teams.

Top-down negotiations of targets combined with bottom-up feedback processes ensure constant communication and re-evaluation of energy goals and implementation practices. In 2009, Shanxi province's initial target of 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[14] 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.[15] 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.

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, Taiyuan Iron and Steel (Taigang), was promoted to deputy governor of the province after improving efficiency and production standards at

13 Case-by-case negotiations took place in many provinces. Over the last years, 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.

14 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.

15 The term cadre refers to a public official holding a position in the Party or government. For additional information on the cadre evaluation system, see Whiting (2001) and Edin (2003).

the company.[16]

Despite the general effectiveness 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 use 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).

In other cases, anecdotal evidence from fieldwork suggests localities falsify their reported energy intensity achievements. For example, Inner Mongolia reported that they had met and exceeded their energy intensity reduction targets for the 11th Five-Year-Plan period. However, the accuracy of these figures is questionable since, in September 2010, three months before the end of the evaluation period, leading officials in Inner Mongolia indicated during an interview that the province was far 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.[17] National and provincial government authorities frequently send inspection teams to the locales to limit the 'play with numbers' and to improve information flows. These cases demonstrate the perverse incentives the state-signalling approach can produce, perhaps where the feedback mechanisms and flexibility built into the system are not operating effectively, but the lengths municipalities go to in order to demonstrate compliance also indicate that these are not targets local governments feel able to ignore.

## Implementation Strategies in Shanxi

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[18] by finding ways to reconcile national priori-

16 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 get away with shirking on 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.

17 Interviews across a number of localities showed that government agencies employ different measures to estimate the level of energy intensity. Technical and organisational difficulties in measuring certain energy saving policies make them easy targets for implementation shirking. In addition, the environmental bureaucracy is beset with monitoring problems as local Environmental Protection Bureaus and Economic Commissions lack the skilled personnel and funding necessary to check the accuracy of reported figures and targets.

18 External pressure from Beijing meant Shanxi's leaders developed provincial plans that were even more ambitious than the national mandate. In 2005, five 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 & 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 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.

ties with local interests (see *Box 1*).

### Box 1: Strengthening Incentives and Leadership in Shanxi

In the context of heavy pressure from Beijing, Shanxi province mounted a vigorous response to central energy efficiency policy. A rich array of implementation tools were employed, including:

1. ***Allocation of provincial targets to municipal governments and local enterprises, and signing voluntary agreements with the largest industrial enterprises***
    - Energy efficiency targets were increased as they were passed down from the province to the municipality and county governments. In so doing, provincial authorities were trying to secure fulfillment of the national targets since provincial leaders anticipated that some local energy saving efforts would fail or that national inspection teams would question their accuracy. For example, one municipality with a cumulative target of 25 percent gave targets to the counties of between 27 and 30 percent.
    - Shanxi introduced a provincial Top-200 Enterprise Programme modelled after the national Top-1000 Enterprise Programme, which in 2009 was extended to include a provincial Top-1000 Enterprise Program. As at the national level, these enterprise programmes are voluntary agreements between the largest industrial enterprises and government which commit firms to achieving a prescribed amount of energy savings.

2. ***Strengthening of financial incentives***
    - Shanxi leaders created a Coal Sustainable Development Fund through taxation of all provincial coal exports and have used part of this money to fund energy-saving initiatives:
        - Between 2007 and 2009, the fund reportedly collected over 43 billion RMB (China Financial Report 2010). By 2010, the fund had allocated 1.3 billion RMB to phasing out inefficient production facilities.
        - The sizeable Coal Sustainable Development Fund has greatly enhanced Shanxi's provincial policy implementation capacity. The taxation of coal export helps Shanxi to soften the social and economic consequences of plant closure and eliminating outdated production facilities by providing a pool of funds for city greening initiatives and energy saving policy implementation.
    - In 2008, the Shanxi provincial government began to devise a number of financial rewards for municipal governments and larger enterprises with the best record of energy conservation:
        - **Enterprise reward:** A financial reward of 500,000 RMB was granted if enterprises scored 95 points or above and 200,000 RMB was allocated if enterprises scored between 80 and 95 points during an annual evaluation.
        - **Government reward:** Municipal governments scoring 95 points or above were rewarded with 300,000 RMB and those attaining between 80 to 95 points received 200,000 RMB. A proportion of these rewards can be used to provide personal prizes for leaders.

3. *Introduction of fines and penalties*

- Sanctions for non-responsive municipal and county governments/government officials:
    - Localities that repeatedly fell short of energy intensity targets did not receive new land allocations for industrial purposes.
    - In 2006, the Shanxi Environmental Protection Bureau revoked the right of disobedient localities to conduct environmental evaluations (*quyu xianpi*). The suspension of this right effectively blocks a city's ability to approve industrial projects as all new projects are required to undergo an environmental evaluation.
    - Government officials and enterprise leaders that did not fulfill energy intensity targets could be fined, excluded from annual provincial personal rewards programmes, denied honorary titles, or even demoted or relocated to a remote area.
- Provincial leaders have also used price controls and shut off access to utilities to discipline non-compliant enterprises.
    - Shanxi implemented a differentiated electricity pricing policy by charging higher prices to non-compliant enterprises sorted into two categories:
        - 'Restricted' enterprises on the government's watch list saw their electricity prices rise to between 0.05 and 0.1 RMB/kWh.
        - Flagrant violators in the 'to-be-eliminated' category were charged between 0.2 and 0.3 RMB/kWh (Zhang et al. 2011: 4121).
    - For severe cases, a policy called 'cut electricity, cut water' (*duandian duanshui*) has been used, whereby the Environmental Protection Bureau coordinates with state-owned electricity and water companies to cut off a company's access to utilities.

4. *Appoint effective leaders in critical positions*

- Shanxi leaders also strengthened the province's environmental bureaucracy by appointing a very experienced candidate to head the Shanxi Environmental Protection Bureau in 2006.
- The new head used to work in the military and as a journalist. During a personal interview he stressed that his military experience was very useful in getting the respect of other leaders and environmental protection workers. The head's media experience meant he was known for being adept at handling media attention and he attracted media attention to the province's significant environmental progress since his appointment in 2006.
- Having such a strong leader over the last six years contributed significantly to Shanxi's progress in reducing emissions and energy consumption, not least because he had a clear mandate from the provincial government to ensure that Shanxi met its mandatory energy intensity targets.

## Local Manoeuvres: Regional Variation

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 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 (on the importance of alliance formation and leadership stability, see *Box 2* below).

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 (see *Box 2* on alliance formation in Xiaoyi county).

### Box 2: Bundling Tactics in Xiaoyi County

Xiaoyi is a coal-dependent county-level city in Shanxi that is in the midst of diversifying its local economy. A long tradition of locally-rooted leadership in Xiaoyi has helped leaders to engage in creative bundling tactics to bring the interests of larger enterprises in line with those of the local government.

*Locally-rooted and stable leadership*

Xiaoyi's approach to energy efficiency and greening growth has built up gradually with guidance from a strong and locally-rooted leadership group made up of the Party secretary and mayor. Xiaoyi leaders' average tenure is considerably longer than the standard tenure of three to four years in most localities in China. In Xiaoyi, Party secretaries and mayors stayed an average of 8.4 and 6.6 years respectively.[17] This has ensured leadership continuity, which is further enhanced by the fact that usually mayors stay on as Party secretaries.

Xiaoyi is also credited with an open culture that is encouraging leaders from elsewhere to put down roots in Xiaoyi: 'most of the secretaries, mayors and CCP organisation department heads are from outside, but they all settle down here'. Xiaoyi's leaders also stress the importance of

19 For a more detailed analysis of Xiaoyi and government term tenures, see Eaton and Kostka (2012).

different arms of government pulling together and, to that end, the preceding Party secretary built a modest office building in order to bring all major departments under the same roof.

### *Cementing long-term relationships with government superiors*

A crucial element of Xiaoyi's success in energy saving reduction policies is effective relationship-building (guanxi-building) with upper levels of government :

- The good connection Xiaoyi leaders maintained over the years with government superiors at the provincial and national level has proven to be an important resource in developing and funding local energy policies.
- In 2002, for example, the Xiaoyi leadership first fixed on the goal of attaining a central-level experimental city designation to aid their economic transformation. For this purpose, local leaders were dispatched to learn from experimental cities in Northeastern China in preparation for their application. In 2009, Xiaoyi was named a Resource-Exhausted Transformation Experimental City, one of only 44 nationwide and the only Shanxi locality found on the list. The title is not just a positive mark on the list of local leaders' accomplishments; it has also brought in financial resources, including a 200 million RMB grant from the National Development and Reform Commission.

### *Forming alliances with local private coal enterprises*

Continuity in local leadership has also helped to cement long-term relationships with the local coal industry. Xiaoyi's current Party secretary and mayor induced the private sector to share the financial burden of economic restructuring:

- Xiaoyi leaders 'bundled' coal restructuring with the goal of developing non-coal industries by providing incentives for bosses whose enterprises were eliminated in a local industry clean-up to start greener businesses in the industrial and service sectors. For example, with government backing, a former mine owner brought a Walmart outlet to Xiaoyi.
- The good connections Xiaoyi's leaders maintain with local industry have also proven to be an important resource in funding new initiatives by drawing local coal-based enterprises into economic 'transformation' projects. For example, Xiaoyi's showcase transformation project is an LED light production facility which is projected to generate approximately 1.7 billion RMB in tax revenue, about one-third of the city's annual intake. While this is formally a private-sector initiative, Xiaoyi leaders were the initiators behind the scenes: 'the government's role was to match the money with the technology. The two stakeholders of this project are Jinyan [a local, privately-owned coking enterprise] who provided the funding and Dr Wu Yongan, a physicist from Stanford University, who provided the technology'. The ability of local leaders to induce the local private sector to shoulder this project illustrates the role of the state in enabling and encouraging private sector initiatives.
- In 2011, Xiaoyi's leaders have also taken the unusual step of giving surviving coal enterprises, many of which are privately-owned, soft targets for investments in transformation projects. Coking enterprises in Xiaoyi were asked to launch projects of one billion RMB or more in non-coal or downstream processing projects and coal production enterprises were asked to set up non-coal projects of between one and two billion RMB (Xiaoyi Government Work Report 2011: 20).

In summary, a high degree of continuity in the leadership group has contributed to a gradual implementation of energy efficiency policies and in securing new, more energy efficient, non-coal investments. Xiaoyi leaders' good working relationships with each other and local industry helped to bundle coal restructuring with the goal of developing non-coal industries. The high degree of continuity in the leadership group helped leading officials to build strong networks with government superiors and local coal bosses since connections are maintained and strengthened over time rather than discarded with each changing of the guard. Leadership continuity has probably also contributed to the leaders' success in securing investment because investors can be confident that plans will not shift radically with changes in the leadership group.

## Informal Coalitions and Bundling Tactics

Local government leaders used policy-bundling to gain more broad-based support within the province for costly energy efficiency measures. They seek 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 bundled 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.

## Local Leadership

The practices of bundling and framing require particular types of leaders. Actors who master the skill of bundling are sensitive to the interests of others and out-of-the-box thinkers. They are well connected to the context or locality in which they work and have a detailed knowledge of the political economy of the locality. During visits to five municipalities and fifteen counties, the crucial role of the local leadership group made up of the local Party secretary and mayor was apparent.

Yet, leadership can take different forms. The examples of Xiaoyi (*Box 2*) and Datong (*Box 3*) illustrate how leaders are shaping the implementation of energy conservation. While they have many similarities, leaders in the two cities have sharply contrasting styles and differing scope to employ bundling tactics. In Xiaoyi, there is a long tradition of locally-rooted leadership, which has helped leaders to engage in creative bundling tactics. In Datong, by contrast, a new mayor with a bold vision of how to transform Datong has been held back by weak ties within the municipal government and local industry.

The comparison of these two localities underscores the importance of leadership continuity. In Datong, local Party secretaries and mayors have changed every two or three years since the early 1990s. In 2008, a strong leader arrived on the scene, Geng Yanbo. He initiated a large-scale and bold tourism-focused development strategy, but as a new leader from outside lacked the networks to bundle energy policies with local business interests. Datong's new strategy was principally financed through bank loans and municipal land sales, and it remains to be seen whether the vision Geng Yanbo brought to the city will survive his departure. In Xiaoyi, by contrast, a high degree of continuity in the leadership group has resulted in gradual implementation of energy efficiency policies. Xiaoyi leaders' good working relationships with each other and local industry helped them bundle coal restructuring with the goal of developing new energy-efficient non-coal industries.

### Box 3: Datong Municipality - A Leader with 'Personality'

Datong, Shanxi's second-largest city, is a municipality in the midst of efforts to diversify away from heavy reliance on the coal industry. Prior to 2008, local Party secretaries and mayors in Datong changed every two or three years and very little progress was made in promoting energy efficiency. In 2008, an ambitious leader arrived on the scene, Geng Yanbo, who initiated numerous energy saving and economic restructuring projects.

*Prior to 2008: Lack of progress in energy efficiency*

In Datong, a succession of leaders failed to develop an energy saving strategy for the city despite high energy inefficiency caused by the predominance of out-dated coal mining equipments and facilities. Datong's previous mayors and Party secretaries came and left quickly: the average term of Party secretaries since the early 1990s has been 3.7 years while mayors held their posts for an average of 2.5 years. One high-ranking city official summarised the result of high leadership turnover in Datong:

> "Usually, previous leaders stayed for a couple of years and then found a chance to get promoted. They used Datong as a springboard. The Party secretary of Datong is a position from which it's easy to get promoted because there are many coal bosses here. That means they can get a lot of bribes and use them to bribe the upper level government to get promoted. They didn't even need any political achievements to prove themselves…None of them made any difference. When they left, Datong was the same

as when they came. For them, all was good so long as no major problems arose."

### *After 2008: A new mayor 'with personality'*

The arrival of a new mayor, Geng Yanbo, in 2008 marked a crucial break with the past and this 'leader with personality' (gexing guanyuan) has worked to restructure Datong's coal-dependent economy, though in a risky and controversial fashion. Geng initiated a large-scale and bold tourism-focused development strategy, but as a new leader from outside *lacked the networks* to bundle restructuring policies with local business interests.

Geng's new major tourist projects include renovation of significant Buddhist temples and reconstruction of the ancient city wall. Upon taking office in 2008, Geng sent signals that he would break with the corrupt practices of the past. A government official remembers one of Geng's first new measures:

> "When Geng first arrived in Datong, he stopped all the real estate projects that did not meet construction standards. Real estate developers interpreted this as a sign that Geng wanted bribes but they were wrong. Geng directed his subordinates to take the money they offered him and deposit it in a special government fund used for city construction."

While many Datong officials appreciate Geng's work ethic and his unusual form of honesty in removing the incentive to give bribes by channelling them towards the public good, his subordinates are also fearful of his bad temper and his dictatorial leadership style has certainly made him enemies:

> "Sometimes Geng swears at or even beats people. At first, officials didn't know him well and came late to meetings. Geng would then tell them 'you don't need to come here anymore' and remove them on the spot. If they failed to complete their tasks, they were also removed. Some officials handed in their resignation because there was too much pressure. Geng would refuse them. They had no other choice but to do it well."

Aside from his controversial leadership style, Geng has a vision for energy-efficient growth based on rebuilding Datong's cultural riches in order to develop a local tourism industry. In settling on this approach, Geng drew from his experience in previous posts elsewhere in Shanxi where he also reconstructed historical old towns. During his first year of office, Geng led a major restructuring of industry which saw 127 coal mines consolidated into 65, with smaller mines being sold to larger enterprises or being forced out of business.[18] The subsequent slow-down in coal mining activity is part of the reason Datong's GDP rank among Shanxi cities slipped to number eight in 2010 from number two in 2005.

While many local citizens and government officials view Geng as laying a firm foundation for Datong's industrial transformation, Geng's one-man show has added a risky and expensive dimension to Datong's development strategy:

- Mayor Geng's highly ambitious plans have placed enormous pressure on municipal finances

20 During this government-led consolidation process, a few large local mine companies are identified and are asked by the government to buy smaller private enterprises and improve their production processes. The process of price negotiation and consolidating production processes can be time intensive and can interrupt production.

with estimated costs of historical reconstruction of 50 billion RMB, a huge number considering that Datong municipality's revenue came to only 14 billion in 2010 (Honesty Outlook 2011).

- While Geng has had some success in attracting central state-owned enterprises to invest in Datong's green projects, his approach relies very little on local business burden-sharing. This is partly because, as a new arrival in 2008, he did not have connections to local industry on which to draw. Instead, the majority of revenue shortfalls have been made up with whatever Mayor Geng could cobble together, principally bank loans and municipal land sales.

Although Geng is perceived by local people as a leader who makes a difference and has started numerous energy efficiency initiatives, his headlong approach to the transformation of Datong carries considerable risks and increased the locality's high level of indebtedness. It remains to be seen whether the vision Geng brought to the city will survive his departure.

China's implementation of national energy policies relied heavily 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. To achieve this, leaders need to manoeuvre amidst political challenges and competing interests and find the most appropriate partners for their initiatives. Such adaptive leadership at local levels will be key to realising Beijing's sustainability and energy-efficiency goals in the coming years.

# India and the Market-Plus Approach

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 capable of augmenting the state's limited capacity to drive forward its policies on energy efficiency.

Unlike in China, energy efficiency policy in India does not operate through a cascading chain from national policy formulation 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, in part, by the policies they are involved with.

## 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 carbon emissions and the high proportion of rural households that are still waiting to be electrified.[21] However, the challenges of mitigating climate change and meeting the country's growing energy needs have become increasingly interconnected. The high transmission losses 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 CO2 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.

21 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 2004, an election that Congress was seen as winning partly because of its more pro-poor outlook, '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).

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,[22] 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 CO2 intensity and, simultaneously, bring benefits in other areas. The Action Plan thus 'identifies measures that promote our development objectives, while also 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.[23]

## 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 (see *Box 4* on how incentives for renewable energy have evolved over time).

### Box 4: Learning from Policy: Changing Incentives in Renewable Energy

As in many parts of the developing world, the credibility of state intervention in India has often been undermined by a 'naive statism' (Evans 1995) that takes little account of the state's ability to oversee the quality of what is done by those responsible for implementation, whether inside or outside government. This was apparent in the early experiences of renewable energy where the use of upfront subsidies proved counterproductive.

Wind power was promoted through tax depreciation incentives for installing wind turbines, which 'result[ed] in the building of many wind farms that were never connected to the power grid' (Lewis 2010: 23). A similar issue has arisen with off-grid renewables where it is not uncommon to encounter defunct pieces of technology that have been installed and then not

22 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 (see footnote 6 above).

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

maintained. There are widespread complaints that a significant proportion of installed off-grid capacity ceases to be functional long before reaching the end of its expected lifespan. Many of India's biogas plants are no longer operational (Bhattacharya and Jana 2009: 991),[22] while concerns have been raised that 'subsidized solar lighting systems are being doled out without any programme whatsoever for their maintenance and upkeep' even though 'lack of maintenance service has been the bane of renewable sources in India' (Sharma 2007: 595). This problem is certainly not unique to renewable energy, but the focus on experimenting with new technologies combined with the limited reach of the renewable energy development agencies (see Box 5) has exacerbated the problem.

Recognition of the flaws in an upfront subsidy scheme has resulted in an effort to use pricing to incentivise firms to invest in producing renewable energy rather than simply installing generation capacity. Incentives for both wind and solar are now based on the amount of power produced rather than the capacity installed. The National Solar Mission focuses on incentivising production through paying an agreed premium per unit of electricity. However, this may have created a new set of problems by incentivising companies to bid at unrealistically low prices, leading to 'concerns ... about the possibility of some projects not materialising and the use of sub-standard equipment' (Deshmukh et al. 2011: 22). Research for the Delhi-based Centre for Science and Environment has raised further concerns about the auction process by highlighting how front companies were used, resulting in 'one company walking away with 40 percent of projects – in contravention of [the] one project-one proponent norm' (CSE 2012; cf Bhushan and Hamberg 2012).

While much of the focus of discussion was on the fairness of the system, the bigger question this story raises is whether the state is proactively seeking to identify companies that have the potential to contribute to the long-term objectives of the National Solar Mission. There is a risk that the 'naive statism' of earlier renewable energy projects is being replaced by an overly constrained conception of the role for the state where excessive faith is placed in what can be achieved through price incentives. The success of the National Solar Mission will inevitably be intertwined with the fate of the companies selected, and so cannot succeed without adequate capacity and knowledge to judge which firms are most likely to succeed, what constitutes an appropriate price and how the market can be managed to drive costs down over time. It is beyond the scope of this paper to consider how far this capacity is being developed, but the early evidence from the National Solar Mission clearly supports the wider point made in this paper that price incentives cannot substitute for institutional capacity or individual judgement.

India has been pursuing measures on energy efficiency since the 1970s when the oil price shock led to a number of agencies being formed with a mandate to work on this area, including the Petroleum Conservation Research Association (PCRA), which remains in place today. 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). A string of other agencies and committees have been created, and 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

24 An NGO study in Birbhum district, West Bengal, in 2005 found that 70 percent of biogas equipment established in the late 1980s and early 1990s was no longer working.

the terms of the Act

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. In addition, energy efficiency measures are less high profile than renewable energy measures – off-grid renewables lend themselves to newspaper stories about bringing light to those in the dark, while the sheer cost and novelty of on-grid renewables makes them newsworthy. By contrast, the passing of the Energy Conservation Bill in August 2001 'went unreported by all the leading newspapers and wire services' (Natarajan 2005: 154), reflecting the fact that energy efficiency measures remain an unsexy topic.

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); indeed, 'taxes on energy account for over a quarter of national indirect tax revenue, and close to a fifth of total (direct and indirect) tax revenue' (Joshi and Patel 2009: 22). As a result, the relatively high cost of power in the industrial sector[25] has promoted significant strides towards energy efficiency. By contrast, the cost of electricity for large farmers has always been a major political issue.[26] 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. This is an example of what Steve Sorrell identifies as 'a principal-agent problem that pervades both market and organisational transactions and which separates the responsibility for specifying, installing, operating, and/or maintaining energy-using equipment from the accountability for energy costs' (Sorrell 2009: 343). The problem of misaligned incentives where some large energy users are insulated from the cost of their energy consumption thus presents an obstacle to using price incentives to promote further energy efficiency measures.

BEE's organisational capacity was initially very limited. Its head, Dr Ajay Mathur, started with few staff and a heavy reliance on consultants. Energy efficiency is a concurrent function, with responsibility shared between the centre and the states. BEE was not allocated dedicated agencies at the state-level to implement its policies; rather, existing agencies were selected in each state. In many cases, this responsibility was assigned to the state-level Renewable Energy Development Agencies (REDAs). The REDAs' primary mandate is to promote renewable energy.[27] They are facilitative bodies and not in a position

25 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). Bardhan highlights reports that power for manufacturing costs 35 percent more in India than China, not just because of the high cost of the official power supply but also because the unreliability of that supply means firms need their own backup generators (Bardhan 2010: 56).

26 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 despite most farmers falling into this category (cited in Bardhan 2010: 46).

27 The Government of India started promoting renewable energy with the formation of the Commission for Additional Sources of Energy (CASE) in 1981 under the Department of Science and Technology (Bhattacharya and Jana 2009: 982; see also Gupta 2005: 163). This was followed by the creation of the Department of Non-conventional Energy Sources within what was then the Ministry of Energy in 1982. In 1992 this department achieved ministry status as the Ministry of Non-conventional Energy Sources (MNES) and was later renamed the Ministry of New and Renewable Energy (MNRE) in 2006. Since 1987 the MNRE has been complemented by another national level body, the Indian Renewable Energy Development Agency (IREDA), which is responsible for facilitating finance for renewable energy. Despite having the status of a 'full-fledged ministry' since 1992, the ministers appointed to MNES have been 'relatively junior' and, for senior civil servants, 'MNES is regarded as the first step in career progression to a heavy-weight ministry' with

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 (see *Box 5*).

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 its leaders have 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.

### Box 5: Professional Networks in Renewable Energy: the Case of West Bengal

The Bureau of Energy Efficiency was not allocated dedicated agencies at the state-level; rather, existing agencies were selected in each state. In many cases, this responsibility was assigned to the Renewable Energy Development Agencies (REDAs). The REDAs are state-level agencies based in the state capitals and typically have limited or no presence below the state-level. As a result, BEE has engaged itself directly in promoting a range of activities and developed a network of other parties, while simultaneously seeking to build the capacity of the designated state-level agencies.

The REDAs developed at different times and different paces in different states. The West Bengal REDA (WBREDA) claims to have been the first agency to have trialled a range of different technologies for both off-grid and mini-grid electricity systems. Although this agency is not the designated agency for promoting energy efficiency in West Bengal, it is still involved with a number of energy efficiency initiatives. It also provides a useful insight both into the forms of state-level capacity that BEE is able to draw upon and the way in which government policies can shape lasting relationships.

WBREDA was run from its inception by Mr S.P. Gon Chaudhuri. Mr Gon Chaudhuri was originally brought to West Bengal from the small state of Tripura in northeast India to lead the development of renewable energy. He started in the Department of Science and Technology, before being given responsibility for setting up WBREDA, which was initially located under the Department of Science and Technology and later moved to the Department of Power.[26] At the end of his career, he was moved to head the new West Bengal Green Energy Development Corporation, with a mandate to promote private investment in on-grid renewables.

Over the course of his career, Gon Chaudhuri became the most visible face of the renewable energy sector in West Bengal. Businesses generally talked about having dealt with Mr Gon Chaudhuri rather than WBREDA, and he is referred to as 'a lion amongst men' or as a 'towering figure' who has 'supporters at all levels' and provides 'dynamic leadership'. However, WBREDA

the 'average tenure of [the Secretary being] only 10 months' (Deo and Modak 2005: 101) or as a punishment posting (Harriss-White et al. 2009: 53). Renewable Energy Development Agencies (REDAs) were set up in each state to promote renewable energy policies in line with the national priorities of the MNRE and IREDA. The REDAs report to government departments at the state-level as well as linking in with the MNRE at the national level; they receive funding from both national and state governments. In contrast to the national level, the heads of these state-level agencies may stay in place for a longer period of time and therefore develop a niche profile at the state level (see Box 5).

28 At the state level the REDAs usually report either to the Department of Energy or to the Department of Science and Technology. The two most common lines of reporting represent the twin priorities of renewable energy as a means of addressing energy shortages and the focus on experimentation with new technologies to find ways of extending electricity access to remote rural areas.

also has a profile independent of its founder and former head because it is part of a wider professional network that has emerged as a result of long-running government involvement in renewable energy. The network is focused around the School of Energy Studies at Jadavpur University, generally considered the top university in West Bengal, and based in south Kolkata not far from the offices of many of the renewable energy companies. This school was established as one of several centres across the country to focus on renewable energy, and introduced a postgraduate course in renewable energy to secure a consistent source of funding and develop its stature within the University. The School's influence was strengthened when the then Chief Minister of West Bengal, Jyoti Basu, appointed the Vice-Chancellor of Jadavpur University as the minister of energy. As an engineer himself, the minister was familiar with the work of the School of Energy Studies and, as Vice-Chancellor, had been involved in setting it up. It was under his watch that West Bengal set up its own Department of Science and Technology and through this department that Gon Chaudhuri was first brought into the West Bengal bureaucracy to pioneer work on renewable energy.

The existence of the School of Energy Studies helped to create not just a skills base, but also a professional network. Many of those in the renewable energy field in West Bengal have some connection to the School. They may have studied for the postgraduate qualification; they may have done a doctorate under one of the professors; like Mr Gon Chaudhuri, they may simply have studied a short course there (although he also studied engineering at Jadavpur for his original degree). They all know Mr Gon Chaudhuri, and vice versa, even if they do not always enjoy close relations. The leaders of renewable energy companies also typically identify links with at least one of the professors associated with the School. This meant they had people they could go to for advice as they ran up against problems in assembling renewable technologies that might not have been covered in their studies. The professors in turn had access to information about the experiences of these early entrants into the renewable energy business. Furthermore, several staff members in WBREDA studied in the School and so have their own connections into the professional network.

This professional network is reproduced and evolves over time, helping to reduce the dependency of WBREDA on Mr Gon Chaudhuri or any other individual by ensuring that many of the staff had connections with other people in the renewable energy field. WBREDA's day-to-day work means staff members have built up connections and working relations with those in private companies and academic institutions. As WBREDA and the renewable energy industry developed, more formal relations emerged – relations of dependency between private sector organisations and WBREDA, or with academic departments being employed by WBREDA as consultants to monitor and validate renewable energy installations by private contractors.[27] The network is therefore reinforced by day-to-day interactions.

29 In managing these relationships, WBREDA has had to go beyond its core skill set. Although it is an ostensibly technocratic organisation staffed predominantly by engineers, the low levels of electrification in rural areas mean WBREDA's staff cannot work on renewable energy without engaging with the wider socioeconomic realities. The challenge of utilising new technology has thus been coupled with the challenge of providing services to poor households in remote locations and so the renewable energy development agencies have also become the providers of public services. As one former employee explained, 'most engineers don't think about the societal aspects, but I have become a combination of management, social scientist and engineer – this is necessary for this work'. Thus, the predominantly technical agencies responsible for producing and distributing energy find themselves drawn into a field where issues of unequal access, and wider questions of social and economic development, are inextricably linked with the technical and financial questions of how best to improve the quality and reach of electricity supply. Renewable energy companies may similarly be taken out of their comfort zone as they also have to work in difficult conditions, in remote rural areas that are often politically unstable and vulnerable to insurgency.

A number of new companies have emerged as a result of the increased focus on renewable energy under the National Solar Mission. Like the earlier renewable energy companies, they are oriented towards obtaining government resources, now in the form of the incentives provided under the National Solar Mission. However, WBREDA is not just a source of financial support for these new entrants; it also provides a networking function that it is only able to play because of its long running and central position in the renewable energy field. A number of small companies highlighted how they had drawn on advice from individuals in WBREDA when seeking ways to enter the renewable energy market. One large company had recruited a former REDA employee from a neighbouring state, indicating that the scaling up of renewable energy may build new routes through which to sustain the professional network.

The renewable energy sector in West Bengal thus builds on a network that spans the political administration, the most relevant research and training body, the government agency responsible for renewable energy and private companies. The existence of this network does not mean that relationships are necessarily harmonious. Indeed, many within the renewable energy business were critical of WBREDA for reasons ranging from delays in payment to selection of projects. However, WBREDA clearly has a stature that goes beyond its rather limited formal powers because of the central position it has developed in the renewable energy sector in West Bengal. While it was not government policy to create such a network, we can see that it has emerged as the result of a deliberate approach, from early on, to build not just research capacity but also wider technical expertise in the area of renewable energy, and that it has been reinforced by the choices leaders have made. It demonstrates the length of time it takes to build sustainable coalitions, and the role these interest groups can play in sustaining policy agendas.

## 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. Within 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 that would offset the original cost.

Despite the focus on areas where the co-benefits are financial savings, co-benefits are not an economic fact. As in all aspects of energy policy, government policy is critical to the determination of relative prices and so of the scope for 'co-benefits'. Subsidies for renewable energy or energy efficiency measures have been central in creating a market in these areas. This means co-benefits are not simple win-win

scenarios; rather, they are shaped by particular policy decisions. These decisions not only bring together distinctive policy priorities to provide multiple arguments for a particular action; in doing so, they also exclude or marginalise other priorities (see *Box 6*). In the suboptimal world of severely constrained agencies manoeuvring to maximise their sphere of influence, an ability to construct and tell such a story is vital.

### Box 6: Constructing Co-benefits: Arguments for Renewable Energy

The language of co-benefits has been critical in justifying and packaging India's approach to climate change by turning policy trade-offs into compatible stories where two or more objectives can be pursued simultaneously. In the case of energy efficiency, an obvious co-benefit lies in the fact that energy efficiency not only reduces emissions but simultaneously reduces energy bills and improves energy security.

Co-benefits have also been used in justifying renewable energy. For large-scale renewable energy projects that are connected to the grid, these co-benefits can include improved energy security by reducing dependence on imported energy sources and the scope to promote domestic manufacturing of renewable technologies. Different co-benefits are identified for small-scale renewables, which can be used in remote areas where it would be too costly to extend access to the grid. However, the argument that renewable energy makes both environmental and economic sense for extending electricity to remote areas rests on an implicit assumption that it is better to focus on more expensive forms of electrification in remote areas rather than the lower-cost option of increasing the proportion of households with electricity in those villages that are already electrified.[28] The provision of renewable energy in areas that lack access to the grid also often rests on a participatory decentralised model that puts greater responsibility on the service users than for conventional on-grid power supply.

The point here is not to consider the appropriateness of different policy priorities, but rather to highlight that most co-benefits do, in practice, involve policy trade-offs. The narrative of 'co-benefits' is thus used to present complex policy trade-offs as a simpler story of win-win scenarios. In the case of energy efficiency, these trade-offs could involve the level of subsidy for more energy efficient technology or the employment implications of changing technologies. In practice, co-benefits are often the result of proactive bundling strategies that bring together different priorities. They are opportunities that have to be created rather than simply taken advantage of.

Co-benefits are shaped by particular policy decisions that bring together distinctive policy priorities to provide multiple arguments for a particular action. 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.

The focus on co-benefits is the first step towards strengthening market-based incentives through the

30 A village is officially considered electrified if at least 10 percent of households as well as official buildings such as government schools and local government offices have access to electricity. This means that electrified villages can contain a significant proportion of households without access to electricity.

introduction of an emissions trading scheme called Perform Achieve Trade (PAT) for large industries in designated energy intensive sectors.[31] 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.

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 has 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 recognises that incentives are sometimes misaligned, particularly in the public sector where the body responsible for the cost of installing and maintaining equipment is not always responsible for the cost of electricity, meaning it has little incentive to take steps 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. The impact of the star ratings scheme was being reviewed at the time we conducted our research and, until this data becomes available, there is little solid evidence on the effect of the scheme on consumer behaviour. However, the scheme helped to boost BEE's profile. With manufacturers paying a small fee for printing labels indicating their star rating, the manufacturers were also paying for and then displaying BEE's logo on their products. Anecdotal evidence from conversations with upper middle class consumers suggests this has contributed to increased awareness of the star-rating scheme amongst those buying more expensive consumer goods. 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 in Dr Ajay Mathur, BEE has been able to utilise his reputation to boost the profile of both the organisation and its policies. Dr Mathur 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 such as Dr Mathur 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

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

businesses about its policies.

## Promoting New Partners: BEE and the Energy Service Companies

BEE recognised that it could not reach sufficient businesses and government departments 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.[32] The ESCOs are intended to act as facilitators with the technical expertise to make recommendations on 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 (see *Box 7*). BEE has therefore not only sought to create the market but also to regulate who plays in that market.

### Box 7: Facilitating Reputations and Relationships? Accrediting ESCOs

Energy service companies (ESCOs) are intended to act as facilitators with the technical expertise to make recommendations on energy efficiency measures and the financial standing to be able to facilitate access to credit when necessary. The success of the ESCO model depends on the level of expertise these organisations are able to offer, including their level of technical knowledge and their access to finance. It also depends critically on the confidence of their clients. BEE has therefore established a ratings system to ensure that ESCOs have the necessary technical expertise and financial resources, and so to build confidence in the ESCO sector. The ratings are done by two independent ratings agencies based on 'success in implementation of energy efficiency projects, ability of technical man-power, and financial strength to invest in such projects' (BEE 2008: 3).

The value of accreditation is hotly debated by the ESCOs, as is the fairness of the ratings system. The predominant explanation ESCOs gave on why they sought accreditation related to the legitimacy that accreditation conferred on the company. Interviewees described it as: 'an additional qualification', 'like a degree or brand name', 'like a certificate' or 'a feather in the cap'. A number of interviewees also gave the reason that accreditation is required in order to bid for government contracts. Others highlighted that even some private clients now ask for BEE

32 Energy service companies provide organisations with advice on how to improve their energy efficiency. They may also be involved with the implementation of such measures, either through facilitating access to finance to cover the cost of the initiative or by implementing the measure themselves. Depending on the exact nature of their involvement, they are paid either a set fee based on evidence that energy efficiency measures have delivered the financial savings they promised, or a percentage share of the savings. Performance-based contracts 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. BEE's focus on promoting the growth of the ESCO field has been based in part on the more established ESCO sectors in Brazil, China and the United States (Delio et al. nd: 12-14).

accreditation, suggesting that 'it has become a brand'.

Responses varied on how much difference BEE accreditation really makes. While some suggested that it is 'useful to convince clients', 'improved visibility' and resulted in more enquiries from clients, others felt it had not made any difference to their business and that the Rs500,000 accreditation fee was 'exorbitant' and a waste of money. Several companies indicated that they had no intention of renewing their accreditation.

Inevitably, some companies were not happy with their gradings. More worryingly, a couple expressed concern that they had not been given feedback on how the grading was decided upon, raising questions about how effective the ratings system will be at boosting the capacity of the sector if it is not being used to give firms guidance on how they can improve. Underlying this is a wider concern that the ratings process is too divorced from the practicalities of energy efficiency, with some interviewees suggesting the ratings agencies lacked adequate understanding of energy issues or that the ratings system overemphasised financial capacity in relation to technical expertise and experience.

The concerns about the appropriateness of the accreditation system are reinforced by criticisms of how contracts are awarded. Whereas the ratings system may pay too much attention to a company's financial status, price is likely to be the determining feature in awarding contracts. Larger companies complain that they cannot compete on price with their smaller counterparts even though they are better equipped to do the work (some even suggest that smaller ESCOs are winning contracts at prices that would barely cover accommodation and travel costs).

The shaky confidence in the ratings system highlights just how difficult it is for BEE to build the conditions for a credible energy efficiency market. However, even if it is unclear how far the ratings system is building confidence in the ESCO sector, the fact that companies report being asked whether they are accredited suggests that, like the star rating scheme for household appliances, the ratings system has contributed to strengthening the profile of the formal structures. In the early stages of policy-making, this may be just as important as the intended impacts.

BEE has shown flexibility in how it seeks to overcome problems faced by the ESCOs by acting to insulate them from bureaucratic obstacles. Unpredictable and slow payments can significantly increase the cost of doing business, while results-based payments are inherently difficult to enforce in a context where legal institutions operate imperfectly and ESCOs take on significant risk if they provide the initial funding for the installation of new equipment on the client's premises. 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 significant delays in payment and spend considerable amounts of 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, providing ESCOs with a simplified mechanism so that they only 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 (see *Box 7*). 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. Yet, the effectiveness of ESCOs depends on more than their financial or technical capacity.

The stories told by the ESCOs we interviewed suggest that trust is a critical factor, which 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 governance, rather than technical, obstacles to implementing energy efficiency measures. This is particularly relevant when it comes to working with government agencies across the country. Some of the greatest obstacles to implementing energy efficiency measures 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 the pumps but would have to bear the full cost of installing new more energy efficient pump sets.

Even where the economic incentives point towards taking action, there are plenty of reasons why energy efficiency measures might not be implemented. For example, if there is nobody in overall charge of energy issues within a government department then there may be nobody in a position to drive changes through. This was a problem highlighted by several ESCOs who suggested that the process of carrying out energy audits in government agencies was made more difficult by the lack of clear attribution of responsibility for such issues within government departments. Risk aversion on the part of individual bureaucrats may also be a problem as they risk little if they decline to take on energy efficiency measures but fear being held responsible if they implement technologies that prove to be problematic or do not deliver the anticipated savings.

While our objective has been to look at how the state is facilitating the emergence of the ESCO sector, we cannot avoid asking how far the ESCO sector that is emerging is likely to serve BEE's objectives. We have seen that BEE has been active and adaptive in its efforts to support the ESCO sector, including identifying and overcoming the governance challenges they face. However, BEE's vision for the role of ESCOs appears to remain largely technocratic. This is problematic given that many of the obstacles to implementing energy efficiency measures are neither technical nor financial. A more effective coalition is likely to be built if it is recognised that the skills required are as much political as technical and that this may require a broader range of players with differing skill sets.

Importantly, BEE's work recognises that ESCOs are not the only option for promoting energy efficiency

at the local level. It is also seeking to strengthen its state-level counterparts and adopting a different approach to working with small and medium enterprises (SMEs). Since there is limited data available on the energy efficiency of SMEs (BEE nd), BEE has focused on commissioning studies of different SME clusters. The account of an academic who led one of these studies highlights the effort that has to be put into gaining access and building trust with the owners of SMEs in order to carry out the study. He explained that they often found workers had been instructed not to speak to outsiders, while even owners or managers would be reluctant to engage with them out of fear that they might really be from a regulatory body such as the Pollution Control Board and there to check up on compliance with regulatory standards. Building trust was a gradual and time consuming process, but it was clear that this confidence building exercise was a major part of the job. It had also allowed him to develop an understanding of the obstacles SMEs would face in implementing energy efficiency measures: SMEs have less scope to take on the financial risk of utilising new technologies, narrow profit margins may mean they cannot afford to suspend operations while they upgrade their equipment, and a lack of formal qualifications amongst their staff may mean they lack the necessary skills and expertise to handle new technologies. It is clear that the ESCO model would have been ill-suited to doing such work, not least because the geographic location and fee structures of most ESCOs make such intensive engagement unlikely, and so it is important that BEE's strategy allows space to identify different partners who can promote different aspects of the energy efficiency agenda.

BEE's 'market-plus' approach demonstrates the level of state involvement that is required to develop market mechanisms that promote voluntary action to improve energy efficiency. Yet, extensive state involvement does not necessarily make it possible to build coalitions that provide a substitute for weaknesses in state capacity. Efforts to create the incentives for people to get things done will only ever deliver limited results if their knowledge of how to get things done is purely technical and not also political, and it is unclear how far BEE's focus on market-based incentives for ESCOs will be sufficient to mobilise these forms of expertise. This is particularly important in India's still incipient efforts to strengthen its capacity to promote energy efficiency as weak lines of authority and a complex array of actors make the art of making the system work and manoeuvring within the constraints that exist integral to any effort to promote energy efficiency.

# Discussion

Our analysis of energy efficiency policy in China and India illustrates that, where climate change mitigation has to be balanced against other priorities such as economic growth and poverty reduction, we cannot expect the state to give its undivided attention to this issue. Rather, it is important to understand climate change as one of a number of competing priorities. The nature and balance of these competing priorities shapes the opportunities for mitigation policies.

In both countries, measures to promote energy efficiency have been crafted in ways that take account of the opportunities and obstacles for implementation. We describe China's approach as 'state-signalling', where the national government provides concrete energy efficiency targets and guidelines 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. By contrast, national agencies in India pursued what we describe as a 'market-plus' approach. Rather than the centre setting targets, the government draws on 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 to a significant degree 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. We argue that 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. The measures we are looking at are still in their infancy in both countries and it is too early to assess the overall long-term effectiveness of the two approaches. Even at this early stage, it is clear that these strategies do not always deliver the desired results. In China we have seen that targets are sometimes met in short-term ways that do

not deliver sustainable reductions, while in India we have seen that energy service companies tend to focus on the production of energy audits rather than driving the implementation of energy efficiency measures. In the latter case we see that high-level strategies to form a coalition capable of driving energy efficiency measures are unlikely to be sufficient for overcoming the complex and context-specific obstacles to implementing energy efficiency measures.

# Key Findings

The key findings of this study are the following:

1. Competing policy priorities and institutional frameworks shape the space for manoeuvre
2. Creative manoeuvres are needed to overcome obstacles to policy implementation
3. Coalitions can be built and maintained through aligning interests
4. Leaders need to be well-connected and have detailed knowledge of the political economy of their locality.

## 1. Competing policy priorities and institutional frameworks shape the space for manoeuvre

Delivering emissions reductions is far from straightforward. Given the diffuse responsibility for emissions, the state's ability to deliver on its objectives depends on its ability to bring a range of sectors on board. Furthermore, in countries where economic growth and poverty reduction present priorities that are at least as pressing as tackling climate change, we cannot expect 'the state' to give its undivided attention to this issue. Rather, it is particular segments of the state that are focused on the question of climate change. These agencies do not just seek to implement policy; they also look to bolster their own position within the state. Through their actions, government agencies seek to create sufficient elbow room to enable them to manoeuvre effectively and further their objectives. Thus, in thinking about these agencies' work, it is vital to consider the ways in which their ability to further their objectives is both facilitated and constrained by the context within which they operate.

As the case studies in China and India illustrate, it is therefore important to understand climate change as one of a number of competing priorities, some of which may be in line with mitigation strategies and some of which may be in conflict. The nature and balance of these competing priorities shapes the opportunities for mitigation policies and also the most appropriate mechanisms for framing and implementing these policies. Importantly, the level of priority given to climate change will vary both between and within countries. It is all too easily forgotten in debates about climate change that China and India are at very different stages of development: that India is still struggling to extend electricity to many rural households or that per capita emission levels in India are less than one third of the level they are in China. In general, climate change mitigation is a more prominent policy issue in China; amidst competing policy priorities of economic growth, employment, and social stability, China's domestic climate change initiatives are motivated by the government's belief that climate change policies promote energy security, but also help to prevent politically destabilising environmental problems and promote an internationally competitive domestic green technology sector. For India, lower levels of development mean action on climate change is treated as desirable mainly where it is compatible with more pressing concerns relating to economic growth and poverty reduction; for example, energy efficiency measures are pursued as much for their potential to alleviate chronic energy shortages as for their contribution

to climate change mitigation. It is unsurprising, therefore, that energy efficiency measures are promoted more vigorously in China than in India.

This context of competing priorities and institutional frameworks shapes the space within which agencies manoeuvre to pursue their policy priorities by establishing both the constraints on, and opportunities for, action.

## 2. Creative manoeuvres are needed to overcome obstacles to policy implementation

In both countries, the relevant state agencies and their leaders need to be creative in order to promote their agenda within the constraints presented by competing priorities and limits to their organisational capacity. The differences between the two countries mean there are variations in the forms of manoeuvre that are pursued, but one point emerges consistently from both countries. Effective leadership is not just about formulating policy, rather it is about manoeuvring creatively in order to (1) maximise your agency's influence so that your policies are taken seriously and (2) maximise the chances of those policies being implemented.

In China, the state has been able to have much greater confidence that its national objectives on climate change mitigation will be implemented. China is characterised as a system where decentralisation and authoritarianism work hand in hand, with a single authoritarian government under the Chinese Communist Party providing incentives and rewards for local officials to steer policy implementation. 'Hard' binding targets with concrete figures, incentives (such as promotion and bonus payments through an annual evaluation system) and punishments (such as expulsion from office) ensure that officials at each layer of government administration are motivated to at least partially fulfil upper level government mandates. As a result, the national focus has been on 'signalling' with the national government providing guidelines and binding energy efficiency targets for local governments to pursue. These signals act as observable indicators of policy preferences providing local governments with an indication of how much emphasis they should place on energy efficiency compared to other policy priorities. The assurance 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, providing a contrast with the much more intensive engagement of national agencies in India in trying to create structures that will encourage implementation.

In India the agencies responsible for leading climate change mitigation have limited presence at the sub-national level. The designated agencies in each state have evolved from organisations set up to address earlier policy priorities; they are based in the state capitals and lack the capacity to promote mitigation strategies throughout their states. This, combined with the constant need to balance climate change mitigation with competing policy priorities, means that India's national agencies cannot assume their policies will be implemented. Agencies have therefore had to be creative not just in order to maximise their impact but to have any impact at all. In particular, they have sought to broaden their reach by incentivising private actors to engage with climate change mitigation. This has been done through what we describe as a 'market-plus' approach. Lacking the capacity to enforce energy efficiency measures or the reach to implement measures throughout the country, government agencies have sought to motivate the private sector to take action on energy efficiency. While this detaches the state from direct responsibility for implementation, India's 'market-plus' approach goes beyond simply relying on market mechanisms to include extensive state involvement in creating the rules and players of the market. For example, the state has been intensively involved in facilitating the emergence of energy service companies that are intended to provide expert advice and financing for energy efficiency measures, while the emissions trading scheme is designed to strengthen existing price incentives. Government

agencies have therefore sought to overcome their limited capacity by facilitating the emergence of private players who have an incentive to promote the energy efficiency agenda.

In both cases we see agencies tailoring their approach to the particular nature of competing policy priorities and the organisational structures through which the policies are to be implemented. Where competing priorities exist and organisational capacity is limited, effective policy formulation is based on an understanding of the obstacles to implementation and how these can best be either overcome or circumvented.

### 3. Coalitions can be built and maintained through aligning interests

The effectiveness of such manoeuvres depends to a significant degree on the way in which different parties are brought on board and the nature of the coalitions that are developed in order to pursue climate change policy objectives. In both countries the ability to build and sustain coalitions is central to the effectiveness and sustainability of climate change policy. In China, coalition formation has been motivated by the need to alleviate potential opposition to ambitious 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 in the two countries, government 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 China, local governments have informally 'bundled' measures to promote energy efficiency together with other policies in order to reconcile national targets with local priorities and create 'win-win' situations where different interest groups recognise they can benefit from policies that bring their interests together. In India, this has been made explicit with actions on climate change mitigation being justified in terms of the 'co-benefits' they bring in other areas such as promoting energy security through renewable energy or financial savings made from achieving greater energy efficiency.

Implementation depends to a significant degree on the state capacity to build and maintain coalitions between diverse interest groups. In both countries, the state has sought to bundle different priorities together in order to minimise opposition and broaden the coalition of players with an interest in the state's measures on climate change mitigation. These informal coalitions play a critical role in the state's ability to fulfil its policy priorities, as has been emphasised in much of the work carried out under the Developmental Leadership Program (DLP 2012). However, our findings suggest that coalitions are not an easy substitute for state capacity because the coalition building process is itself highly capacity intensive. Furthermore, success in bundling the interests of different parties together does not mean their interests become fully aligned and so, as our findings illustrate, informal coalitions do not always further the objectives of the dominant partner. It is therefore essential to ensure that coalition building runs in conjunction with the development of the necessary capacity to develop, sustain and manage these coalitions if they are to contribute to furthering the intended policy objectives.

### 4. Leaders need to be well-connected and have detailed knowledge of the political economy of their locality

The creative manoeuvres used to overcome the complex challenges of implementing climate change policy mean leaders need to be able to identify key interest groups and bring them on board. This is an important political skill that takes leaders well beyond their formal technocratic skill-set. To work politically, leaders require keen political instincts to enable them to judge what is feasible (or not) in their respective localities. Leaders that master the skill of 'bundling' are likely to be sensitive to the interests

of others and out-of-the-box thinkers, who are both well-connected and have a detailed knowledge of the political economy of the locality. Coalition formation is not just about aligning interests but also about knowing who to approach, how to approach them and, most of all, being able to secure their trust. As a result, leaders who are well embedded in their localities or policy spheres are more likely to get things done by making context-specific policy adaptations. They are more likely to have access to professional or personal networks that can help them secure buy-in from coalition partners. The importance of these networks means effective coalitions cannot be built overnight; however, precisely because the networks are often professional, rather than purely personal, over time state policy can affect the conditions for coalition formation.

## Policy Implications

A number of policy implications emerge from these key findings. This research highlights the need for policy-makers working on climate change mitigation to approach energy policy not just as a technical issue but also as a political issue. To do this, policy-makers need to take account of the history and politics of the specific local context in order to devise pragmatic policies with a realistic vision of how obstacles can be overcome. To be pragmatic, climate change policy needs to balance and align climate change actions with other competing interests and policy priorities. The chances of successful implementation also depend on how far these policies are tailored to the strengths and weaknesses of the organisational structures through which the policies are to be implemented.

Devising pragmatic and tailored programmes requires a detailed understanding of government agencies' capacity to implement policy, the obstacles they are likely to face and the ways in which such obstacles can best be overcome or circumvented. In order to devise effective strategies, agencies need to be able to combine technical and political skills. Creative manoeuvres help to maximise national and sub-national governments' ability to bring about emissions reductions. The local specificity of these manoeuvres means they cannot be standardised and a key lesson is that donors and international processes need to allow sufficient flexibility for such manoeuvres to take place. Nevertheless, donors may be able to play a facilitative role by forging links between different actors. This could include:

- Supporting coalition formation and maintenance of coalitions through helping actors to identify overlapping interests.
- Such support can involve sponsoring events that create room for forming formal and informal coalitions and networks.
- Helping to identify bundling opportunities through bringing together different stakeholders to identify common interests.
- Creating bundling opportunities through financial support to reduce the cost of specific mitigation measures, thereby making them more attractive.

While it is important for policy-makers and international donor organisations to operate politically and pragmatically to support manoeuvres towards low carbon states, such practices need to be conducted in sensitive and appropriate ways. In particular, donors need to be aware of limitations on their own scope for manoeuvre.

- Donors who represent high income countries with high per capita emissions may be seen as having limited legitimacy to intervene in favour of climate change mitigation measures in developing countries.
- If their input is to be constructive, donors therefore need to tailor their intervention not only to the local context but also to be sensitive to the forms of intervention that are likely to be locally ac-

ceptable. This may require donors themselves to bundle their interventions with other policy issues rather than approaching climate change mitigation in isolation.

Finally, in countries with low per capita emissions, but where emissions are rising rapidly, mitigation strategies should be formulated and judged as much for their role in building the organisational, institutional and political capacity that will be needed to scale up mitigation strategies in future as for their immediate impact on current emissions levels. In these contexts, it is therefore particularly important to pay attention to the interplay between the political and technical dimensions of climate change mitigation policies.

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