Overview

The Practice and Politics of Indian Electricity Regulation

INTRODUCTION

Independent agencies for economic regulation are a nascent institution in India. Perspectives on these bodies are widely varied. Some view them as an unwelcome additional overlay of the state, others as a relatively harmless irritant, and yet others as an institution with unrealised potential. Too often, perspectives on regulation are shaped by preconceived notions of what regulators can and cannot, and should and should not, be doing. Moving beyond preconceived ideas to firmer empirical terrain, we find fertile ground to examine the achievements regulators have managed, against what odds, through what means, and with what potential for improvement.

This report aims to provide detailed empirical information on how regulatory bodies in one sector – electricity – function in practice, so as to add to both the academic and policy debates on regulation in India. We approach this study of regulation by examining electricity regulatory agencies in three Indian states – Andhra Pradesh, Karnataka and Delhi. We pick the electricity sector both because of an interest in contributing to the debate in this critical sector, and because electricity offers opportunities for a comparative analysis of regulation over a relatively long duration.

This work is distinguished by three aspects of its design. First, we go beyond the legal framework of regulation to understand regulation in practice. This approach allows us to look at how politics is intertwined with the regulatory process. To do so, we have relied heavily on interview research with the full set of players in the electricity regulatory arena. Second, we focus on the process through which regulatory decisions are made and the implications of those processes for regulatory outcomes. We do not intend to, nor are we competent to, second-guess regulatory decisions. However, an

examination of how formal procedures and informal practice combine to shape decisions provides us insight into both the present and future of regulation. Third, we examine regulation as an emergent arena of democratic politics by looking at the provisions and procedures for stakeholder engagement in regulation, the use of those procedures, and the implications and outcomes of their use.

Not surprisingly, the result is a mixed bag, with a few positives, many reverses, and much scope for improvement. However, our intent is not to conduct an evaluation, but rather to obtain a more realistic picture to guide future improvements.

This introductory chapter serves as a stand-alone overview for the study. The remainder of this opening section provides the background and motivation for the study, and describes the research approach, methods and data. Section II summarises the findings of the three case study chapters, and Section III of this chapter provides some conclusions and recommendations for future action. The reader who wishes to quickly peruse our main conclusions may turn directly to Section III.

Each of the three chapters that follow provides a detailed analysis of regulation in practice in one state. It is our hope that the material presented here will contribute to an examination of the path forward for Indian electricity, and also contribute to the wider discussion over the role of independent economic regulation.

Background and Motivation: The Role of Regulation in Electricity Reform and the Spread of Regulatory Agencies

The Role of Regulation in Indian Electricity Reform

The decade of the 1990s was transformative for Indian power, as for the electricity sector globally. Until 1991, India conformed to the then-prevailing global model of vertically integrated and publicly owned and operated power. The record was mixed. Generation capacity proceeded at a good rate of 9 per cent per year, but the sector was increasingly beset by inefficiencies and management pathologies, while the reality of rural electrification belied the often rosy official figures.[1] Spurred by global rumblings around independent power production, the emergence of a new model for electricity around unbundled utilities and a domestic balance of payments crisis, India started a fitful trajectory toward remaking of its electricity sector in the early 1990s.

Reforms began at 'the wrong end' of the sector, generation, partly in response to the need to generate investment, with decidedly mixed results.[2] Only in the middle of the decade did the focus shift to the distribution

sector, driven by both internal and external factors.[3] Internally. the falling quality of supply, and rising losses in the sector called for attention. Externally, a drying up of finance by donor agencies, the emergence of a global model of electricity around private ownership and market competition, and a growing internal fiscal crisis to which the power sector was a major contributor suggested business as usual was no longer viable. These new realities were crystallised and melded into a reform programme by the World Bank, who placed an open offer of support to reforming states on the table. The role of independent regulation was a key component of the new approach to electricity reform.

Orissa was the first state in India to undertake distribution reform, supported by a World Bank loan, but with considerable backing from the political and bureaucratic leadership of the state. The vision for regulation within reforms is explicit in the discussions prior to and around the Orissa reform design: '. . . to ensure the sustainability of tariff reform . . . *inter alia* to attract sufficient private investment and protect the interests of consumers'.[4] To do this, the regulator was '. . . to insulate Orissa's power sector from the government and ensure its . . . autonomy'. In other words, the fundamental purpose of electricity regulation was to create an apolitical space for electricity decision making, both to send a signal of credibility to investors and to protect consumers. Implementation of this vision fell largely to external consultants. However, among insiders, the feasibility of this vision was less clear. Some saw regulation only as a requirement of funding institutions or as a relatively costless diversionary tactic that the government could adopt to signal seriousness about reform.[5]

Once the Orissa Electricity Regulatory Commission (OERC) began its work, the double-edged nature of regulatory 'independence' became apparent. The OERC did not quickly raise tariffs to cost-recovery rates required to attract investors, as reform designers had assumed they would. Instead, the OERC argued that there were no grounds for placing the cost of high (and unknown) transmission and distribution losses on consumers, and that the utility should bear the cost of these losses as an incentive to reduce them. Even as the government lost control over use of tariff setting for populist and other political purposes, so too did reformers lose control over tariffs as a device to attract investors.

Despite this decidedly mixed result, the Orissa approach to regulation has rapidly spread to other states, and was adopted more or less intact by the Central Government in the form of an Electricity Regulatory Commissions Act (1998). Since the electricity sector has remained in government hands in most states, India entered uncharted territory by setting up regulatory bodies to regulate state-owned rather than private entities. Thus regulation has been based on the somewhat questionable premise that it is feasible to create an apolitical regulatory sphere simply by legislating one.

The Electricity Act (2003) has retained but extended the same approach.[6] In practical terms, regulators have a central role in implementing both the incentive based mechanism for discipline introduced by the Act – electricity markets – and the rule based mechanisms revolving around regulating tariffs and quality of service.[7] Significantly, even in a sector moving toward competition, regulators are expected to play a considerable role.[8] They will continue to be central to regulating prices to final consumers, even if the approach shifts to a more performance-oriented approach. In addition, they will have a key role in regulating markets – whether wholesale or retail. For example, in the UK, the regulator has had to intervene on numerous occasions to level the playing field or to break monopolies; a greater part of the regulator's resources are committed to regulating competition than to regulating the natural monopoly parts of the business.[9] Given the continued salience of regulators, the 2003 Act provides no solution to the larger structural problem – while governments formally commit to tying their hands to the mast by establishing regulators, in practice they use very loose knots.

The Early Experience with Electricity Regulation in India

The limited studies of electricity regulation in India may be organised around three categories: how regulation is shaped by the institutional context within which it emerges, how regulation operates in practice, and the role of stakeholders in regulatory governance.

Relatively little work has been done on the first theme on the institutional context for formation of Indian electricity regulation. Looking at the larger picture, Anant and Singh discuss the role of regulation within the form that the legal doctrine of separation of powers takes in India.[10] Kondwani develops a list of institutional attributes relevant to the emergence of a regulator, such as legislative institutions, judicial institutions and informal norms, and makes subjective valuations of them for the central electricity regulator and one state regulator.[11] However, most scholars have not delved into these issues, suggesting instead that local institutional conditions were somewhat sidelined by the donor-led process through which regulation entered India, which in turn was driven by fiscal considerations.[12]

Considerably more work has been done on regulatory practice. An early study by Ahluwalia examined the implicit precepts that guide the tariff philosophy of electricity regulators and questioned their appropriateness.[13] In a path-breaking survey of thirteen state regulatory commissions based on a self-reporting survey, Prayas Energy Group examines institutional attributes, orders and decisions, roles of government and stakeholder related provisions.[14] They find that government interference and weak regulatory authority is the norm. Several other researchers also note the problem of independence.

In a study of five states, Mahalingam points out the continued shadow of vote bank politics[15] and in an insightful paper the former Secretary of the Karnataka regulator notes that the government's 'de facto role is considerably larger than its de jure position'.[16] Faced with this reality, S L Rao concludes in his review of regulation that regulation of publicly owned utilities is a large part of the problem, since utility heads bring their own networks which provide direct access to high levels of government.[17] The selection process for regulators and concerns about the narrow range of appointees and their close links to government comes in for scrutiny by many scholars.[18] Srinivasa-Raghavan concludes, somewhat pessimistically, that independence requires a greater level of political maturity than is present in India today.[19]

For several observers of the regulatory process, the new governance principles of transparency, participation and due process are critical to the effectiveness and legitimacy of regulators.[20] The survey by Prayas Energy Group finds that while regulatory procedures have been put in place, the implementation of key provisions around transparency and effective mechanisms for participation remain weak. A second study of three regulatory bodies under the framework of the Electricity Governance Initiative, an international collaborative effort, reinforces these conclusions.[21] They additionally note the need for capacity building for stakeholders to engage regulatory processes.

The composite picture that emerges is a troubling one. Much of the effectiveness of the larger reform design as laid out in the Electricity Act (2003) rests on regulatory agencies, but regulators themselves were introduced based on a problematic assumption of easy separability between politics and regulation, which has proved to be hard to sustain. In this view, regulatory outcomes have become endogenous to the politics of the sector. While governance innovations latent in regulation are a definite step forward, these too have been implemented only in the breach.

The Spread of Independent Regulation

The spread of regulation is not limited to electricity. Despite an uncertain record with electricity regulators, regulation has also widely spread in other arenas. Electricity is most often compared to the telecom sector, where the Telecom Regulatory Authority of India is widely pronounced a success.[22] Independent regulators have been established or are planned for ports, airports, petroleum and natural gas, posts, and water sectors.[23]

This proliferation has led the Planning Commission of the Government of India to consider development of a cogent national philosophy of regulation.[24] As the Planning Commission correctly suggests, questions of democratic accountability, a uniform framework for regulation –

institutionally and with regard to powers – concerns over independence, and approaches to competition all require detailed thought and a consistent rather than ad hoc approach.

Research Objective and Approach, Methodology, and Data

Research Objective and Approach

Given the limited history of regulation in India, scholarly work on regulation in India has only begun to explore how problems of autonomy and lack of accountability are manifest. This study aims to build on and complement the existing work on electricity regulation through an in-depth and systematic look at how regulatory decision-making processes work in practice. We aim to contribute to a debate and discussion about revitalising electricity regulators, to make them function as independent but democratic agencies. We also aim to contribute to the larger debate about approaches to and the role of independent regulation in other infrastructure sectors with similar characteristics of rapid reforms and public sector dominance.

We organise our research into three areas: institutional and political context of regulatory establishment; how regulation operates in practice, combining formal and informal structures and pressures; and the role of stakeholders in regulatory governance. Below we briefly discuss the relevant literature on each point prior to formulating our guiding research question for each area of research.

Institutional and Political Context: The larger institutional context within which regulation is set has considerable implications for the ability for government to signal credible restraints on arbitrary administrative action, and on the form that regulation will take.[25] This significant insight has been all but forgotten in subsequent policy design, which has tended to follow a single institutional model of independent regulation.[26] The relevant institutional contexts include the legislature, judicial institutions, customs and norms, administrative traditions and the like.[27] A parallel literature in political science examines the conditions under which governments can be expected to delegate authority to independent agencies.[28] In India, as discussed above, this question takes on less importance because of the role of donors in stimulating regulation and the subsequent diffusion through a process of isomorphism. Instead, we follow Hancher and Moran, and Thatcher and Stone Sweet on the significance of historical timing in shaping regulatory form.[29] Drawing on these two themes, we look beyond the formal legal frameworks for electricity regulators in each state, which are reasonably

consistent, to explore the immediate political context of reform within which regulation is established. We examine the manner in which it shapes both the explicit mandate and the implicit constraints under which the regulator functions, both of which are centrally relevant to understanding individual state-level experiences with regulators. This leads to the following questions:

Q1. How are formal regulatory structures and capacities, and informal regulatory constraints shaped by the immediate political and reform context within which regulators are formed?

Regulation in Practice: Much of the rich literature on regulation starts from the understanding that a focus on the legal framework for regulation alone is incomplete, and that a fuller understanding of regulation and its impact rests in exploring the practice of regulation. This literature, particularly in the American context, has swung between a somewhat simplistic view of regulation in the public interest, to the extreme pessimism of 'regulatory capture'.[30] An alternative view to capture, and one salient to India, is the 'public choice' perspective that regulation is an avenue through which the political elite further their interests and consolidate their power.[31] More recently, an institutionalist perspective has emerged for which the key question is understanding how regulation operates in specific contexts, keeping in mind both opposing perspectives.[32] From this standpoint, technical competence is an insufficient basis for regulatory legitimacy, since many decisions inherently involve judgements and balancing of interests.[33] This institutionalist perspective is the one we bring to this study, and which allows us to go beyond the limited lens of autonomy – regulatory independence or state capture – to examine the nuances of actual decisions. A central theme of this approach is an understanding and mapping of the larger 'regulatory space' which includes not only regulator and regulated, but also the state and the entire cast of supporting characters, including stakeholders.[34] Also relevant to this view is the everyday routines and customs that regulators and their staff bring, and the sources of those routines, whether an administrative tradition such as the IAS, or the historic practices of public utilities. These practices are relevant to the regulatory approach or style, which can vary from one that presumes authority and command to a more dialogue-driven approach that sees command as only one, relatively small, component of a regulatory repertoire.[35] In this study we examine regulatory action in particular contexts, with attention to both regulatory space and regulatory style to understand regulation in practice, based on the following question:

Q2. How do regulators make decisions? How do they interact with regulated utilities, government and other stakeholders in the course of decision-making, and with what impact on their decisions?

Role of Stakeholders: Viewing technical competence as necessary but far from sufficient for effective and credible regulation opens the door to a far broader perspective – a stakeholder view of regulation. Balancing multiple interests and applying discretion requires that legitimacy be based on wide participation rather than technical expertise alone.[36] It also requires that regulators explain the basis for their decisions, as a basis for a '360°' view of accountability' not only to legislature and executive, but also to regulated entities and the public.[37] To ensure this outcome requires a particular emphasis on regulatory procedures of transparency, participation and accountability. Critically, it also requires attention to the capacity of stakeholders from all backgrounds to represent their interests and/or intervention by regulators to make sure these views are represented. The underlying idea is that better and more legitimate answers to regulatory questions will emerge through informed deliberation through a structured regulatory process.[38] Recent work has begun to put flesh on the bones of these ideas, providing ways of measuring regulatory governance. For example, Hira et al. conduct a review of regulatory procedures in multiple countries, while the Electricity Governance Initiative develops and applies a 'toolkit' approach to governance of electricity, including regulation.[39] The feasibility of a stakeholder approach to regulation rests heavily, however, on this perspective being internalised within regulatory bodies themselves, effective procedures on paper and in practice, and a critical mass of informed and capable stakeholders. This leads us to ask:

Q3. What does an evaluation of regulatory attitudes and procedures, stakeholder involvement and capacity, and perspectives of the stakeholder process from regulators and stakeholders suggest about the potential for a 'stakeholder approach' to regulation in India?

Methodology and Data: The research questions above suggest the need for in-depth analysis of a few cases, in order to understand the dynamics of regulation in practice. Accordingly, we study the institutional and political context, regulation in practice and the stakeholder process in three states – Andhra Pradesh, Delhi and Karnataka. These three cases were chosen to reflect specific and interesting contexts, rather than as 'representative' states to permit generalisation of our findings. Andhra Pradesh is widely cited as a leading state in electricity reform, and the Andhra Pradesh Electricity Regulatory Commission (APERC) is cited as exemplifying best practice in Indian electricity regulation. Delhi provides one of only two cases of regulating recently privatised distribution companies, but with an unusual framework for the initial regulatory mandate provided to the Delhi Electricity Regulatory Commission (DERC). The Karnataka Electricity Regulatory Commission (KERC) provides another example of a regulator with a sound reputation,

but also one that emphasised its responsibility to protect the consumer interest.

At the same time, all three states have commonalities in their regulatory context that enable comparison across them. They all have sectoral characteristics of entrenched politics, poor management and lack of an information culture. They were all established with similar policy objectives through state reforms that envisioned or enacted privatisation.

In keeping with our focus on in-depth analysis of cases, we restricted the study to three states. From the perspective of generalisability, it would be necessary to include a broader range of states, including relatively small and low profile states, and poor performing states. We acknowledge these limits of the present study and suggest a broader comparative exercise as a useful follow up study.

Our approach to studying each of the three questions listed below is as follows:

- Institutional and political context: Scrutiny of the design of electricity reforms, the rationale for regulation, and the early history and context of each regulator;
- Regulation in practice: Examination of the decision-making process and the scrutiny, communication, and judgements of the regulator in several decision-making areas:
  - Interaction with utilities on validation of utility Expected Recovery of Cost (ERC) filings;
  - Estimation of agricultural consumption;
  - Performance assessment, including an analysis of compliance with regulatory directives;
  - Scrutiny of grid-related investments;
  - Tariff decisions;
  - Generation planning;
  - Regulation making process.
- Role of stakeholders: Analysis of stakeholder submissions, regulatory response and perceptions of effectiveness of stakeholder process.

Data

The data sources for this study include interviews, published documents, internal regulatory documents, and stakeholder and other submissions to regulators. Since a central focus of this study is to understand the real world of regulatory decision-making, going beyond formal procedures to the interactions and understandings that shape regulation in practice, we rely heavily on interviews with key actors in the regulatory process. In keeping

with the conception of a 'regulatory space', we have interviewed not only current and former regulators and their staff, but also government officials, officials from regulated utilities, consultants, industrial and commercial consumers, consumers and consumer advocates, farmers' organisations, NGOs, and media, seeking a balance across these various voices. As Table 1, which provides a summary of interviewees across categories and states, suggests, this study is based on a total of 73 interviews.

Table 1: Background of Interviewees

	Regulators	*Regulatory staff*	*Government officials*	*Utility officials*	*Consultants*	*Industry*	*Consumer and consumer groups*	*Farmers organisations*	*Independent experts*	*Media*	*Total*
Andhra Pradesh	3	3	2	2	6	1	4	1	1	–	23
Delhi	2	5	2	4	3	1	3	–	–	1	21
Karnataka	2	10	2	7	1	1	4	2	–	–	29
Total	7	18	6	13	10	3	11	3	1	1	73

In order to encourage open discussion, we conducted interviews on a not-for-attribution basis. Thus, in the chapters that follow, we ascribe specific points to particular individuals, but in the citations we provide only the category the interviewee represents (regulator, government, etc.) and the date of the interview, but do not identify the individual. This device allows us to safeguard personal stakes, while going beyond a formal and superficial account of decision-making. At the same time, we are acutely aware of the risks of this approach, and have sought to minimise the potential for unfair extrapolation or research prejudice, incorrect information, and strategic or malicious use of interviews by interviewees through three important safeguards. First, as mentioned above, we are careful about citing all substantive points, based on complete interview records, to guard against unfair extrapolation by the authors. Second, we have sought to triangulate information obtained, particularly of a sensitive nature, including through documentary confirmation as discussed below, so as to avoid unduly counting on one perspective. Third, we have sought review of draft chapters by key informants (although not all interviewees for reasons of tractability), including the three regulatory agencies studied, to correct both factual errors and errors of interpretation.

Documentary material analysed included tariff and other orders and regulations, internal regulatory documents obtained from regulators, such as internal memos scrutinising investment schemes, correspondence between

regulators and utilities, stakeholder comments, and where relevant external documents such as World Bank documents or decisions of the Appellate Tribunal. These documents provided raw material for analysis of regulatory decisions, background, context and cross-check material for the interviews, and were also subject to specific analysis such as a scrutiny of stakeholder participation.

The following section provides an overview of the findings of the study across the three states and section III discusses the conclusions and recommendations. The three chapters that follow detail the case studies of the three regulatory agencies. A summary of the analysis of stakeholders is provided in the Appendix.

FINDINGS

This section presents the findings of the study, organised by the three primary research questions, which addresses the importance of institutional and political context, regulation in practice, and the role of stakeholders.

Institutional and Political Context

To a significant extent, the macro-legal framework for electricity regulation has been consistent across states, led by the Orissa experience. The key differences in institutional and political context have to do with the specific reform context in each state, which sets the parameters within which the regulator operates, particularly in its early years. One lasting implication of the early period is the credibility built and capacity developed. This section focuses on these two factors, which are determined by the institutional and political context.

Regulation in the Context of Restructuring and Reform

Electricity regulation has been introduced in India at a time of, and as part of, and effort to rapidly turn-around an ill-performing sector. In all three states studied here, reform has been associated with privatisation, although privatisation has only occurred in Delhi. The cases suggest that establishing regulation in the context of reform introduces a potential tension between regulator and government, one that becomes particularly sharp when reform is aimed at privatisation.

As agents of reform, regulators have had to take bold decisions that take on entrenched interests in the sector. As discussed later, these may include better estimation of agricultural usage, deeper scrutiny of investment and generation decision, and more stringent monitoring of performance.

However, in their early years, regulators have had to take on these challenging tasks without the benefit of a track record of credibility, and often with limited competence and experience. Without this track record, they remain open to charges that they are bureaucratic, 'anti-development', and superfluous. For their part, governments are not freed of the political pressures in the sector simply by the act of establishing independent regulators. In other words, the mere act of establishing regulators did not serve to depoliticise the sector. Instead, the degree of government commitment to reform, and whether it chose to actively support or undermine the regulator, had a major impact on regulatory credibility with the public.

This tension appears particularly pointed in the special case of privatisation-oriented reform. A government aimed at successful privatisation will prioritise predictable regulatory decision-making to attract investors. Regulators, with legal authority over key decisions like tariff-setting and cost scrutiny, require discretionary room to balance investor and consumer interests. Particularly in the context of information shortages and a legacy of flawed management, regulatory choices may not be fully predictable. In the short run, the issue often turns on the choice of tariffs, with regulators choosing between meeting investor expectations and consumer resistance to accept that the promise of future gains are worth tariff increases in the present. Given this situation, governments appear to face a temptation to hobble their newly created agencies from the start in order to safeguard privatisation. The result is a dilemma: governments have to maintain the fiction of regulators as agents of reforms, but to keep reforms on track they may have to act in ways that compromise regulatory independence.

These tensions come out particularly clearly in the Karnataka and Delhi cases. The Karnataka Electricity Regulatory Commission (KERC) faced undercutting of its authority by the government in two ways. First, the government developed and implemented a fiscal restructuring plan based on a World Bank loan, which included operational targets for the power companies. In essence, the government – as owner – was regulating in parallel to the KERC, an avenue that opened the door later to the intrusion of political influences in the sector. Second, in order to attract investors to a proposed privatisation of the incumbent utility, the government proposed a measure allowing private owners to by-pass the regulator for cost increases. Although this measure was never implemented, the process signalled government's weak commitment to the regulatory institution.

In Delhi, the government did impose ex ante limits on regulatory authority. In order to provide a clear regulatory framework for the initial five years after privatisation, the Delhi government tied regulatory hands through a policy directive, while leaving other decisions under regulatory control. This seemed to provide clarity with regard to division of labour, in

contrast to Karnataka, but in reality left the sector open to ambiguous and unstated expectations in a context of divided control. For example, the government assumed, but did not mandate, a trajectory of tariff increases in its privatisation design. Exercising its discretion, the regulatory instead provided a far lower trajectory of increases. Specifically, the regulator based its decisions on immediate circumstances and concerns for its credibility that did not match the pre-privatisation assumptions. Ambiguous expectations and divided control led to several early tussles between regulator and government.

Andhra Pradesh faced the same potential tension between reform and credible regulation, but managed to side-step the problem. As in Karnataka, AP reforms were explicitly tied to a World Bank loan, which simultaneously called for an independent regulator but also called for regular tariff hikes. Under the circumstances, after an initial tariff hike and a resultant public outcry, a combination of timely government subsidies and improved performance obviated the need for additional increases.

The Challenge of Building Regulatory Credibility and Adequate Capacity

The potential for early tension between government and regulator can determine the path of regulatory effectiveness because government support of a regulator, both material and symbolic, is critically important to establishing its early credibility.

In at least two states, the bureaucracy initially viewed the regulator was doing what used to be a clerical job of simple arithmetic, with an attendant lack of respect. In Karnataka, regulatory credibility with the government bureaucracy was dented by several mixed signals from the government. The regulator was perceived as an outsider, and soon after appointment the government moved to reduce his perquisites. In words and in actions, the government sent the signal that the regulator was an 'unwanted child'. In Delhi, although the regulator was entrusted with overseeing a high profile privatisation, the regulator suffered from inadequate material support. The DERC started with minimal staff and capacity, and only built this up very slowly. The Andhra Pradesh regulator fared the best of the three, enjoying the credibility that came with a well coordinated reform effort, and high capacity from the start due to its access to an array of donor agency funded consultants.

Concerns about regulatory institutional credibility were compounded in at least two cases by concerns over the selection process for regulators. In Karnataka, there were widespread perceptions of political influence over appointments and a corresponding concern that regulators would be

beholden to those who appointed them. In Delhi, internal political conflicts between the Chief Minister and the Lieutenant Governor were implicated in the persistence of a single person rather than a full three person Commission. Even in AP, where the regulators had high credibility, the appointment process was widely seen as politically controlled, albeit with benign or even positive effect in this case.

It is also noteworthy that the government establishment, in the form of retired IAS officers, figure prominently in the regulatory process. Both Chairpersons in Karnataka and AP have been retired IAS officers. Delhi, where both Chairpersons have been non-IAS officers, is the exception that proves the rule. The appointment of non-IAS officers is attributed to the strong views against IAS officers as regulators by a senior political figure, and has led to resentment from within Delhi's IAS ranks.

Regulators report both demand and supply side constraints in developing adequate regulatory staff. Demand side constraints include rigidities on hiring procedures and government salary limits. For example, the Delhi regulator is required by the government to try to appoint government employees on deputation from other electricity agencies, and only as a last resort appoint staff on contract from the open market. In all cases, regulators have been unable to attract qualified staff outside the power sector establishment. This is in large part because they cannot compete on salary or prestige with private sector power players or consulting firms in hiring new graduates. On the supply side, regulators are largely limited to hiring staff from the pool of public sector electricity bodies, notably former State Electricity Boards (SEB).

Regulators have exercised considerable discretion in how they respond to both demand and supply side constraints in hiring staff, with the result that there is wide variation in institutional capacity and profile. In Karnataka, the entire staff, with the exception of only one or two individuals, is drawn from a background with the former SEB. This has allowed Karnataka to build a tightly knit team, but also with limited diversity of perspective and skills. Delhi has faced considerable obstacles to finding and hiring suitable staff, with the result that it has been under-staffed for much of its existence. The DERC has also suffered rapid turnover with costs for its institutional memory. Andhra Pradesh has been the most successful at attracting a diverse group of staff drawn the utility and private sector. Notably, the APERC placed considerable early emphasis on wide-scale search and rigorous interview processes for staff selection.

One implication of diverse staff capacity is differential reliance on consultants. The KERC has almost never used in-house consultants, preferring to build in-house capacity. While this is a laudable aim, in practice the KERC has had to rely on expertise and technical input from other sources, notably the regulated utility, to overcome its own capacity shortfalls. The DERC has relied explicitly on consultants in particular for the core

task of tariff order preparation. While capacity building is intended to be part of the consultant role, in practice, DERC still relies on consultants for the tariff process eight years after its creation. The APERC represents the case of greatest consultant involvement in the form of on-site consulting presence since the inception of APERC, funded by donors. At the same time, there has been substantial capacity building, with staff taking on a growing share of the day to day tasks of the regulator, notably tariff orders. Thus the APERC represents perhaps the most productive use of consultants - development of initial skills with subsequent hand-over to the regulatory staff. The danger of continued reliance on consultants, as in Delhi, is the foreclosing of close regulatory scrutiny and regulation based on dialogue that requires a committed and competent regulatory staff.

In sum, electricity regulation is in many ways an extension of the pre-existing electricity establishment, both through selection of regulators and appointment of staff. Building adequate staff capacity has been hamstrung by both demand and supply side constraints. Regulators, with the possible exception of AP, have not yet established themselves as sufficiently desirable places to attract applicants from the private sector. Capacity problems can be exacerbated by a reliance on consultants, although APERC suggests a viable model of transition to greater staff responsibility.

Regulation in Practice

A focus on regulation in practice starts from the presumption that the legal framework alone is an insufficient basis on which to understand the effects of regulation. Here we examine the overarching regulatory 'style' focusing on the manner of interaction with regulated utilities. Moving beyond a manner of interaction requires detailed examination of regulatory approaches to significant areas of decision-making: estimation of agricultural consumption; performance assessment; investment decisions; tariff decisions; generation planning; and regulatory rule-making. We examine each of these in turn.

Regulatory Style and Approach to Interaction with Regulated Utilities

The internal culture of each regulator was strongly shaped by its internal structure and capacity, as well as by dominant personalities, notably of the regulator. In Karnataka, a tightly knit group of former utility employees developed a culture of internal self-reliance. This approach forced internal development of capacity, and brought a sense of common purpose and mission. At the same time, this approach left the KERC with expertise limited to the relatively homogenous experience of their staff, and short of capacity

in key areas. Within the APERC, regulators, staff and consultants developed a well knit working relationship facilitated by the ongoing on-site presence of consultants. Each group brought its own perspective, which was aired in a deliberative style encouraged by the first Chairperson. By contrast, DERC consultants were only present for a few weeks a year during the tariff process, reducing opportunities for both capacity building and robust exchange.

With regard to interaction with regulated utilities, the manner and approach varied considerably across regulators, and also occasionally over time within the tenure of a given regulator. This variation is illustrated by the forms of interaction between regulator and utility in the course of validating annual tariff filings. In its early years, the KERC took an extremely thorough approach, walking through issues in detail during technical validation sessions. However, in keeping with their internal culture, they relied on in-house expertise, and stopped short of investigations and field visits. However, after a change in regulator, the style of engagement shifted to a more ad hoc but collaborative relationship, and formal technical validation meetings stopped altogether.

By contrast, AP set in place a process of regular visits, including field visits by the regulator, and established a relationship of cooperation with the utility. A common theme across all three regulators is the lack of systematic procedure to govern the critically important technical validation process through which the regulator verifies information with which to pass a tariff order. The experience of all three cases studied here may be contrasted to the case of Maharashtra (see Box), which illustrates the benefits of better structured and more transparent interaction between the regulator and utilities. It also illustrates a more general point about the need for standardised procedures in important areas such as technical validation, to avoid ad hoc variations in style, and therefore outcome, based on staffing patterns and changes in individual regulators.

Creating Structure in Regulator-Utility Interactions: The Example of Maharashtra

The information gap between utilities and regulator stands out as a considerable hurdle to effective tariff regulation. Regulators possess the authority but lack the experience and structural incentives to bridge this gap. The Electricity Act 2003 (Section 94) grants regulators the powers of a civil court to obtain information, though they seldom exercise the full extent of these powers. In the three states reviewed here, interaction between the regulator and utilities varied significantly across states and within states over time in form, depth of inquiry, use of consultants, frequency, and style. The case of technical validation sessions in Maharashtra Electricity Regulatory Commission's (MERC) provides an example of a structured interaction with utilities, which if institutionalised across states, could potentially enhance

consistency, rigor and institutional memory in regulators' scrutiny of utility filings.

Technical validation sessions (TVS) are the 10–15 day review period following utilities' Expected Recovery of Costs (ERC) proposal filings, during which the regulator has the opportunity to summon additional data and revise utilities' filings before they determine utilities' Annual Revenue Requirements (ARR).

MERC established a consultative TVS following a favourable experience in its first ARR review in late 1999, where it benefited from the data requests in a petition filed by a research-based consumer advocacy NGO, Prayas. MERC subsequently established a formal process whereby it invited four stakeholder representatives, including Prayas, two industry representatives (Vidharba and Thane-Belapur Industry Associations) and one farmer representative (Mumbai Grahak Panchayat), to attend TVSs between the MERC and utility representatives. When MERC set up its web site in 2002-3, it publicly announced these meetings, effectively making them public. These four NGOs were the only regular attendees, however. Typically, the TVS convened 2-3 times for every tariff order. Today in MERC, the structure of the interaction between TVS members and their expectations have been established, so that the need for face-to-face sessions has reduced.

Participation of stakeholders in the TVS has the advantage over the public hearing process of being more intimate and interactive, and having lower transaction costs. In these TVSs, MERC can ensure that stakeholders' queries and data requests have merit, and that utilities are responsive to them. Public hearings, on the other hand, are typically conducted like a non-adversarial court proceeding. Every intervention has to be submitted beforehand with affidavits, and earns the intervener the right to air objections, but not to receive satisfactory responses. Utilities submit written responses later, which may not be responsive, or leave adequate time for further petitions.

The structure and objective of TVS need to be further developed and established in regulations:

- How often and when should TVS be held?
- Who should be invited, and how should they be selected to achieve balance in representation?
- What standards should be set for their capacity and communication with the regulator?
- How can the utilities be held accountable for their responses, and the regulator for following up with the utility?

The Challenge of Information Asymmetry: The Case of Agriculture

Lack of accurate information on agricultural consumption undercut estimates of vital performance parameters such as losses and theft, and affected the effective subsidy to the sector. Solving the agricultural consumption data problem, therefore, is central to the validity and effectiveness of the entire regulatory exercise. In Karnataka and Andhra Pradesh, the regulator had to immediately contend with a enormous data gap on agricultural consumption

due to a lack of agricultural meters. In both cases, regulators were able to make some, although limited headway toward solving this problem through a technical data-gathering exercise, but both ultimately came up against political barriers and clear lack of cooperation from utilities.

The APERC began by somewhat ambitiously directing an immediate census of all agricultural pumpsets and full metering. When it became clear that there was little progress in implementing these directives, it switched to a sampling survey approach, even while retaining its formal emphasis on full metering. In implementing its sample survey, APERC went to great lengths to devise a credible sampling approach, by agreeing on a methodology with the utility and by seeking outside independent advice. While awaiting this data, it took measures to signal the utility it did not have a free hand in buying power for agriculture. In sum, the APERC found a reasonable indirect way around the continued political obstacles to implementing the clearest solution to the problem – agricultural metering.

The KERC also adopted a sampling approach, at first by issuing directives to the utility. When these data proved unreliable, it commissioned its own independent study. However, this study was only initiated after several years of regulatory efforts, and with limited staff involvement in actual field-level scrutiny and verification.

In both cases the regulator managed to partially plug data gaps through technical intervention, notably through sample surveys, albeit necessarily imperfect and incomplete given the magnitude of the task. In the initial stages, the regulatory goal was a more ambitious one of full metering. However, the political obstacle to full metering of agriculture – the use of electricity to farmers as a populist measure – proved to be binding. As the Andhra Pradesh regulator put it, the Commission had to 'realise its limits'. Within these limits, both Commissions took reasonable measures, and have managed to reduce the information gap in the agricultural sector.

Directing and Enforcing Performance

In the Indian electricity context, stemming losses from theft and mismanagement, and reversing the trend toward ever greater financial losses, is a central and extremely challenging task for regulators. Faced with this challenge, regulators sought to steer utilities through issuance of directives, but were often limited in this approach by limits in their own powers and by unwillingness to pursue a more hands-on and forceful approach.

In its very first tariff order, for example, KERC issued 23 directives, which were proactive, reasoned and set a serious tone for reform of the sector. However, in many cases the utilities did not undertake directed measures, because they had little incentive to implement measures that did not directly enhance utility revenues. As a result many directives were

challenged or ignored, and the KERC found itself with no recourse stronger than a letter to the government urging it to order the utility to comply. Notably, the regulator did initially threaten to withhold future tariff increases, but never followed through.

The DERC used directives as a way of filling data gaps and requiring adherence with its new regulations, notably on performance. In the first year after privatisation, it issued 15 directives. The approach to using directives was guided by an overarching regulatory approach that sought to avoid overt intrusion and micro-management. As a result, the DERC discussed but opted not to pursue more overtly guiding or investigative performance-related investigations measures that were discussed internally within the DERC – such as imposing a bidding requirement for certain contracts. As a result, the DERC, and the sector as a whole, has come under criticism for failing to spot and investigate seemingly large discrepancies in performance. In recent years, however, the DERC has increasingly adopted a more proactive and investigative stance.

The Andhra Pradesh experience differs from the other two in having overt and explicit support from the government for implementation of its directives. During the early years of reform, the Chief Minister held regular meetings with the heads of the utilities to discuss compliance against APERC directives. Moreover, the APERC went somewhat beyond use of directives to also undertake quarterly site visits to signal seriousness of intent. At the same time, despite political support, on occasions when the APERC directives ran counter to political interests – such as agricultural metering or the conduct of energy audits – it was relatively powerless to enforce its views.

The limited efficacy of the directives approach was compounded by both weak monitoring and follow up mechanisms and a reluctance to impose sanctions. For example, the APERC issued 12 directives in FY 2001, of which only one was complied with and six partially complied by the following year. By FY 2005, 10 directives remained uncomplied with or only partially complied with, but the APERC had ceased tracking and monitoring compliance. The situation in the other two regulators reflects a similar lack of rigorous follow up. Moreover, regulators have been extremely reluctant to use their powers of sanction despite this weak compliance record. In neither AP nor Karnataka has a single fine has been imposed. The prevailing view is that sanctions are a last resort, which it is particularly self-destructive to use against a government utility, where the burden is borne by the public. The DERC has been somewhat more willing to use fines, perhaps due to partial private ownership of the utility, having imposed a 'token' penalty against two companies for under-achievement of investment. In other, grievance related cases, the DERC has also exhibited a reluctance to impose fines, although notably this reluctance has substantially disappeared following appointment of a new set of regulators.

Regulators appear to be relatively weak in steering and guiding the performance of utilities, particularly, as in most states, where the government does not provide explicit and overt support to the regulator of the sort enjoyed by APERC. To put it starkly, the experience described here suggests that where utilities do not wish to comply with directives, regulators have had little power to enforce their directives, and where utilities have complied, it is because it is in their own interest to do so, calling into question the value added of regulation. However, this bleak perspective ignores what regulators may be able to achieve through a more hands-on approach to regulation that relies on relentless seeking of data, rigorous monitoring and greater willingness to investigate.

Examples of this approach include the APERC's use of site visits and the DERC's recent willingness to develop to monitor on an ongoing basis and proactively investigate anomalies. At the same time, if these efforts are to actual change politically entrenched patterns of behaviour, they will have to be politically supported through direct support by the government, or indirectly forced through stakeholder pressure. The main message that emerges is that in a context where regulators' direct authority to require actions is limited, a directive based approach may be less useful than one based on more close and direct investigative interaction with the utilities.

Investment Review: Balancing Need, Greed and Politics

Review of investments, or capital expenditure (CapEx) is perhaps the most challenging yet significant job of the regulator. In India, the regulator has to balance the clear need for investment to upgrade flawed and run-down systems, the well known incentive to over-invest in a cost-plus regulatory framework, and the ever-present compulsion of political pressures to invest in particular constituencies or to benefit particular interests.

Given these pressures, plus capacity constraints, regulators tend to undertake detailed, technical scrutiny of proposed investment schemes, often to the exclusion of also asking larger questions about objectives, priorities and implementation. For example, KERC often pushed back hard on project details, in one year returning all seven proposed schemes on grounds such as procedural errors, unrealistic implementation schedules and expenditure targets. In its scrutiny of a High Voltage Distribution System (HVDS) project, the APERC pointed out how incorrect assumptions on numbers of unauthorised connections led to an overestimate of savings from the project.

These detail oriented measures did yield gains. As mentioned above, KERC intervention forced the utility to provide greater specificity and detail. In Delhi, through its scrutiny the DERC reduced approved expenditure considerably, to the extent of about a third of proposed expenditure for two companies in one year. In addition to its detailed scrutiny, the APERC

developed a rigorous monitoring process to ensure capital was actually deployed through a process of issuing financial certificates.

However, these gains were limited by a propensity to focus on details rather than larger questions, and by a reluctance to adopt an openly investigative approach. One view often heard was that the failure to ask probing questions about project rationale, prioritisation and design are due to the lack of expertise within regulatory commissions, which makes them reluctant to challenge utilities on issues on which the latter are better resourced. Notably, however, the three commissions examined here seldom exercised the option of hiring independent expertise to conduct specialised review, which would have been a feasible route past this objection. In only one case KERC did appoint an expert committee to review a particularly large project (five times larger than any previously realised annual investment), the Commission members were hardly independent and included the consultant who drafted the proposal on behalf of the utility. The committee reduced the initial outlay on practical grounds, but did not question the project fundamentals. The DERC stands out for having used site visits to verify CapEx, but despite finding clear evidence of cost inflation, chose not to publicise this evidence nor penalise the company. At the same time, stakeholders criticised the DERC for not questioning the prioritisation of investment in automation and corporate offices. However, there is some evidence that the DERC is moving in the direction of seeking more explicit consideration of costs and benefits.

This muted approach to investigation and publicity is almost certainly tied to regulators' awareness of the political constraints within which they operate. In response to these constraints, regulators are not entirely silenced, but they do pick their battles judiciously, particularly where large, high profile projects are involved. In its early years, the KERC stood its ground in rejecting one high profile investment that would have doubled the asset base of the utility. More recently, however, the KERC has succumbed to pressure from the utility, reversing its initial decision to approve only a pilot with no justification for the reversal. In AP, while regulatory scrutiny led to improvements in a large HVDS investment, staff were well aware of the potential political gains from HVDS project site selection and chose not to question the rationale for the project itself, but only to recommend a staged approach requiring step by step regulatory approval.

Even this relatively reticent approach to scrutiny has been challenged in some quarters. For example, in a case where it approved, but ordered staggered investment, the KERC has been subject to successful appeal by the utility on the grounds that the KERC was operating outside its mandate. Establishing such a precedent is likely to further intimidate regulators into a timid approach to investment scrutiny.

Such timidity is particularly problematic given that for a variety of reasons,

reporting on investment scrutiny is not subject to the same degree of transparency as other regulatory actions. As a result, the option of public pressure to goad regulators into more concerted action is also foreclosed. In AP, for example, investment schemes are entirely out of the public eye, and details on these schemes are seen as technical matters beyond the public's purview. While the situation is somewhat better in Delhi and Karnataka, in these states as well, investment schemes and project review fall outside the public hearings process in tariff review. As a result, there are few opportunities for public engagement on this important dimension of regulatory action.

In sum, regulatory efforts have undoubtedly contributed to gains in investment scrutiny. Moreover, there are some initial signs that regulators are beginning to ask harder questions about costs and benefits of projects, project alternatives, and tracking implementation. Nonetheless, regulators continue to be cautious in negotiating political constraints, either by using conditional and partial approvals, or by seeking the cover of a committee. One way forward toward more bold and investigate investment scrutiny would be greater transparency about investment schemes, which, through exposure and debate, would provide a basis and political justification for looking at the forest and not only the trees.

Generation Planning and Approval: High Stakes, Varied Outcomes

Since power purchase costs account for a very high share of total revenue requirements – between 78 per cent and 80 per cent in AP and Karnataka respectively – regulatory scrutiny of generation planning and approval is critical to safeguarding the public interest. Since regulators only have direct authority to approve projects that are concluded after their creation – although this jurisdictional issue has been disputed – much of these costs currently do not fall under regulatory purview. However, regulatory actions today are an important indicator of their approach tomorrow, when new capacity will form an increasing component of total power costs. This section focuses only on AP and Karnataka, since the DERC did not undertake generation review during the period of this study. Three categories of generation capacity have been the subject of discussion – old projects negotiated before establishment of a regulator, new independent power producers, and the particular case of non-conventional energy (NCE).

Due to the financial stakes involved, and the implications for the tariff, generation issues have arguably generated the maximum pressure on regulators. These pressures include explicit and implicit governmental pressures, pressure from the public, and self-generated pressure within regulatory bodies aware of the implication for their reputation. For example, in Andhra Pradesh, the regulator was subject to direct pressure (which it

resisted) to approve a project by high level government officials, who cited MLA discontent and threats of power shortage. In other cases, the pressure was more indirect, as in the case of four new gas-fired IPP projects that the government signalled it had a considerable stake in expediting. Public pressure has been brought to bear on regulators in both AP, and to a lesser extent in Karnataka, to review and re-open existing PPAs, and to closely scrutinise new IPPs and NCE projects.

The regulatory response to capacity planning issues and various pressures has differed considerably across Commissions, over time within Commissions, and even across types of cases placed before them. The most consistent largest explanatory factor for this variation is the approach and style of individual regulators. For example, the KERC developed a clever, and contentious, legal interpretation to reopen an arbitration panel's decision on the Tannir Bhavi project, and based on careful and probing argumentation, took a decision that reduced costs to consumers. In this case, while public pressures to take action did exist, the KERC could easily have justified inaction based on the law, and went the extra mile based on the conviction of the KERC leadership that the regulator had to intervene in the public interest, even at the risk of undermining investor confidence. This pro-consumer stance was reinforced by their action in a second project.

By contrast, faced with a similar situation of controversial, inherited PPAs, and even greater public unrest, the APERC explored legal avenues, but ultimately concluded it did not have legal scope to reopen concluded PPAs. Instead, the regulator sought to use informal persuasion to renegotiate, which ultimately failed. This was a safe, but also eminently defensible approach.

Where the regulator has hewed to a more consistent line of balancing political and public pressures, as in Andhra Pradesh and Karnataka, regulatory approach has been guided by two factors: a quasi-judicial approach of listening to various views, but with stress placed on the credibility of the source; and a detailed approach based on investigation and independent reasoning. The former has been more consistently applied to large questions with political implications that affect approval as a whole, while the latter is applied where the regulatory staff is on comfortable terrain, such as questions of merit order dispatch.

In an example of the former approach, the APERC was faced with approving four very similar gas-fired IPP projects based on an assessment. The decision turned, in part, on the approved reserve margin and therefore capacity projections for the state. With low capacity projects, not all projects were required, which would require the APERC to make the politically sensitive decision choosing between similar projects. In this case, the APERC initially took a strong stance against high capacity projections. On push-back from the utility, it reconsidered and approved considerably higher projections that would create space for approving all four projects. To do so,

instead of detailed argumentation and reasoning it invoked an estimate of required reserve margin sought from the Central Electricity Authority. In another example from the same projects, it partially resolved a dispute about whether gas would be available by taking at face value an assurance from central gas suppliers that gas would be available, and a supporting letter from the AP Government, although it also limited the damage to the utility from non-availability of gas by deferring the decision by a few years. Among at least some consumer groups, in both these instances this approach lacked credibility as an attempt at taking cover behind a higher authority.

The latter approach of detailed query is limited to technical areas where regulatory staff are on comfortable terrain. For example, in both AP and Karnataka, staff closely questioned cost and performance assumptions for NCE projects. To some extent, the division in approach reflects an artificial distinction between technical analysis with which regulatory staff are comfortable, and the larger commercial implications of investment questions where they are less comfortable taking decisions and seek appeal to authority.

While regulatory approach to generation has been inconsistent, influenced by individuality and often justified by invocation of authority rather than close reasoning, there is little doubt that regulatory oversight has led to significant gains to consumers in a number of cases. These include not only aggressive regulatory action such as in Tannir Bhavi, which also came with costs to investor confidence, but also moderate gains from the APERC's balancing approach in the case of the gas IPP projects and NCE projects. Having regulatory scrutiny, at minimum, forced debate into the open, allowed stakeholder voices to be heard, and required regulators to provide justification of one kind or another. While regulatory scrutiny of generation is a work in progress, it has created pressures for better justified, and therefore better, decisions.

Tariff Setting: No Escape from Politics

The annual tariff setting exercise and the resultant tariff decision is the most closely watched and politically charged part of the regulator's job, since it translates complex regulatory decisions into direct financial implications for consumers that are easily understood. An important part of the rationale for independent regulatory bodies has been to insulate tariff setting from populist politics, by forcing tariffs to be set on clear techno-economic criteria. Tariff decisions have, therefore, also become an important signal of autonomy. While regulators have led to a measure of separation between politicians and tariff setting, the evidence from three states suggest that political concerns have remained an unavoidable part of the regulatory tariff setting process.

The pattern of tariff setting reveals remarkable similarities across the three states. In both Karnataka and Andhra Pradesh, regulators diligently

raised tariffs early in their tenure, particularly for subsidised categories, faced strong public resistance in the form of public protests, and subsequent tariff hikes have been far more muted and, indeed, non-existent in Andhra Pradesh. In Delhi this pattern repeated itself in the first year of a new regulator, while the first regulator had been more cautious about tariff hikes. It is tempting to posit a link between public outcry and regulatory caution and the discussion below provides some evidence for this link.

The APERC's first tariff order raised tariff 15 per cent overall and 54 per cent for domestic users. Following public demonstrations, the Chief Minister announced a countervailing subsidy. Since that initial shock, there has been effectively no increase in tariff, in large part because the government has chosen to mute any potential tariff increases through a corresponding increase in subsidies. This strategy has been made possible because subsidy requirements have been kept in check due to the strong financial performance of the sector. In addition, yearly regulatory imposition of an 'efficiency target', over and above loss reduction targets, leads to a revenue requirement that almost exactly matches revenue, yielding a zero tariff increase.

In Karnataka, the KERC approved two consecutive increases in 2000 and 2002 of 16 per cent, with 60 per cent increases for subsidised categories, which led to public agitations. In 2003 and 2005, the increases were far smaller. The small increase after 2002 could be due to either political caution – particularly given that stakeholder objections in all the early years were rife with concerns about consumers bearing the cost of utility inefficiencies – or simply less need for an increase after two substantial hikes. On at least some occasions, however, the KERC has used the true-up to avoid increases. For example, in the 2003 Amendment Order, the KERC approved power purchase increases due to poor hydro availability that could have lead to a tariff increase beyond that proposed by the utility. However, it deferred to the next filing the bulk of this so as to remain within the nominal tariff increase it projected.

Under the first regulator, the DERC's actions suggest a regulator acutely tuned to political sensibilities. Tariff orders are rife with reference to concern that consumers should not have to bear tariff hikes without a corresponding increase in quality. While this is a reasonable stance, more problematic is a broad public perception that the regulator explicitly or implicitly accepted government direction on tariffs. Whether true or not, that this perception is pervasiveness presents a substantial credibility problem for the DERC. Whether out of a conviction about consumer interests or out of a tacit acceptance of government direction, the DERC has also undertaken a range of creative adjustments to the tariff process, often explicitly justified with reference to minimising tariff hikes. Notably among these are creation of a regulatory asset that helped reduce a potential 30 per cent hike to 10 per

cent, and a reallocation of funds originally designated for the holding company created under the reforms to the Transco. Notably, this acute awareness of the politics of tariff setting does not appear to have translated to the second regulatory commission.

Against this larger picture of regulators working within political boundaries, whether explicitly or implicitly set, stands a moderate record of regulators holding the line against government interference in specific tariff cases. For example, the KERC rejected the government's estimate of agricultural consumption for subsidy and used its own estimate, and also successfully challenged a government order to lower the rate for the information technology sector. In Delhi, the regulator refused to approve a 35 per cent initial tariff hike against pressure from the government, who wanted favourable opening conditions for privatisation. These examples suggest that, at minimum, a regulatory concern for their own credibility in the face of government intervention acts as a partial bulwark against populist tariff setting.

The larger story that emerges, however, is that regulators, like government before them, cannot escape the burden of convincing the public that tariffs are in some sense fair, and should be accepted. Regulators, like governments, have found it hard to justify tariff hikes as a down payment against future uncertain consumer gains. As a result, they have sought creative ways of keeping tariff hikes in check – a regulatory true-up in Karnataka, the device of efficiency gain targets in AP, and the use of a regulatory asset in Delhi. In their attention to politics, it is impossible to separate out the extent to which regulators are dancing to their government's tune and the extent to which they have simply internalised the political costs of unjustified tariffs. Whatever the balance, formal regulatory independence has not translated into a free hand to raise tariffs based on the arithmetic of revenue requirements alone, freed from political considerations. Regulation may be a defence against populism, and has partially proven to be so, but it cannot, and indeed should not, be a bulwark against public pressures to justify and reasonably explain tariff hikes.

Rule-Making at the Intersection with Policy

The regulators task critically involves making regulations pursuant to the Electricity Act and state reform Acts, if any. Regulators typically make two types of regulation: procedural and policy implementation. We focus on the latter, since these provide more insights into decision-making. In practice, the line between policy design and implementation is a thin one, due in no small part to the lack of guidance in the law. This is particularly true for the set of regulations we focused on as a case study for this research – open access regulations. We find that the knowledge required for rule-making is

largely acquired from sources outside the regulator – whether consultants, other regulators, regulated utilities or government bodies. While the process of consultation is reasonably thorough, consultation has relatively little impact on rule framing both because of limited participation, and because rules sometimes boil down to a direct conflict between opposing interests. Where techno-economic criteria are infeasible due to data limitations or simply inapplicable for certain decisions, regulators have to make political choices. Part of the problem can be fixed through strengthened capacity within regulators and stakeholders, but there remains a set of issues at the boundary of policy and regulation with which regulators will continue to grapple.

In addition to basic operating rules for regulators themselves, regulators are grappling with complex regulations governing market transactions in electricity. Given the larger shortage of experience within India on these issues, regulators have had to turn to outsiders for help in framing these rules. The APERC has been a leader in this area, and it has relied heavily on the dedicated consultants that have been located on site at APERC since its creation. Within the APERC, consultants tend to bring a pro-markets and competition mindset shaped by professional training at business schools. This is balanced by a concern for the incumbent utility and for limiting political costs associated with a transition to markets brought by former utility staff and regulators.

Without the use of on-site, long-term consultants, knowledge accumulation in Karnataka and Delhi is self-driven, which can be a drawback and a benefit. In keeping with their own institutional culture, the KERC develops regulations in house through a process of internal learning. In practice, however, they rely heavily on other states, and particularly Andhra Pradesh, as well as on defensible precedents such as national policies or the Central Electricity Regulatory Commission. While this is a reasonable approach, the lack of capacity does translate to a limited willingness to put forward independent ideas. While the concern with building independent capacity is laudable, in practice this has been hard to achieve. The process in Delhi is similar, with perhaps even less of an effort to develop independent views. Given that there is little independent consideration and tailoring of regulation in practice, the de facto situation is that Andhra Pradesh regulation becomes the standard in the other states.

The process through which regulations are drafted and finalised is relatively robust in all three states, although there remain some loopholes. KERC early established a precedent of producing discussion papers and circulating them widely, including beyond the state, seeking comments on draft orders, and documenting public discussion and reasoning behind the final regulation. APERC has also followed a similar process, with one significant shortcoming. While orders are reasoned and include a documentation of the consultation process, the finalisation of a draft

regulation is not accompanied by an order providing this information. Thus, following a consultation process, the public has no way of knowing how its ideas were used, and the reasons for the Commission's final decision. The DERC process is the weakest, with no tradition of consultation papers and proactive efforts to stimulate debate.

The effectiveness of the processes is limited by the capacity of stakeholders to use them. The APERC received ten substantively distinct comments on their open access regulation, and eleven on their draft cross subsidy surcharge order. The KERC received 22 objections on its cross subsidy surcharge order – of which 13 were of similar content from industry representatives – and only 10 for its multi-year tariff order. The DERC received just three substantively different comments on their draft open access regulation, which led the Commission to cancel the hearing. These are relatively thin indications of input, with the DERC, in particular, falling below the threshold of reasonable public debate.

Where a debate occurred, the process took on the character of a battle between competing interests on the regulatory stage. Thus, the main issue in the APERC open access order was whether existing wheeling contracts would be exempt from new regulations, a concession sought and won by holders of these contracts. On the contentious issue of cross subsidy surcharge, the technical debate over alternative methodologies was quickly stripped away to reveal competing interests – the utility and consumers sought an embedded cost methodology that maintained the cross subsidy, while potential open access transactors sought an avoided cost approach to stimulate transactions. Faced with competing interests, and no scope for narrowing differences through discussion, the regulator agreed with the government's viewpoint, which favoured an orderly transition over an early boost to open access. In Karnataka, the KERC chose a similar approach, but in this case the decision was necessitated by a lack of data to follow the competing, pro-open access approach. In such politically charged decisions, this experience suggests, the consultation process at best clearly lays out the options, but cannot diffuse or dilute the political content of the ultimate decision.

There are at least three implications of this account of regulatory rule-making. First, since state by state rule-making is conducted with limited capacity and substantial use of precedent, there is a case for a more deliberate effort to coordinate rule-making across states to improve on the implicit, ad hoc coordination that currently occurs. Second, stakeholder consultation procedures do provide a space for interests to point out egregious errors, but without greater investment in capacity, are limited in their role as a way of strengthening intellectual input and ensuring all views are fairly represented. Third, since many regulations have a policy dimension that irreducibly affects interests one way or another, the mindset of the regulatory body will likely be determinative in how that regulation is framed.

Role of Stakeholders

A stakeholder view of regulation begins with the presumption that effective regulation requires more than technical competence alone; it also requires that the regulator balances multiple interests in the sector. To do so effectively, regulation has to be supported by effective implementation of governance principles such as transparency, accountability and participation. An additional critical element is sufficient capacity of the full range of stakeholders to make effective use of regulatory spaces to articulate their interests and hold regulators accountable. This section examines the performance of regulators in the three states against a stakeholder view of regulation.

Stakeholder Engagement: Gains in Transparency but Limited Substantive Gains

Built into the conception and structure of independent regulatory agencies are procedures for transparency, active engagement by a range of stakeholders, and a requirement for regulators to account for their decisions to the public. While electricity regulators have incorporated the letter of these procedures, their implementation in practice, the extent to which they are used, and their value in strengthening regulation remains a work in progress. Below we describe regulatory transparency, scope and extent of participation and responsiveness.

While procedures for transparency exist in all three regulators, there are considerable variations in their implementation. The internet is a primary and effective vehicle for transparency. Karnataka and AP boast impressive web sites, while the DERC's web site is somewhat weaker. Karnataka also stands out with a regular record of producing annual reports, which are the only required form of reporting to the legislature, while Delhi has produced only one annual report in seven years and AP has produced no annual report after 2002-3.

The single biggest limitation in transparency is that none of the regulators have gone beyond promising access to documentation to actually make it feasible and easy to access documents. Thus, no regulator has produced an index of their documents and clear procedures to access them. Without clear procedures for access, consumers are, in practice, subject to discretionary decisions by documentary gatekeepers. For example, in AP, documents pertaining to investments schemes were initially declared off limits as being technical documents that did not directly relate to the consumer interest, although this decision was reversed on appeal to higher authority. In both AP and Delhi, there was a reluctance to share correspondence with government. By contrast, Karnataka explicitly includes all such correspondence in its annual report.

Procedures for participation have evoked an impressive, if uneven response from stakeholders, as gauged by an examination of responses for the FY 2005 tariff order. For example, the tariff order of FY 2005 evoked 70 responses in Delhi, 302 in Andhra Pradesh, and 5,170 (of which most were duplicates sent in by farmers) in Karnataka. Given their greater access to technical ability and resources, it is perhaps surprising that industry did not dominate these comments. Industry accounted for 10 per cent of responses in AP, 17 per cent in Delhi and a high of 40 per cent in Karnataka. Exploring further, Chambers of Commerce in each state suggest that there is limited involvement from their members in discussing and preparing submissions to the regulator, as signalled by participation in their internal meetings. In the two agricultural states of Karnataka and Andhra Pradesh, farmers are a formidable presence. In both states, but notably Karnataka, they have adopted a policy of blanketing the regulator with identical petitions to signal their insistence on being heard. In Delhi, organised Resident Welfare Associations have been a prominent voice, although the voice of lower income neighbourhoods such as slum areas has been muted. Finally, in all states, individual representations are substantial, from a low of 17 per cent of submissions in Karnataka to 23 per cent in Delhi.

Direct engagement by stakeholders through the comment and hearings process appears to have been more significant than the State Advisory Committees (SAC) set up in all states. In both Karnataka and Andhra Pradesh, consumers voiced their scepticism of the effectiveness of the SAC, and in Delhi the SAC was not mentioned as a useful or valued forum. However, the active efforts of the KERC to establish an office of consumer advocate does stand out as a potentially valuable experiment in stimulating consumer interest, and to a lesser extent, capacity. This office has played an important role in building awareness of the KERC across the state.

With regard to content, there is some evidence that there has been a gradual shift over time from parochial concerns that are largely individual or group grievances, to larger substantive issues. As stakeholder familiarity and sophistication has advanced, individuals and groups have brought up questions on quality of filings, excess expenditures, approval of PPAs and so on. At the same time, regulatory staffs in all states suggest that the sophisticated interventions come from a small and regular set of interveners that numbers less than five in each state, and perhaps even less in Delhi. There has been little systematic investment by stakeholders in their own capacity. For example, the apex group of Delhi's Resident Welfare Associations continue to apply an ad hoc approach to their submissions, relying on information provided by other organisations or on retired engineers in their ranks, rather than a deliberate and comprehensive approach to formulating submissions on tariff orders.

The value and gains from public participation may be examined by assessing the perspectives of both regulators and stakeholders, as well as evidence of substantive and procedural gains from the introduction of regulation. As an initial reaction, regulators and their staff tend to discount stakeholder intervention quite heavily, viewing it as having limited utility focused on grievance issues (Delhi), or 'not enlightened' (Karnataka), or as an avenue to 'vent frustrations' (Andhra Pradesh). On further reflection and probing, however, it becomes clear that stakeholder intervention does provide regulators useful information on alternative means of addressing issues. For example, the hearings process provided the DERC with information on consumer preferences regarding alternative approaches to tariff rationalisation, tariff categories, misuse charges and the like. Interestingly, regulators also use stakeholder interventions strategically to justify intervening in certain issues or to justify particular choices. In Karnataka, the regulator denied employee bonuses to be passed through – a largely symbolic gesture – in response to consumer objections that employees be rewarded for the utilities' inefficiencies. In Delhi, the regulator justified a decision not to pursue a multi-year tariff approach in its first year in part by referring to strong public sentiment against doing so.

For their part, stakeholders in all three states hold deep scepticism about the extent to which regulators consider, and more important, act on their participation. One vividly described the process as 'blowing a conch near a deaf man's ear'. Many describe regulatory failure to suitably respond to objections, even though they are listed in regulator's tariff orders. Particular incidents often deeply colour perceptions, such as the example of a lengthy order on non-conventional energy issued by the APERC a day after a hearings process, suggesting that input received during the hearings was barely considered. In Delhi, perceptions range from a sense from the resident welfare associations that the DERC has 'failed to present the Commission as a friend of the consumer' driven by deep discontent with consumer service issues, to an industry view that at least the glass is half full compared to the pre-regulatory era.

Moving beyond perceptions, there are few substantive gains across the states that can be attributed to the stakeholder participation process. Most notable is the role of transparency and hearings in bringing to the public sphere and in some cases forcing active scrutiny on several issues, the case of power purchase agreements in Andhra Pradesh being one example. In Delhi, stakeholder involvement is seen as having provided consumers an opportunity to point out scope for small but significant adjustment, as in a regulatory decision on how to define connected load in a manner that does not unduly disadvantage some people. However, these gains are restricted to relatively marginal issues, while regulators have been impervious to requests

to take seriously more politically sensitive and substantive issues, such as billing, reporting against performance standards and so on.

However, there is common ground among stakeholders on the promise of future gains from increased transparency and scope for voice built into the regulatory process. Access to tariff orders, and the potential to organise around key issues armed with information are viewed across the three states as a significant gain.

Taken as a whole, the creation of regulatory bodies has stimulated considerable public action and engagement. Yet, this engagement has been uneven, and effective action limited to a few individuals and groups and a few cases. While the stakeholder process has introduced a measure of rationality to relatively marginal decisions that directly impact consumers, it has proved to be an inadequate lever to force regulatory attention to larger, substantive issues such as loss reduction and generation (although Andhra Pradesh is a partial exception). To serve this larger function will require, in the first instance, far greater capacity from among stakeholder groups, as well as a strengthening of remaining procedural loopholes and gaps, so as to ensure that regulators respond fully to stakeholder voices.

CONCLUSIONS AND RECOMMENDATIONS

The study of regulation in India is in its infancy. The findings of this study suggest a need to go beyond legal structures and theoretical presumptions on the role of regulation to understand how regulation is embedded within the Indian political-economic context. In this final section, we offer six concluding observations on electricity regulation in India, accompanied by detailed recommendations.

Institutional and Political Context

While the regulatory literature dwells on how regulatory laws are constructed and shaped by national institutional and political context, the experience documented here suggests that laws are only a part of the story. Even with relatively uniform laws, as exist across state electricity regulators, regulatory processes and outcomes have varied considerably. Giving birth to a regulator in the midst of an ambitious reform programme itself introduces possible tensions; regulatory outcomes are shaped by the pressures and dynamics of reform, as discussed further below. The cases also suggest that regulatory deference to government is partly self-driven, and possibly part of an inherited bureaucratic culture. Overall, regulatory creation, by itself, is only a first step; governments remain central to unlocking the potential of the regulatory institution.

1. *New electricity regulators are constrained in acting as active stewards of electricity reform.*

Electricity reform inherently requires bold decisions to manage politically difficult trade-offs – on tariff rates and rationalisation, enforcement, and curtailing entrenched rent-seeking opportunities. As a political decision, the role of defining and laying out a reform trajectory falls to governments. In conventional thinking, independent regulators are a crucial component of reforms to ensure short-run political costs do not trump long-run gains. In practice, this study suggests there are substantial flaws in this logic.

Once established, new regulators face their own pressures to establish credibility with the public, which often runs counter to short-term impacts of reform measures. At minimum, government needs to provide consistent and supportive commitment to the institution if regulators are to meet its expectations. Moreover, effective regulation, particularly in the information deficit context of Indian electricity, requires constant adjustment in response to new information and new circumstances. However, adapting to new circumstances introduces a tension predictable regulation in conformance with a government-led reform, and regulatory independence and hence legitimacy with the public on the other.

In Delhi, the regulator proved unwilling to approve up-front tariff hikes to support the privatisation effort, as assumed in the government's reform design, in the face of public discontent with short-term results. In Karnataka, the government effectively pursued a parallel reform approach, for example proposing a privatisation structure that tied the regulator's hands, thereby deeply under-cutting the regulator's credibility with the public. In both Delhi and Karnataka, initial regulatory credibility was further undercut through meagre institutional and symbolic support by the respective governments. In Delhi, the regulator took many years to attain full capacity, and in Karnataka the regulator's external credibility was undercut by the government's parallel regulation. In Andhra Pradesh, the reform direction was firmly under the government's control, and the government provided both institutional and symbolic support, but even here the regulator was perceived as conforming to the larger government strategy by keeping tariff hikes low. Due to the tension between supporting government-led reform and establishing independence and credibility, regulators are constrained in acting as stewards of reform. This experience suggests the following recommendations:

- Governments should work actively to establish regulatory credibility before entrusting them with reforms, not least by providing clarity and consistency on their respective role in reform policy;

- Governments should strengthen early institutional capacity and credibility in the appointment of regulators, and actively promote competent staffing and supporting infrastructure;
- Governments should also deliberately signal the importance of regulators to other government departments, notably state-owned utilities, and equally important, refrain from actions that appear to undercut regulatory autonomy.

2. *Uncertainty about selection processes for regulators and weak regulatory capacity hampers effectiveness and undermines legitimacy of regulators.*

Direct political control over the regulatory selection process has been the rule rather than the exception. In some cases, this has led to questions about the independence of the regulator, as in Karnataka, or concerns about failure to appoint a full three member Commission, as in Delhi. In other cases, as in Andhra Pradesh, political influence over selection has not affected the legitimacy of the regulator. Procedural loopholes in regulatory selection procedures leave scope for regulatory legitimacy to be undermined in particular cases, even if it is not always so.

Regulatory staffing patterns have exhibited three axes of variation – under-capacity, reliance on employees from the public electricity sector, and heavy dependence on external consultants. In Delhi, which demonstrates all these three elements, the problem of attracting and retaining staff is a major constraint. Karnataka's regulator is staffed almost entirely by former public utility employees, which arguably brings a restricted perspective, and has led to a deliberate decision to eschew consultants. Andhra Pradesh exhibits none of the three characteristics, and has both managed to attract a broad base of employees, and have used consultants but without developing an undue dependence on them. If the Delhi experience is closest to the norm for other regulators, as anecdotal evidence suggests may be the case, there are strong grounds for explicit attention to lifting constraints on regulatory capacity:

- Governments should strengthen procedures for selection of regulators by requiring that selection decisions be formally justified through a reasoned statement with reference to the qualifications of candidates, and that candidate names, qualifications, and reasoning for final selection be made public through tabling in the legislature.
- Remove constraints to stronger regulatory staff:
  - Governments should lift restrictions on hiring staff on a long-term rather than deputation basis, which currently undercut development of institutional memory;

- Government, in conjunction with donors, regulators, utilities and civil society should develop training programmes and incentives to develop regulatory agencies as a long-term and viable career trajectory;
- Regulators, with support of donors and governments, should structure consultant contracts to ensure transfer of skills and knowledge to build self-sufficiency.

Regulation in Practice

A scrutiny of regulation in practice reinforces a view that regulation is as much art as science. Managing information asymmetries, trade-offs between short- and long-term goals, and implicit (and occasionally explicit) political expectations require the exercise of continuous regulatory judgement. Technical competence is necessary, but it is by no means sufficient. With a thin tradition of regulation in India, judgements rest less on precedent and more on individual idiosyncrasies, often with little justification. The result is widely varying procedures and norms on critical issues such as technical validation, scrutiny of investment, and public hearings. Individual approaches, in turn, are shaped by the cultural content of institutions and networks from which regulators draw their personnel.

These networks operate within a larger regulatory space that continues to be dominated by the government, both as owner and potential beneficiary or loser of votes tied to electricity outcomes. If consideration of the political implications of regulatory decisions, particularly on tariffs, looms large, it is also a subject to be denied in public. The result is a non-transparent and imbalanced negotiation of political pressures rather than a more-open discussion of political trade-offs implicit in regulatory decisions. Regulators today already play a role that goes beyond narrow technical implementation. Doing so with explicit acknowledgement of the basis for judgements may well strengthen credibility more than withdrawing behind a technical façade. An examination of regulation in practice suggests the following three overarching conclusions:

3. *Ambiguity in the operating procedures and the lack of guiding norms around regulatory procedures leave scope for considerable variation in approach and exercise of individual discretion. Where there is a common approach, it is based on the prevailing mindset of public utilities.*

The broad scope of regulatory provisions in the Electricity Act and the lack of specificity or guidance in regulatory procedure and process leave

considerable scope for a range of different regulatory approaches. While not every regulatory action can, or should, be specified, the lack of experience with regulation in India has deprived regulators of norms of good practice which could otherwise serve as a guide. As a result, regulators' approach to their work varies based on the perspectives of key individuals, and on dominant contexts from which regulators and their staff are drawn. While it is important to maintain regulatory discretion with regard to the substance of decisions, greater standardisation of regulatory procedures would be beneficial.

In the basic regulatory task of interacting with utilities to obtain and verify information, utilities range from a complete absence of formal and documented technical validation meetings (Karnataka in later years) to formal and documented meetings that are necessarily open to participation by the public (based on an examination of this process in Maharashtra). Some regulators favour active and regular field visits (Andhra Pradesh), while this has not become the norm in other states. Attitudes toward stakeholder participation and information disclosure range from proactive in Karnataka, who established an Office of Consumer Advocate, to entirely reactive in other states. Thus KERC publishes all its communication with the government in its annual report, while APERC and DERC refuse to release any communication with government. In all states, but for highly conspicuous proposals, investment review largely falls outside the stakeholder engagement process of the tariff order. However, regulators discuss their decisions to varying degrees of detail in tariff orders: KERC lists all proposed schemes and their decisions in every order; APERC does so inconsistently; while Delhi lists categories of projects but not specific schemes.

In the absence of clear review criteria, the regulatory approach is driven by common experiences brought by regulators and their staff. Four of the six Chairpersons across the three regulators studied were drawn from the Indian Administrative Service (Delhi is the exception). While it is hard to pinpoint the effect of this common experience, interviewees point to a common internalisation of government perspectives and political constraints from a lifetime in service. Regulatory staff are often drawn from the public electricity sector, given the lack of any competing pool of staff, and the high cost of employees from the private sector. With regard to the important regulatory issue of investment approval, for instance, staff bring a detail oriented attitude focused on due diligence, rather than a concern with larger questions about appropriateness or alternatives. In the absence of sufficiently detailed guidelines on transparency and participation, the prevailing public utility mindset of discretionary gate-keeping over regulatory records prevails.

To initiate the process of harmonising upwards procedures and norms:

- Regulators should collaborate with each other and external advisers to explicitly devise norms of good practice around procedures in key regulatory functions such as:
  - Technical validation process for annual revenue requirement filings;
  - Scrutiny of investment proposals;
  - Scrutiny of generation projects and approval of power purchase agreements;
  - Interpretation of information disclosure obligations.
- Where possible, regulators should seek to enshrine these norms in detailed procedural regulations and disclose their compliance with these regulations.

4. *Regulators exercise limited use of their powers due to an arms-length approach to scrutiny. While even this limited approach has led to non-trivial benefits, it has led them to avoid grappling with the most intractable problems in the sector.*

The dominance of utility insiders within regulatory staff has provided regulators with considerable knowledge of public utility systems. This background and experience has resulted in a detail-oriented approach to tasks of regulatory scrutiny. For example, both Andhra Pradesh and Karnataka regulators made substantial gains in eroding, if not eliminating, data gaps on farmer consumption of electricity through sample surveys. Regulators have required utilities to revisit and revise their assumptions in all states. Andhra Pradesh has established an ongoing investment monitoring programme. And scrutiny by the Delhi regulator has led to considerable reductions in approved investment levels. Requiring regulators to review and approve power purchase agreements has also introduced a measure of transparency in the process, which has contributed to real gains in particular cases, particularly in Andhra Pradesh.

However, regulators have stopped short of asking larger questions that potentially place them in conflict with entrenched and politically connected interests. Thus, no regulator has succeeded in undertaking a full census of agricultural users, understanding, as one regulator said, that the Commission has to 'realise its limits'. While all regulators have issued detailed, thoughtful, and forceful directives, they have not done a very thorough job of monitoring compliance beyond the first year. In many cases directives have not been complied with, and regulators have not been able to enforce compliance. For example, while the Karnataka Commission threatened to withhold a tariff increase until directives were complied with, it ultimately did not follow through. Anomalies in consumption data in Delhi were allowed to continue over multiple years without active investigation by the Delhi regulator. With

the partial exception of the Delhi regulator, no regulator has been willing to impose a penalty. Regulators cite the meagre penalty allowed in the law as an insufficient deterrent, the risk of undermining relations with the regulated utility, and the futility of fining a government entity that would only ultimately pass on costs to the public.

In the absence of a formal mandate on review approach, regulators carry out capital investment review with an implicit interpretation of their mandate as being limited to cost and implementation feasibility, and not project selection or viability. This judgement is influenced by explicit pressures to desist from 'micro-management', and self-driven concerns of appearing 'anti-development'. This puts a technical façade on review, but allows politically driven investment choices to escape scrutiny of regulators and stakeholders.

Where regulators delve deeper, they may choose to only indirectly confront entrenched interests. In one interesting example, the Andhra Pradesh regulator chose not to disallow a particular scheme about which it had doubts, but to scale it back to a pilot scheme, a decision that may be read as a tactful way of casting doubt on the wisdom of the investment.

Once investment schemes are approved, regulators also take a cautious approach to investigation of project implementation. Thus, the Delhi regulator creditably undertook site inspections, but chose not to publicise its investigations despite reasonable evidence of problematic practice. All these practices suggest a regulatory system that is better at studying details that can be defended on technical grounds, but is unwilling to engage in larger level questions that require judgements that are arguably more significant for the long term future of the sector.

There is a case for regulators to shift from their current hands-off and quasi-judicial style to a more explicitly investigative style. While a balance needs to be struck between regulatory micro-management and regulatory laxity, this evidence suggests that regulators in India may be erring too far on the side of laxity. The case for greater scrutiny is strengthened in the Indian context of not only information asymmetry, but also a considerable information vacuum in some key areas. It may be argued that in a rapidly changing sector with large investment needs it is important for the regulator not to be a hindrance. While this view has some validity, it is equally if not more the case that with little public appetite for tariff increases and a considerable credibility deficit in the sector, regulators must ensure that every rupee of investment be made to count, and that the data exists with which to monitor progress. At the same time, to credibly undertake a proactive approach to regulation requires a regulator with a minimum threshold of both competence and credibility.

- Regulators should develop and adhere to a more proactive approach to regulatory scrutiny in key areas that include methods such as:

- site visits of investment schemes and to back up studies to critical information such as agricultural consumption;
- detailed, transparent, and ongoing data collection backed by visits to utilities, if necessary, to monitor performance;
- regulatory scrutiny that includes not only implementation details but also larger questions of rationale, design, and justification.

- Regulators should collaborate with each other to articulate and justify norms around reasonable scrutiny and intervention so that their actions are more predictable and do not arouse resistance from utilities and other bodies such as the Appellate Tribunal.

5. *Regulators side-step overtly political decisions by erring on the side of safety and defensibility, balancing pressures to accommodate while striving to maintain an apolitical façade.*

Regulators face not only decisions in which politics are embedded – such as those around investment, performance, and generation – but also conspicuously political decisions such as tariff setting and implementation of open access policy. Nonetheless, regulators strive to project their performance on these issues as technical and free of politics, in keeping with the theoretical conception of regulators as implementing, rather than policy-making, bodies. The evidence presented here suggests that this fiction is hard to sustain, and may even be counter-productive.

Tariff setting is perhaps the most closely watched indicator of whether regulation is apolitical. However, in all three states there are clear indications that regulators certainly factor in public sentiment. For example, Karnataka and Andhra Pradesh display a pattern of early tariff hikes followed by flat tariffs. In all three states there are instances of creative regulatory measures that could be interpreted as valiant efforts to limit tariff hikes and are often so interpreted. Thus, Andhra Pradesh has used an efficiency target that, for several years, has kept the tariff flat. Karnataka has similarly used the subsequent year's true-up to avoid increases. Delhi has made use of a regulatory asset as well as other accounting devices. While these examples need not mean that the regulator is following government direction, although there have certainly been perceptions to this effect, notably in Delhi, they do suggest regulators have concluded that they cannot avoid the political implications of their decisions. Indeed, this is a reasonable conclusion; public perception of whether increases in quality and increasing costs warrant a tariff increase are salient to the regulatory process.

As with tariff, regulators' rule-making function is constructed as an apolitical and technical role. However, some rules, notably the open access regulation and related cross-subsidy decision stand to create substantial

winners and losers, and are intensely political decisions. The consultation process, which was followed with different degrees of rigour in the three states, did expose clearly the opposing interests. It did not, however, lead to a reconciling of those interests. Instead, the regulator picked among interests. In Andhra Pradesh, the regulator chose to support a methodology for open access surcharge that would limit the burden on the incumbent utility, explicitly citing the state government's argument that anything else would create an undermine the financial viability of the utility. In Karnataka, a similar decision was reached on the grounds that the information on cost of supply did not exist to follow the alternative approach. Political considerations relating to the financial viability of the utility would appear to be behind these decisions, whether explicitly as in Andhra Pradesh, or implicitly as in Karnataka.

These decisions have been passed on to regulators precisely because governments are unable or unwilling to bear their political costs. However, placing them in the regulatory domain does not erase their political content; technical considerations remain at best part of the story. Given this reality, a more productive outcome may be achieved if regulators explicitly acknowledge the political content of some of their decisions and embraced their de facto role in balancing interests. From this stakeholder view of regulation, the regulator should strive not for insulation, but for equal engagement with all stakeholders. To achieve this, the hearings and consultations process would have to go beyond identifying interests, to begin the process of mapping out a path to reconciling interests. For example, in the open access discussion, regulators could provide a forum for mapping out a trajectory for cross subsidies that minimise damage to utilities while also allowing open access to emerge over time. In the tariff context, the hearings process could provide a basis for constructing a 'social compact' that governs both public expectations of tariff and service quality, and utility targets for performance.

To accomplish this, regulators and government will have to re-imagine their role, shifting from a doggedly apolitical stance, to one that utilises the potential for regulation as an instrument of deliberative governance.

- Regulators should consider using the regulatory platform for debate and discussion on overtly political issues, as a way of gathering more information, building credibility, and reconciling competing interests by:
  - building on and expanding the current use of discussion papers through explicit consideration of different interests;
  - reorienting hearings from an adjudicatory process to a deliberative process aimed at constructing 'social compacts' or negotiated ways out of conflicted problems.

Role of Stakeholders

The discussion on regulatory practice above suggests that regulators are regularly called upon to exercise discretionary judgement in regulatory decisions. Given this reality, future regulatory credibility may rest as much on building credibility with the public through consultation before decisions and reasoning after, as it does on consolidating technical competence. The evidence suggests regulatory bodies are a long way from this ideal: regulators view participation as perfunctory more than useful; procedures are unevenly implemented and reasoning for decisions are weak. For their part, competent stakeholder groups are few and not growing.

However, there are good reasons for seeking to remedy this situation. Only through active engagement with stakeholders can regulators build the relationships of public accountability that will allow them to develop true independence from political control. While strong and supportive governments offer one route to more effective regulation, a regulatory framework buttressed by public engagement and support offers an alternative route, and perhaps one that is more reliable and feasible.

6. *Procedures for stakeholder involvement have introduced a welcome measure of transparency, but loopholes in procedures and their implementation remain, particularly with regard to information disclosure and regulators' responsiveness to stakeholder interventions. Stakeholder participation overall is weak, and the impact of stakeholder participation falls well short of a desirable 'stakeholder model' of regulation.*

Electricity regulation in India has only taken small steps toward a 'stakeholder model' of regulation, in which independence is ensured not through isolation, but through being subject equally to the voice and representation of all stakeholders. From this perspective, regulatory legitimacy and effectiveness rests in a fair decision-making process, accessible to and used by all stakeholders, all of who have adequate capacity to participate in regulatory decisions. Under these conditions, stakeholder support could potentially support regulatory legitimacy, and provide a bulwark against undue government interference. At the moment, however, the stakeholder process falls well short of this ideal.

Regulatory procedures for transparency and participation are reasonably sound, but implementation of them is cursory and ineffective. For example, none of the three regulators studied had an indexed database of documents readily available. Procedures and practice of transparency in some areas, notably around investment schemes, remains murky, and investment scrutiny

in all states falls outside the regular tariff process, and hence outside the consultative process. Hearings are regularly held in all three states, and well attended, but the hearings are structured in a quasi-judicial manner rather than as a back and forth that allows scope for developing new shared understandings. Moreover, the one way communication leaves stakeholders no opportunity to query further should they feel their objections are inadequately addressed. The standard of reasoning in response to stakeholder involvement is uneven, and the credibility of the process suffers enormously when stakeholders feel their voices are not acknowledged or responded to, as in one case where a order was produced a mere 24 hours after a hearing.

Even if procedures and practices within regulators could be improved, the full value of stakeholder engagement requires considerably enhanced capacity to participate in regulatory debates and decisions. Current capacity is extremely thin, and limited to a few groups or individuals in each state representing the full range of consumer interests. Even industry and commerce groups, which have the capacity to bring considerable greater resources to the process, have so far devoted little to informed participation. For their part, regulators have not proactively sought to enhance stakeholder capacity to engage in regulatory consultation, with the partial exception of Karnataka, who have set up an consumer advocate office. More complete measures in this direction would require proactive outreach, training, identification of unrepresented groups, provision of financial support and perhaps a dedicated institution to represent consumer views.

Currently, stakeholders view transparency gains from regulation as an unambiguous positive, but do not, as yet, view regulation as a viable arena within which to ensure their interests are taken into account. This is driven largely by a perception that regulators hear stakeholders, but are opportunistically responsive to them. As a result, stakeholders continue to hedge their bets by keeping open the option of direct political action. Hence, the regulatory objective of depoliticising decision-making in the sector stands unfulfilled. As suggested above, the solution to this conundrum may ironically be more rather than less politics in regulation, but only if conducted on a level political playing field, with effective procedures of transparency, participation, adequate reasoning and proactive capacity building. Under these circumstances, stakeholder engagement could itself be a source of regulatory legitimacy by serving as a bulwark against undue influence by government or any single other stakeholder. Shifting toward a stakeholder model of regulation requires that regulators:

- Provide greater attention to governance considerations in the start up period, to ensure that there are no procedural loopholes and that regulators and their staff understand and appreciate the reasons for stakeholder engagement;

- Strengthen implementation of procedures and plug existing procedural loopholes in the stakeholder process relating to:
  - Measures for easy access to available documents such as a well indexed database;
  - The terms and conditions for exclusion of documents from transparency provisions;
  - Regular production of annual reports with a specified minimum information content;
  - Terms and conditions of transparency for investment schemes;
  - Conditions under which hearings are required;
  - Format and conduct of hearings to allow for greater two way engagement.
- Develop and follow norms around an appropriate standard of reasoning in response to stakeholder comments and input;
- Support quality and quantity of stakeholder engagement with particular attention to ensuring a balance of perspectives by:
  - Proactive efforts at disseminating information;
  - Developing training programmes on regulatory engagement in association with research organisations and NGOs, particularly targeted at unrepresented groups and vulnerable populations;
  - Provide a mechanism to financially support responsible and credible stakeholder engagement;
  - Consider an institutionalised mechanism to regularly voice consumer interests, such as an Office of Consumer Advocate.

Notes

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10. T C A Anant and Jaivir Singh, Structuring Regulation: Constitutional and Legal Frame in India', *Economic and Political Weekly* 41(2), pp. 121-7.
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