Bureaucratic manoeuvres and the local politics of climate change mitigation in China and India[1]

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Forthcoming 2018 in
Development Policy Review

Abstract

This article explores how strategies of thinking and working politically are used by agencies within developing country governments to influence wider government agendas. It uses research on climate change mitigation in China and India to explore how government agencies seek to overcome challenges of limited capacity and competing priorities by bundling climate change together with more immediate priorities and thereby developing a coalition with an interest in achieving these objectives. The article is based on interviews conducted in China and India, as well as analysis of themes covered in the growing body of literature on the domestic politics of climate change mitigation. In both countries we found that pragmatic approaches leveraging on what already exists made significant progress in putting energy efficiency on the agenda, strengthening institutional presence (in India) and delivering improvements in energy efficiency (in China). Yet, we also found that the use of these tactics had significant limitations. While there was probably no other way that the policy space given to climate change mitigation could have increased so rapidly, there are significant side effects that arise as a result of the traction gained by these initial policy approaches. While bundling raised the profile of energy efficiency, it also created perverse incentives that highlight the need to consider the long-term effect on the interests, capacity and sustainability of informal coalitions. We highlight the need to take account of both the short- and long-term effects of thinking and working politically, and the challenges of doing so when the outcomes are unpredictable and inherently difficult to assess.

Keywords: thinking and working politically, climate change, energy efficiency, China, India

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1. Introduction

In recent years a policy-oriented literature has developed around a set of ideas referred to as "doing development differently", "thinking and working politically" and "problem-driven iterative adaptation". The emergence of these ideas has prompted Duncan Green to suggest that "it has felt something like a unified field theory of development is emerging" (Green, 2016, p. 4) around what he calls a "power and systems approach" that "views failure, iteration and adaptation as expected and necessary, rather than a regrettable lapse" (Green, 2016, p. 7). However, despite the growing interest in thinking and working politically and related approaches, the main focus has been on programmes funded by international donors (Dasandi et al., 2016) and particularly on the role of international actors within those programmes (Dasandi et al., 2016). As we highlight below, there are parallels with earlier bodies of literature that are not focused on donor programmes, and which can help to strengthen our understanding of the opportunities and potential limitations of thinking and working politically.

In the case of problem-driven iterative adaptation (PDIA), Andrews et al. (2017) explicitly attribute the problems of "isomorphic mimicry" to the incentives and pressures created by the unrealistic expectations of international donors. For example, they argue that "the international community is squandering [the] precious resource [of state capability in developing countries] by making tremendous demands on state capacity for non-productive purposes" (Andrews et al., 2017, p. 75). They are largely silent on the question of how international pressures interact with domestic political pressures and expectations.

By contrast, the thinking and working politically literature puts understanding domestic politics at the centre of its analysis, but the research has been dominated by case studies of donor funded programmes. This reflects the policy focus of this body of work and the way the research has been shaped by donor funding through the work of the Overseas Development Institute (ODI) and the Developmental Leadership Program. Duncan Green's account of *How Change Happens* (2016) also assigns a central role to the state and, importantly, identifies the existence of competing interests and agendas within the state. He illustrates this based on his own experience working in the UK bureaucracy, where "power was endlessly disputed within the system, as everyone lobbied internally for their preferred policies and budgets, using all the tactics of activists everywhere—coalitions, the search for champions, seizing critical junctures, and the rest" (Green, 2016, p. 81).

As Dasandi et al. highlight, there are largely unexplored similarities between the literature on thinking and working politically and earlier bodies of work on public sector reform focusing on "pockets of effectiveness that happen where conditions for reform are unfavourable and will – political or otherwise – is often lacking" (Dasandi et al., 2016, p. 2). Wild et al. make a similar point by highlighting the links with work on adaptive management in the 1980s and 1990s (Wild et al., 2017). There are also overlaps with other literature that focuses on the role of alliances and context-specific approaches from the perspective of domestic politics such as on "hybrid public action" (Spink & Best, 2009), "growth coalitions" (Brautigam et al, 2002), "going with the grain" (Kelsall, 2008) and "institutionalised co-production", which Joshi and Moore use to refer to "unorthodox organisational arrangements [that] constitute (smart) adaptations to prevailing local circumstances" (Joshi & Moore, 2004, p. 32).

This earlier literature highlights that alliances and the alignments of interests on which they are built are complex and often messy. Spink and Best use the term "hybrid public action" to refer to "a muddy arena of multiple actors" (Spink & Best, 2009 p. 6), while Joshi and Moore argue that "in a normative sense, many co-production arrangements rank second best, or even lower' and that it is therefore difficult to conclude whether or not they should be encouraged' (Joshi & Moore, 2004, pp. 45–46).

In recent years, literature on the politics and political economy of climate change has highlighted the importance of coalitions and alliances in driving climate change mitigation, particularly in the largest developing countries (Aamodt & Stensdal, 2017; Schmitz, 2016). The literature has also started to move beyond highlighting the importance of coalitions to consider variations in these coalitions and the sustainability of the opportunistic approaches they are built on. For example, Schmitz highlights the difference between "strategic alliance based on joint action" and "mere alignment of interest without coordination between the parties", as well as between "consciously pursued and incidental alliance", and between "transitional (short-term)" and "enduring (long-term)" alliances (Schmitz, 2016, p. 15). He argues that "information on the longevity of alliances is rare … but it seems that short-term alliances, triggered by particular events or focused on specific initiative, are more common" (Schmitz, 2016, p. 15).

The literature has started to identify challenges from relying on such short-term alliances. In China, Shen describes the alignment of interests within the renewable energy sector as a "policy network [with] intensive day-to-day interactions" (Shen, 2017, p. 88), but has subsequently highlighted that

even such a close-knit 'policy community' may prove difficult to sustain where it rests solely on the alignment of economic interests (Shen & Xie 2017). Shen and Xie suggest that such alliances face problems of sustainability "because once these instrumental benefits are outweighed by other concerns, stakeholders are found jumping out of the coalitions" (Shen & Xie, 2017, p. 12). They therefore argue that there is a need to move beyond alliances based on economic interests to an alliance "based on the shared values and beliefs in the urgency of resolving climate and environmental crises" (Shen & Xie, 2017, p. 11).

Similar concerns have been raised in recent literature on India's approach to climate change mitigation. In particular, Dubash and Joseph note that India's approach has allowed for "experimentation" and "flexibility" but suggest that "an ad hoc and reactive approach to institutionalising India's climate response has its limitations" (Dubash & Joseph, 2016, p. 53). These limitations include that "climate policy making is more often driven by individuals than institutions [resulting in] inconsistent engagement with the issue and creat[ing] a vacuum when no strong and interested leader emerges" (Dubash & Joseph, 2016, p. 52). They therefore suggest that "a more deliberate process of institutional design" may be needed (Dubash & Joseph, 2016, p. 52).

While the main focus has been on short-term alliances, the literature also identifies other forms of alliance. For example, in discussing the energy sector in the Indian state of West Bengal, Chatterjee (2017) and our earlier work (2012) highlight the role of a "professional network" spanning the political leadership, bureaucratic administration, academia and private companies. There is also evidence that policy changes may not just align existing interests but can also lead to the formation of new interest groups, which are able to lobby for their sectoral interests. For example, Chaudary et al. highlight how the wind energy sector in India was able to lobby the government to reverse a "catastrophic" decision to cut the incentives provided to wind energy (Chaudary et al., 2015, pp. 69–70). They also identify how the increased emphasis on solar energy has meant that "solar project developers … have now emerged as strong actors involved in policy shaping" (Chaudary et al., 2015, p. 79). This suggests that the pursuit of interest-based and more long-term alliances are not necessarily mutually exclusive and that alliances built on the alignment of economic interests can give rise to more long-term coalitions.

This article contributes to this literature on alliances in climate change policy and reflects on its implications for the literature on thinking and working politically. It provides an example of how government agencies think and work politically in attempting to overcome constraints on their

capacity and authority, but also explores the limits to such approaches. To do this, we build on our earlier research, which looked at the approach taken by China and India to promoting climate change mitigation, focusing on the case of energy efficiency. The research highlights that despite significant differences between the two countries in terms of their level of development, state capacity and emissions levels, both countries used similar tactics, which we refer to as framing and bundling, in order to reconcile climate change mitigation with competing policy priorities, and leverage existing institutional structures to deliver their policy objectives (Harrison & Kostka, 2012, 2014).

The research was conducted in 2010 and 2011 as part of a research project funded by the Developmental Leadership Program. This was an important period in the development of both countries' approaches, shortly after they published their first overarching climate change strategies (China's was released in 2007 and India's in 2008) and when both countries had started putting increased emphasis on climate change mitigation. Our focus is therefore on understanding how the responsible agencies in the two countries sought to build momentum for climate change mitigation activities in the early years following the release of these strategies.

The research has implications for understanding how the state takes on new priorities by drawing on pre-existing structures and, in doing so, how particular agencies within the state seek to bolster their organisational status and the profile of their policy priorities. It also highlights some of the limitations of tactics of thinking and working politically, particularly in terms of the potential for opportunistic activities to create perverse incentives and constrain the scope for long-term capacity development. The literature on thinking and working politically has so far given little consideration to these limitations, and our case studies suggest this is an important area for both empirical research and theoretical consideration.

In the following sections, we present the key findings from the China and India case studies, before discussing the broader implications for our understanding of approaches to thinking and working politically.

2. Constrained responses to climate change

At the end of 2015, the Paris Agreement was concluded as a successor to the Kyoto Protocol. Where the Kyoto Protocol had battled, with limited success, to persuade states to submit themselves to a

binding international process, the Paris Agreement "acknowledges the primacy of domestic politics in climate change and allows countries to set their own level of ambition for climate change mitigation" (Falkner, 2016, p. 1107, Dubash, 2015) through a "bottom-up process" (Aamodt & Stensdal, 2017, p. 114). This follows from an increased recognition that national governance structures and national bureaucracies do not work in a neat linear way with national resources and capabilities being deployed to meet a predetermined international commitment. As a result, the effectiveness of the Paris Agreement depends on how different groups mobilise around the agreement (Keohane & Oppenheimer, 2016).

Under the Kyoto Protocol, China and India were outliers within the global system of climate governance. They were major emitters but not subject to binding commitments and this made them a potential scapegoat for those developed countries that wanted to avoid fulfilling their own commitments. Both countries had more pressing priorities relating to economic development and energy shortages, but both were vulnerable to the effects of climate change. The same point was true in other large emerging economies where action on climate change has depended on how it is aligned with other domestic considerations (Schmitz, 2016). Today, the international architecture for governing climate change, in the form of the Paris Agreement, provides a clear recognition of the central importance of domestic politics in finding ways to balance climate change mitigation with other priorities, for both developed and developing countries.

Energy efficiency measures are frequently presented as providing 'win-win' scenarios by reducing both energy costs and emissions, and therefore as being particularly relevant for emerging economies that face a rapidly growing demand for energy and suffer from persistent energy shortages. However, it often proves difficult to achieve widespread uptake of potentially advantageous energy efficiency measures. Energy efficiency is low profile and complex involving a diffuse set of actors (Chaudhary et al., 2012). While the potential cumulative benefits are substantial, individual actions may be too smallscale to provide effective incentives. These challenges have meant that action on promoting energy efficiency has lagged behind renewable energy, where the benefits are more concentrated and more visible.

Both China and India faced challenges in putting energy efficiency on the agenda given more pressing priorities, but they faced even more substantial challenges in turning broad objectives into concrete actions given the wide range of actors they needed to reach in order to incentivise energy efficiency measures. The constraints were more significant in India than in China both because of the

countries' different levels of development and because of differences in the state's ability to push its objectives through due to the limited organisational reach of the relevant agencies.

As shown in our previous work (Harrison & Kostka 2012, 2014), India's Energy Conservation Act (2001) gave the Bureau of Energy Efficiency (BEE) a formal legal mandate but not the capacity to fulfil that mandate. At the national level it had limited staff numbers and at the state level it was dependent on different agencies in each state to act as its state-level implementing partners. In many cases these were Renewable Energy Development Agencies (REDAs) that were set up to pilot the implementation of small-scale renewable energy projects and were themselves generally limited in terms of institutional presence to the state capitals. Recognition of these constraints provided the basis for BEE to develop an incremental process of expanding its influence based on the recognition that "the major constraints on financing and implementing energy efficiency are institutional [rather than technological] in nature" (Chaudhary et al., 2012, p. 49).

Energy efficiency in China also involves a complex institutional architecture (Ran, 2013) that Lieberthal and Oksenberg (1988) referred to as "fragmented authoritarianism". China has sought to address this challenge by integrating climate change mitigation into broader incentive structures. Energy efficiency has been integrated with other policy priorities by incorporating targets for energy efficiency into the system of targets for subnational levels of government and state-owned enterprises, which translates into individual incentives for local officials. This pushes the decisions and trade-offs about how energy efficiency targets are to be met and how energy efficiency is to be balanced against other priorities down to the local level. Local governments have responded by informally "bundling" 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 (Kostka & Hobbs, 2012).

Our evidence suggests that mechanisms were selected based on the opportunities available to specific agencies given their position within government hierarchies and the level of priority given to energy efficiency. This focus on overcoming constraints can be a productive force in shaping the state's response to climate change by providing an effective means of narrowing the government's focus towards a manageable set of activities. Thus, while there has been a particular focus on problem-driven approaches (Andrews et al., 2017), constraint-driven approaches may be equally

important: it can be the limits on the authority and influence of the responsible agencies rather than the ostensible policy issue that inform sustained commitment to a particular policy approach.

3. Creative manoeuvres to overcome constraints

In both countries, the constraints the relevant agencies faced pushed them towards building a broader coalition of actors with an interest in advancing their objectives. Their strategies 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 previous work, we compared what we called China's "state-signalling" approach and India's "market-plus" approach (Harrison & Kostka, 2014). In this article, we draw out some of the commonalities about how government agencies in both countries sought to "think and work politically" and adaptively in order to overcome the obstacles they faced in putting a new and complex issue on the policy agenda. We also identify the challenges they face in sustaining these coalitions as circumstances change.

Our analysis focuses on the practices government agencies used in order to build informal coalitions that could advance and sustain their 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 there is not a set of natural coalition partners with clearly aligned interests and so 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 together. This has been achieved through deliberate measures to align the interests of diverse groups that we refer to as "framing" and "bundling" as a way of bringing on board new partners who might not necessarily have a prior commitment to climate change mitigation.

3.1 Framing

Framing refers to the narrative presented in formal climate change policies in order to reconcile climate change with existing developmental priorities. As a discursive device, it has limited direct impact on what actually gets implemented with "national government planning … provid[ing] at best a framework for action" (Gilley, 2017, p. 742) – for example India's missions under its National Action Plan on Climate Change 'are guidelines more than specific policies' (Aamodt & Stensdal, 2017, p. 118). Nevertheless, the narratives presented in these documents lay the basis for the more active bundling strategies that we describe in the following section, as well as mitigating the potential for

direct opposition. As Dubash and Jogesh argue for the state-level climate change action plans introduced in India, "climate plans … are more appropriately viewed as the first step in an iterative process, rather than the launch pad for implementing policies" (Dubash & Jogesh, 2014, p. 91), but they have led to a conversation at the state level, and in some cases to deepened engagement by key bureaucrats in the state' (Dubash & Joseph, 2016, pp. 51–52)

Prior to the Paris Agreement, both China and India had sought to position action on climate change within their wider developmental objectives. The attention paid to energy production and energy efficiency in China's National Climate Change Programme (NDRC, 2007) reflects China's view that energy security is vital for the country's future development path. In the National Climate Change Programme and during the country's 11th Five Year Plan (2005–2010), Chinese government officials stressed the importance of safe and secure access to a diverse range of energy sources. Since 2012, with changing domestic priorities triggered by a chronic air pollution crisis (referred to by some media as China's 'airpocalyse'),[4] the framing moved from stressing the availability of energy sources to a frame of sustainability and environmental stewardship (Gippner & Torney, 2017). Two factors explain the shift in frames in China. China's dependence on imported coal improved (BP, 2015) and poor air quality in Chinese cities started to give rise to environmental protests and online complaints. As a result, Premier Li Keqian started a "war on pollution" in 2013. Under the new leadership of Xi Jinping, climate and energy policy goals are becoming more stringent with top-down air pollution monitoring and supervision being carried out with renewed vigour. This included introducing real-time monitoring to more than 15,000 large factories, at least nine provinces establishing an environmental police, and a large and well funded cross-regional Air Pollution Action Plan (Wong & Karplus, 2017; Kostka & Zhang, 2018). As a result, climate change mitigation policies that also address air pollution have increased in importance since 2012.

India's National Action Plan on Climate Change (PMCCC, 2008) presented India as faced with the "challenge of sustaining its rapid economic growth while dealing with the global threat of climate change" (PMCCC, 2008, p. 1). The document used the language of 'co-benefits' to reconcile 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' with its increased interest in pursuing opportunities for actions that will both lead to reductions in CO_2 intensity and, simultaneously, bring benefits in other areas. The Action Plan "identifies measures that promote [India's] development objectives, while also yielding co-benefits for addressing climate change effectively" (PMCCC, 2008,

[4] https://www.ft.com/content/46cbaeea-c669-11e6-8f29-9445cac8966f

p. 13). The language of co-benefits is thus used to bundle climate change mitigation together with more established policy priorities.

A similar framing is used in India's submission setting out its Nationally Determined Contribution (NDC) under the Paris Agreement. The overall narrative of the document is captured in the subheading 'Working Towards Climate Justice', which emphasises the primary responsibility of developed countries, but highlights that the steps India has taken are unique for a country at its level of development. The narrative of co-benefits features less strongly than in the National Action Plan, presumably because this is a document with an international audience, but it still restates that India's "current development paradigm reiterates the focus on sustainable growth and aims to exploit the co-benefits of addressing climate change along with promoting economic growth" (GOI, 2015, p. 7), and emphasises that "India's development plans will continue to lay a balanced emphasis on economic development and environment" (GOI, 2015, p. 34). Dubash argues that India's NDC includes calculations of its requirements for external finance that it may have little expectation of receiving because "these numbers are at least as much about reinforcing the principle of who is responsible, even while action on both climate mitigation and adaptation proceeds with domestic funds" (Dubash, 2017).

China's submission under the Paris Agreement emphasises the extent of the mitigation measures it has already put in place and frames its future commitment in terms of both its national interest and its global responsibility but, like India and in keeping with the spirit of the Paris Agreement, it emphasises that its commitments are "based on its national circumstances, development stage, sustainable development strategy and international responsibility". China's nationally determined actions set specific carbon intensity targets and pledge to peak carbon dioxide emissions by 2030. These pledges indicate China's determination to boost its global influence by stepping into the climate change vacuum triggered by the withdrawal of US leadership. China's economic interest in promoting its domestic renewable industry further supported China's target to increase the share of non-fossil fuels in primary energy consumption to around 20% by 2030.

Dubash and Khosla suggest that "co-benefits as a concept has been extremely useful to India's political stance on climate change" (Dubash & Khosla, 2016) by providing a frame for reconciling environmental and developmental objectives. Schmitz reaches a similar conclusion, arguing that "the articulation of a co-benefits approach has enabled stakeholders to engage in the climate change debate without conceding on their priority of accelerating economic development", but also

suggests that “other than the co-benefits approach … no coherent strategy exists” (Schmitz, 2016, p. 10). The concept has been seen as similarly valuable in China (Aunan et al., 2004). Effective framing often involves downplaying complexities. The narrative of co-benefits obscures, and simplifies, often complex policy trade-offs. For example, rural electrification through off-grid renewables is presented as a win-win, even though access to energy is typically inferior to that available on-grid. By seeking to reconcile competing priorities at a high level, the trade-offs are pushed further down, leaving specific agencies or subnational levels of government to grapple with the complex trade-offs that arise in practice. This is the same approach that has now been taken by the Paris Agreement.

Framing is partly a discursive device to reduce the potential controversy around national policy positions by packaging 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. This framing provided the basis for bundling strategies that seek to harness existing policy mechanisms (policy bundling) and align the interests of stakeholders with energy efficiency objectives (interest bundling).

3.2 Bundling

In both countries the ability to build and sustain coalitions is central to the effectiveness and sustainability of climate change policy as governments have engaged with private and state-owned (or hybrid) entities to deliver public outcomes. To do this, 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 research carried out by the Developmental Leadership Program (DLP, 2012) and, in the context of climate change mitigation, in recent research on renewable energy (Schmitz, 2016; Shen, 2017).

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. In China the focus is on pushing the decisions and controversies about how to achieve energy efficiency targets down to the local level, while in India the focus is on broadening the range of actors involved in promoting energy efficiency. Government agencies have sought to overcome their limited capacity by facilitating the emergence of private players who have an incentive to

promote the energy efficiency agenda. While this detaches the state from direct responsibility for implementation, it involves extensive state involvement in creating the rules and players of the market.

In our previous research, we used the term bundling to refer to the strategies used to build these broad coalitions through seeking to align different policy objectives and/or the priorities of different interest groups (Kostka & Hobbs, 2012). We identify two specific forms of bundling that are central to China and India’s approaches to climate change mitigation.

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. Policy-bundling combines different policy objectives so that less popular policy initiatives can benefit from their association with policies that carry wider political support. For example, in China local authorities in Shanxi shut down small mining operations in the name of promoting worker safety and, in doing so, also achieved energy savings. Policy-bundling can also enable newer initiatives to benefit from the institutional structures and know-how of more established policy issues. In India the bundling of climate change mitigation together with more longstanding initiatives to promote energy security has enabled energy efficiency measures to draw on 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. For instance, in China, 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. This form of interest-bundling was used in Shanxi province during China’s 11th Five Year Plan, whereby large enterprises and the provincial government agreed on stricter provincial energy efficiency standards in the steel and magnesium industries. As a result of these high standards, smaller producers were squeezed out of the industry and large enterprises could increase their market share (Kostka & Hobbs, 2012).

In India, the Bureau of Energy Efficiency (BEE) focused on facilitating the emergence of a range of actors with an interest in promoting its energy efficiency objectives. An article co-authored by BEE's former head describes its role as "a coordinating organisation … that is able to help prioritise high-potential areas, identify the innovation gaps that exist and help design programmes to address them' and, in doing so, both 'strengthen and improve the existing actors [and] encourage new players" (Chaudhary et al., 2012, p. 59). 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 foster a coalition that can promote energy efficiency measures more broadly. For example, BEE used a star-labelling scheme for domestic appliances to encourage consumers to take account of an appliance's energy efficiency and running costs.

BEE has sought to broaden its reach by incentivising private actors to be advocates for its agenda and has been intensively involved in promoting the establishment of energy service companies (ESCos) that are intended to provide expert advice and facilitate access to finance for energy efficiency measures. Government support and incentives for energy service companies (ESCos) have been used to develop private sector organisations with an incentive to promote the government's energy efficiency objectives. BEE's logic was that it could build a network of actors with an interest in promoting energy efficiency who would both drive innovation in the system and enable BEE to learn from their experiences (Chaudhary et al., 2012). They, in turn, are responsible for trying to align the interests of public and private sector firms behind energy efficiency objectives by providing technical advice on potentially cost-effective measures and facilitating access to the necessary finance.

4. Adaptive approaches and their limits

Although bundling strategies were intended to simplify the implementation process, in practice managing these incentive structures, and the informal coalitions they have been used to build, has proved complex and capacity intensive. Bundling strategies have required ongoing adaptation and flexibility in order to overcome challenges and sustain support, and have often led to imperfect outcomes.

In India, strategies of interest-bundling around the creation of ESCos have necessitated additional actions to unblock the obstacles faced by ESCos. BEE created the market for ESCos by introducing requirements for specified firms and public sector entities to have energy audits conducted. It also

sought to build confidence in the ESCo sector through an accreditation process. Finally, in response to difficulties in managing the relationship between ESCos and government entities, which included ESCos complaining about delays in receiving payments, BEE established a publically owned ESCo called Energy Efficiency Services Limited (EESL) to both conduct energy audits and act as an intermediary between individual public entities and private ESCos.

This adaptation provided creative ways of overcoming the immediate obstacles facing ESCos but it did not resolve the fundamental challenges ESCos face in driving improvements in energy efficiency. We found that ESCos were primarily focused on the compliance-oriented task of conducting energy audits and making recommendations rather than working with firms and public sector organisations to facilitate the implementation of these recommendations. We also found that accredited ESCos were concentrated in three major cities (Delhi, Mumbai and Pune), raising questions about how far they would be able to build the sustained relationship with particular firms that would be needed for them to overcome the wide range of challenges that impede energy efficiency measures. The list of accredited ESCos for 2017 shows a wider spread across the country including clusters of ESCos in cities in the south of India, particularly Bengaluru, Chennai and Hyderabad. However, it remains the case that BEE has not been able to build a network of ESCos across the country with many states having no accredited ESCos.

In China there has been flexibility in how targets are set, employed and enforced. 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. 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% in the 11th Five Year Plan was reduced to 22% after provincial leaders realised that the original target was unattainable. National leaders' acceptance of this reduction illustrated 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.

While these adaptations were essential to make the system work initially, they also had limitations over the longer term. The system worked well to signal the increased importance of energy efficiency but there were flaws with the target system. Where there was pressure to comply with targets this created perverse incentives, but equally the credibility of the system declined over time

as it became apparent that in general there were few consequences for not meeting targets. This credibility was further undermined because the setting of targets was necessarily rather arbitrary and the quality of data made it difficult to ensure the reliable monitoring of progress against targets (Kostka, 2016). Resistance to these targets also increased as a slowdown in economic growth made it harder to sustain the coalition between larger enterprises and government. In many ways, the system was an effective initial signalling mechanism but future action may require a wider range of measures and different forms of incentives.

Thinking and working politically is necessarily opportunistic, and the focus on adapting can lead to sub-optimal second-best responses that are shaped by the need to navigate multiple constraints rather than providing a clear and direct response to the particular policy issue. Andrews (2014) highlights the similarities between Albert Hirschman's "principle of the hiding hand" and problem-driven iterative adaptation (PDIA). Hirschman's "hiding hand" refers to the idea that the level of complexity involved in implementing a project is rarely visible at the beginning; if it were, he suggests, many development projects would never be initiated but, as it is not, the implementers become committed to the project they have invested their credibility and resources in and therefore have an incentive to find ways of innovating to overcome the obstacles they encounter. However, this lock-in effect can also entail increasing effort that does not deliver comparable benefits.

In both China and India, a lot of effort has been put into using existing institutional structures and reaching out for new coalition partners. Although this was both effective and appropriate at the time, its viability as a long-term strategy depends on the effectiveness of feedback mechanisms to enable learning about the impact of different measures. At the time of our research, these feedback mechanisms appeared to be rather weak and focused on assessing compliance with procedural requirements rather than learning what worked. For example, ESCos complained about a lack of feedback from BEE on the ratings they were given as part of their accreditation process and raised concerns about whether the ratings system provided an appropriate reflection of the relative strenths of each ESCo (Harrison & Kostka, 2012). In China the pressure to be seen to meet targets for energy consumption created incentives for gaming the system. These are discussed in more detail in the next section.

The experience of both China and India highlights the importance of assessing strategies of thinking and working politically over a period of time, including the nature of coalition partners and the incentives they face since this affects the ability of the coalition to evolve as the context changes.

The most important consideration may be to look at the long-term impact of thinking and working politically on the development of organisational capacity and authority, particularly for an issue such as climate change mitigation where current actions are only a starting point in relation to what will ultimately be required. 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. This makes it particularly important to pay attention to the interplay between the political and technical dimensions of climate change mitigation policies.

5. Limits to thinking and working politically: perverse incentives and diminishing returns

In both countries we found that pragmatic approaches leveraging on what already exists made significant progress in putting energy efficiency on the agenda, strengthening institutional presence (in India) and delivering improvements in energy efficiency (in China). Yet, we also found that these tactics had significant limitations. While there was probably no other way that the policy space given to climate change mitigation could have increased so rapidly, there are significant side effects that arise as a result of the traction gained by these initial policy approaches.

A key strategy in bypassing the need for overtly controversial decisions was to try to provide incentives to bring a wider range of actors on board. These were career incentives in China and, ostensibly, market incentives in India. However, in both cases we made similar findings about the limitations of incentives, echoing a broader body of literature that highlights the tendency for sharp incentives to create perverse incentives (Bevan & Hood, 2016; Carter, 1989; Chemouni, 2014; Harrison, 2016). In China, this was about the perverse incentives created by targets that were effective at ensuring greater attention was given to energy efficiency but also incentivised gaming where meeting annual targets takes precedence over sustainable improvements in energy efficiency. The examples range from putting companies temporarily to sleep in order to bring down energy consumption levels to more socially damaging examples such as cutting electricity to households or even hospitals, to cases of creative reporting and data manipulation.

In India, the system to support energy service companies created stronger incentives for energy audits to be conducted than to support the actual implementation of energy efficiency measures, and the accreditation process led to a predominance of firms being based in the major cities, raising

questions about how far the creation of ESCos has provided BEE with a viable network of partners for promoting its agenda across the country. These examples illustrate that the effective application of incentives is enormously capacity intensive. Furthermore, a reliance on incentives may not create viable long-term interest groups by incentivising narrow compliance or gaming over the pursuit of common objectives.

In this context, the emphasis in thinking and working politically on building coalitions can run into wider problems. For example, in China the top cadres in local government change their posts every three years, which creates short-term time horizons that may not fit with the length of time required for driving through more high quality energy efficiency measures. To address this, China is beginning to introduce a "lifelong accountability" system so that even once a cadre has been promoted events that occurred in his/her locality can still be added to his/her 'personal file'. The goal is to encourage more long term responsibility, but it raises a question about the administrative complexity of such a system and how practical it is to determine responsibility for past action. This reinforces the point made elsewhere in this article that reliance on incentives, while initially seen as a relatively easy option, can lead to ever growing levels of complexity.

Thinking and working politically is hard to do over the long term in a consistent way because interests and priorities change, and because it is heavily dependent on the individual so that the viability of the coalition may change when the individuals change. It is particularly hard to maintain coalitions over time when conditions get difficult and plausible co-benefits become harder to construct. In China, the challenges increased after 2010 as slowing growth and the first negative effects for growth of some of the initial energy saving policies affected the willingness of informal coalition partners to maintain the coalition.

This means that informal coalitions can quickly dissolve if not developed or maintained. Triggered by national pressures to lower pollution, Shanxi province was a frontrunner in energy efficiency policy implementation under the 11th Five Year Plan (2005–2010). Between 2005 and 2010, provincial leaders in Shanxi province restructured and closed energy inefficient coke enterprises and coal mines and implemented provincial energy efficiency standards in some industries that were stricter than those set out at the national level (Kostka & Hobbs, 2012).[5] However, these company closures

[5] These provincial efficiency standards were created by large provincial enterprises themselves giving them room to account for their own interests. Although it seems counter-intuitive for enterprises to willingly draft tough standards, especially when they are sufficiently stringent to lead to cost increases, in fact, many large enterprises have incentives to create high efficiency standards to squeeze small producers out of the industry and increase their market share. One manager of a large magnesium enterprise cited this as a major reason for supporting strict standards.

and new standards contributed to slowing growth in the province and, when Shanxi's GDP growth dropped dramatically from double digit growth figures to only 4% at the end of the 11th Five Year Plan, making Shanxi one of the slowest growing provinces in China, provincial leaders reversed many of their energy saving strategies and started to reopen some of the coal mines that were initially shut, approve new coal projects and to place less emphasis on provincial energy efficiency standards (interviews by author in 2011; *The Economist*, 2015, Reuters, 2017).[6]

These issues suggest that a key challenge is to consider the relationship between the more opportunistic strategies of thinking and working politically that often focus on quite short-term objectives and the longer term task of building broad support for particular policy measures. In the early stages of policy implementation these informal coalitions can enable rapid progress, experimentation and flexibility in finding ways to address complex challenges, but this flexibility also has its downsides as these coalitions can disintegrate rapidly when conditions change. Shen (2016) argues, in the context of China's approach to renewable energy, that this necessitates a shift away from "instrumental interests" towards building "core values". It is not clear whether there is necessarily a trade-off between the two or whether a focus on instrumental interests can help to build core values over time. However, there does appear to be growing evidence that a focus on using incentives to harness instrumental interests is likely to run into significant limitations, and that research on thinking and working politically needs to take account of these more long-term effects.

In addition to these interest-based coalitions, agencies can also draw on coalitions based on personal and professional networks (Chatterjee, 2017, Harrison & Kostka, 2012). These are often less deliberate creations, but they can still be influenced, often indirectly, by government policies and may provide a more robust set of networks than the interest-based coalitions we have focused on above. For example, the Bureau of Energy Efficiency was aided in boosting its organisational profile by the reputation of its head, Dr Ajay Mathur, who was regularly invited to speak at a wide range of industry events, which provided BEE with an important mechanism for raising awareness of its work. After leaving BEE, Dr Mathur became the Director General of a leading policy institute on climate

[6] Interviews conducted by the author in Taiyuan, Shanxi, 2011 reveal that top provincial leadership admitted that Shanxi province experienced negative growth and this triggered the change to side-line environmental protection and energy efficiency policies in favour of maximizing GDP.

change issues, The Energy and Resources Institute, indicating how the "boundary-crossing" that takes place during an individual's career can foster cross-sectoral ties (Lewis, 2012).

As an organisation matures, the range of networks it is able to draw upon may expand. The West Bengal Renewable Energy Development Agency (WBREDA)[7] was led from its inception by a man, Mr Gon Chaudhuri, who became the most visible face of the renewable energy sector in West Bengal. Businesses generally talked about having dealt with him rather than WBREDA, and he was referred to as a "towering figure" in the sector. However, WBREDA also developed a profile independent of its founder through a wider professional network shaped by long-running government involvement in renewable energy. The establishment of the School of Energy Studies[8] at Jadavpur University in Kolkata helped to create not just a skills base, but also a professional network. Many of those in the renewable energy field in West Bengal, including Mr Gon Chaudhuri,[9] studied at the School. They all knew Mr Gon Chaudhuri, and vice versa, even if they did not always enjoy close relations. The leaders of renewable energy companies also typically identified links with one of the professors associated with the School. Furthermore, several staff members in WBREDA studied in the School and so had their own connections into the professional network.

This professional network was reproduced and evolved over time, helping to reduce the dependency of WBREDA on Mr Gon Chaudhuri by ensuring that many of the staff had connections with other people in the renewable energy field. WBREDA's day-to-day work meant staff members 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. The network is therefore reinforced by day-to-day interactions. Such

[7] 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). Although WBREDA 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.

[8] 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.

[9] Mr Gon Chaudhuri studied a short course there and also studied engineering at Jadavpur for his original degree.

networks may become more common as renewable energy policy matures. For example, Gujarat "signed an agreement [in 2008] with New Delhi's Energy and Resources Institute (TERI) to build administrative capacity for climate change policy in the state" and "has [also] created a Management Education Center for Climate Change at Gujarat University that sends staff directly into key agencies" (Gilley, 2017, p. 742). The difference between these broader, less deliberate, professional networks and the interest-based coalitions we focus on above is an important issue that warrants further research.

6. Conclusion

We have used research on early efforts to raise the profile of energy efficiency in China and India to explore the opportunities and limitations of thinking and working politically in government activites. In both countries, the constraints government agencies faced meant they approached energy efficiency as both a technical and political issue, using strategies of bundling and framing to broaden the coalition of actors with an interest in energy efficiency. The local specificity of these strategies means they cannot be standardised and a key lesson is that international processes need to allow sufficient flexibility for such manoeuvres, as the Paris Agreement seeks to do.

At one level, the success of these strategies is evident from the increased importance of energy efficiency in both countries. However, our research raises questions about whether these initial steps layed an effective basis for more long-term emissions reductions. Bundling of interests and policies can be especially effective in the early phase of coalition formation, but policy priorities and interests change over time, requiring coalitions to readjust. In particular, a focus on incentives may be insufficient for prioritising energy efficiency measures that deliver long term benefits. In China, the more aggressive approach appeared to deliver more initial impact but a combination of slowing economic growth and people's ability to game the system raised questions about the long-term viability of such a complex incentive system. China's experience suggests that informal coalitions may be effective in the short-term but are unlikely to be sustainable when things get difficult and may not prove adaptable to new challenges.

Our findings also suggest that building coalitions is highly capacity intensive. 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 is accompanied by 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 this context, we highlight the role of professional networks that are both an important enabling factor for bundling strategies, and potentially provide the basis for more long-term alliances than those based on economic incentives alone. The importance of these networks means sustainable 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.

Our findings suggest some important areas for future research. In particular, they raise questions about the short versus long-term effects of using bundling and a focus on incentives as a tool for coalition formation. This implies a need to trace how the types of informal alliances we describe adapt and evolve over time, including the dynamic effects and feedback mechanisms of these coalitions on the more long-term capacity and interests of different groups. This is particularly important given the level of state capacity required to build, manage and sustain these coalitions. This is an issue that has received little attention to date in the literature on thinking and working politically and implies a need for engagement with the question of how strategies for thinking and working politically interact with wider bureaucratic structures.

First submitted September 2017

Final draft accepted April 2018

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