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The Practice and Politics of Regulation

Regulatory Governance in Indian Electricity

Navroz K Dubash • D Narasimha Rao

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NAVROZ K DUBASH
D NARASIMHA RAO

Executive Summary

Independent regulators 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. This report aims to provide a systematic empirical examination of 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. Electricity has been selected both because of the critical role mandated for the regulator in reforming this sector, and because electricity offers opportunities for a comparative analysis across states over a relatively long duration. We examine electricity regulatory agencies in three Indian states – Andhra Pradesh, Karnataka and Delhi. The three cases were chosen to reflect specific and interesting contexts, while still sharing commonalities in their reform context. They all shared similar conditions of power sector mismanagement, and were established with similar policy objectives through state reforms that envisioned or enacted privatisation: Andhra Pradesh provides an example of best practice, by reputation; Karnataka has a sound reputation but also one of furthering consumer interests; and Delhi offers an actual case of private sector regulation.

This work is distinguished by an attempt to go beyond the legal framework of regulation to understand regulation in practice, and its politics. To do so, the study focuses on the processes through which regulatory decisions are made in the context of several key substantive areas of regulatory intervention. By examining how formal procedures and informal practice combine to shape regulatory decisions we develop heights into both the present and future of regulation.

Based on a review of international and Indian literature on regulation and electricity reform, the study is organised around three research themes and related research questions:

1. *Institutional and Political Context:* How are formal regulatory structures and capacities, and informal regulatory constraints shaped by the immediate political and reform context within which regulators are formed?
2. *Regulation in Practice:* 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?
3. *The Role of Stakeholders:* 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?

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, we rely heavily on interviews with key actors in the regulatory process including regulators, regulatory staff, government officials, officials from regulated entities, consultants and stakeholders from industry, consumers, agriculture and NGOs.

Each state case study examines the following dimensions of the regulatory process in that state, which are discussed in detail in the state chapters, and summarised in the overview chapter:

- 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.

Based on a comparative analysis of the three state case studies, the study suggests the following findings and recommendations.

FINDINGS AND RECOMMENDATIONS

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.

As agents of reform, regulators have had to take bold decisions that take on entrenched interests in the sector. 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. Furthermore, government support and commitment to reform influenced their credibility significantly, with positive findings in Andhra Pradesh, an undermining of the regulator in Karnataka, and a struggle for legitimacy in Delhi.

- 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. 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.

- 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;
- 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.

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.

- 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.

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 'realize its limits'. On performance and management, 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 enforced compliance. 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. Once investment schemes are approved, regulators also take a cautious approach to investigation of project implementation. 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. 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. While these examples need not mean that the regulator is following government direction, 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. 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.

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 minimum specified 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.

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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CHAPTER 1

Andhra Pradesh

The Limits of Effective Regulation

Introduction

Andhra Pradesh has, over the last decade, acquired a reputation as a leader in the area of economic reform. This reputation has also spilt over to the electricity sector. Andhra Pradesh has demonstrated performance improvements well above the average Indian state (Table 1). In public discussion, much credit for this is laid at the door of the Andhra Pradesh Electricity Regulatory Commission (APERC), which is seen as an example of a well-functioning regulator. For example, ICRA has rated the APERC highest of all state electricity regulatory commissions in India. Moreover, APERC has moved into a leading role with regard to implementation of the Electricity Act 2003. Its orders and output are scrutinised by other regulators for insight into various regulatory processes. For all these reasons, the APERC is a critical institution from the perspective of this report.

The APERC has a reputation of a leader among Indian electricity regulators, having pioneered the segregation of retail supply and distribution, implementation of the multi-year tariff, and a number of other regulations. In this report we examine in detail how the APERC functioned in practice, with particular attention to its decision-making process.

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This chapter draws on information obtained through interviews and documentary evidence. All interviews were conducted on a not-for-attribution basis. Consequently, while specific points obtained in interviews are referenced in a note, interviewees are only identified by their broad institutional affiliation.

Table 1: Performance Statistics for Andhra Pradesh Power Sector

Particulars	*1999-2000*	*2000-1*	*2001-2*	*2002-3*	*2003-4*	2004-5 *(T.O.)*	2005-6 *(R.E.)*
T&D Losses (%)	37.1	34.8	30.2	26.5	23.3	23.7	23.1
Cost Recovery (%)	61	67	69	83	85	88	
Tariff Increase (%)		14.5	0.76	0.71	–0.71	–1.5	
Government Subsidy (Cr)	3,064	2,936	2,457	1,876	1,513	1,303	1,303
Tariff Order Issued		May 2000	March 2001	March 2002	March 2003	March 2004	March 2005

Source: Data adapted from AP Transco 'Lessons from Andhra Pradesh Power Sector Reform' March 2005, unpublished paper.

Following this introduction, we examine the reform context, and then the institutional structure and development of APERC. Next follow sections on the tariff review process, agricultural consumption estimation, a discussion of performance, of investment scrutiny and of tariff setting. The following two sections examine generation planning and the APERC in its rule-making role. The last substantive section addresses stakeholder engagement in practice. We end with brief conclusions.

Reform Context

The Andhra Pradesh Electricity Regulatory Commission (APERC) was established as part of a far larger power sector reform effort, which in turn was part of a state-wide financial restructuring programme. Embedding of the APERC within larger structural changes played an important role in shaping its early years. In this section we discuss alternative early visions of reform with different implications for the regulator, the impact of the reform eventually agreed upon for APERC, and the concrete implications for the start up period of the regulator.

Different Reforms, Different Regulator

Reform of the power sector in AP had been on the anvil for a number of years, dating back at least to the high level Hiten Bhaya Committee (1995) composed largely of former AP State Electricity Board (APSEB) Chairpersons. The recommendations of this committee were to fix the tariff structure to cover costs, unbundle APSEB and maintain it as a holding company for the new entities, commercialise the successor entities, gradually and cautiously move toward privatisation, and establish a regulatory commission limited to fixing distribution tariffs.[1] In its general thrust, these recommendations were very similar to the eventual reform plan.

Soon thereafter, and before these recommendations could be implemented, the government changed hands. The new Chief Minister, Chandrababu Naidu, initiated a dialogue with the World Bank for a set of far reaching reforms, of which power sector reform was only one component, albeit the largest. As part of these deliberations, the power sector reform agenda was sent back to the drawing board, with external consultants charged with drawing up a comprehensive plan. As part of its larger commentary on economic reforms, the World Bank noted that while the Bhaya Committee report pointed in the right direction, they did not go far enough nor were bold enough. Instead, they called for reforms that are '. . . bold, making a sharp break with the past'.[2]

Most important for this study, the World Bank view summarised in a January 1997 document suggested a vastly enhanced role for the regulator, including not only distribution tariff setting but also bulk supply tariff, licensing, connection charges and related monitoring and enforcement.[3] In addition, the Bank negated the idea of retaining the APSEB as a holding company, suggested moving away from a single buyer toward a competitive model, and required broad new legislation.[4]

The merits of the two approaches continue to be debated, as also the underlying case for major reform.[5] At the time, however, the Naidu government acted rapidly to implement the World Bank recommendations by releasing a policy statement in mid 1997, and passing the Andhra Pradesh Electricity Reforms Act in April 1998.[6]

Regulation to Support Privatisation-Oriented Electricity Reform

The embedding of the regulator within a larger agenda had two significant substantive implications and one procedural implication for the APERC. First, and perhaps most important, was an implicit presumption that the regulator would use its tariff setting authority in a manner consistent with the financial restructuring plan worked out between the World Bank and the Government of AP. In its loan document, the World Bank condition requires the companies to make tariff submissions 'to an extent not less than indicated in the financial restructuring plan and satisfactory to the Bank' followed by a requirement that the 'Regulatory Commission has issued the tariff orders'.[7] At the same time, the larger purpose in establishing a regulator was to 'reduce the interference of the state government, minimise the politicisation of key sector decisions . . . bring transparency . . . and balance the interests of various stakeholders'.[8] Thus conditions agreed to by the state government required, at least implicitly, certain regulatory actions, even as the raison d'etre of the institution was insulation from the government.

Second, the World Bank loan requires growing private sector involvement as part of a larger objective of a move toward a competitive electricity market. This macro policy direction set the policy framework within which the regulator was intended to operate. Specifically, it required the regulator to support a larger government policy of moving towards the medium term end of privatising the unbundled utilities. It also placed on the regulator the task of developing institutions and procedures for a competitive electricity market.

Third, working within the larger World Bank supported reform effort also gave the APERC a more structured start than most state regulatory commissions. As part of the larger donor assistance package, the UK's Department for International Development (DFID) funded a five-year contract for technical assistance to the APERC, as well as to the unbundled utilities. As a result, the APERC had extensive, and continued access to consultants who, as discussed in greater detail below, played an important part in the regulatory process and in the development of the APERC.

Institutional Structure and Development

Initial Orientation and Culture Established on Start-up

Consultants supported by the UK Department for International Development (DFID) helped APERC to set up their initial systems, and in so doing, instilled in APERC a commitment to a regulatory approach that continues to this day. The US economic consultant National Economic Research Associates (NERA), recommended by the World Bank to the Government of Andhra Pradesh (GoAP), assisted APERC in a training programme over several months, which was followed by appointment of Price Waterhouse Coopers (PWC) to work on-site at APERC for five years in a relationship of ongoing support. APERC had a role in assessing the bids for the second consultant, and in requesting particular personnel.[9] These consulting relationships set in place technical procedures but also laid down a larger regulatory approach.

The initial consultants set up APERC's cost-to-serve (COS) model, trained APERC staff on the methodology of tariff determination based on COS and helped draft the first tariff order.[10] In addition to COS, they introduced the concept of multi-year tariff (MYT), and oriented the APERC's analysis toward the long-term goal of its implementation, such as by separating the 'wires' and 'service' component of the tariff right from inception, even though MYT was implemented only in FY 2007. These concepts – COS and MYT – have remained critical features of APERC's operations to date, an importance that stems from their early introduction by consultants.[11]

APERC's initial training appears to have focused heavily on imparting techno-economic skills, such as on the COS approach, and minimally on the nature of regulation as an institution of governance, either as a result of limited terms of reference or due to the expertise base of the consultants. Thus questions of the role of procedures, consultation, accountability, communication with stakeholders, building public credibility and the like do not appear to have been addressed by the consultants in their initial training.[12] Moreover, the initial set of operating regulations, such as conduct of business regulations, were also drafted by the consultants, further reducing the direct engagement and familiarity of APERC staff with governance practices relating to regulation.

However, some of these issues do appear to have been discussed in the course of training conducted as part of a 'twinning' programme between US and Indian regulators. As part of this programme, APERC staff visiting the Pennsylvania Public Utilities Commission, and had an opportunity to interact with their staff and attend hearings. For example, the APERC adopted the idea of having a dedicated and separate 'staff analysis' section in the tariff order to represent a consumer perspective from US practice.[13]

In sum, the APERC got off to a rapid start, particularly with regard to techno-economic capacity and systems, due to considerable support from external consultants. This support considerably strengthened APERC's ability to work as an effective regulator from the start. At the same time, critical regulatory trajectories – such as a COS approach and a determination to move toward MYT – were influenced by consultants. Although these approaches were discussed within APERC, given the lack of internal experience and expertise with regulation, this process arguably proceeded without sufficient and full consideration of alternatives. In addition, the limited attention to governance procedures is a failing of the start-up phase. The latter is particularly a problem and could, arguably, be one reason why the APERC has, as discussed later, a muddled policy when it comes to governance issues such as transparency.

Selection of Commissioners

The most significant feature of the process of selecting Commissioners for the APERC is how little discussion this issue elicits. This is in striking contrast to other states, where selection issues are often the source of much discussion and questions about regulatory credibility.

The first Chairperson, Mr G P Rao, was hand-picked by the then-Chief Minister, Mr Naidu, as an individual with a reputation for probity and effective management skills.[14] An IAS officer, he had engineered an impressive financial turnaround of a public sector company, Singareni Collieries, which brought him to the attention of the Chief Minister. This appointment, by

all accounts, was very successful, as Mr Rao went on to attain a reputation of being an effective and strong regulator. While the ends appear to have been met, it is worth noting that the legal safeguards for regulatory selection – a three person selection committee – do not appear to have been followed in spirit but merely in letter in this particular case.

The second and current Chairperson, Mr Swaminathan, brings a background as former chief secretary of the state. Also an IAS officer, Mr Swaminathan's appointment follows a growing trend of appointing senior bureaucrats, on their retirement, as chairpersons of regulatory commissions.

While both are regarded as effective, public perceptions hold Mr Swaminathan to be more given to a consensus building regulatory style than Mr Rao, while Mr Rao was seen as more willing to force issues and push debates.[15] Despite these positives, there is still a sentiment that, even in AP, the regulatory selection process should not be in the hands of the state government, suggesting that the required separation between regulator and government has been hard to sustain.

Staff Selection

Unlike other regulators, staff capacity has not been an overwhelming problem for APERC. In its early years, APERC built its staff with a proactive, rigorous hiring process for senior positions. For example, outside industry experts were brought in to interview candidates for senior positions.[16] Unlike other ERCs, APERC was able to attract staff from outside the utilities for these positions, including PowerGrid (Director Engineering) and Industrial Development Bank of India (IDBI) (Director Tariffs).[17] In addition, APERC took advantage of past networks to hire staff on deputation from the utilities.[18]

As Table 2 suggests, APERC has historically been at about 2/3 of its full strength of 28 officers, but appears not to have taken steps to increase toward full strength as indicated by low vacancy rates. Notably, about 40–50 per cent of officers have a background with AP utilities. A relatively small number – 2 out of 18 – are on deputation from AP utilities, although in the past this number has been as high as 1/3 of officers on deputation. Finally, APERC claims to have spent none of its own budget on consultancies given the substantial support provided by DFID.[19]

With regard to quality, consultants also spoke favourably of the staff members' competence.[20] For their part, staff stated they learned from consultants and were able to take on tasks that were originally undertaken by consultants.[21]

Overall, staff development at APERC is a positive story, both in terms of their capabilities and in their ability to learn from consultants. While there was considerable, and perhaps inevitable reliance on staff with a

Table 2: Staff Profile of APERC

Category	*March 2000*	*March 2001*	*March 2002*	*March 2003*	*March 2004*	*March 2005*
Sanctioned Staff (Officers)	81 (28)	81 (28)	81 (28)	81 (28)	81 (28)	81 (28)
Total Staff	33	36	35	59	59	54
Officers	16	18	18	17	20	18
Officers with Background from AP Utilities	9	10	8	6	7	7
Officers with Background from any other Public Electricity Utility	2	2	3	3	3	1
Officers on Deputation from AP Utilities	5	6	5	3	2	2
Number of Positions Previously Filled Left Vacant for 6 Months or More	0	0	0	0	0	1
Budget (Rs Lakh)	205	227	311	328	309	335

Source: Information in this table was provided by APERC.

background from the regulated utilities, this was counterbalanced by a proactive, and successful, effort to recruit from outside the state and the sector.

The Tariff Review Process

The Process Itself

The tariff review, or annual revenue requirement (ARR) process is best understood through description and analysis of specific functions, but there are some common aspects of the process that help reveal the internal dynamics at APERC. Below, we briefly discuss patterns of interaction between regulators, staff, and consultants in the ARR process.

The regulators see their role as being 'like judges' within the APERC, deliberating upon and deciding between views presented to them by consultants and staff.[22] Another metaphor used was that of the relationship between a minister and a civil servant, with the role of the civil servant being to provide analysis and implications of alternative courses of action. Within the three-person commission, the first chairperson strove to introduce a deliberative format, where any disagreements were deliberated upon and resolved between the commissioners on a regular basis.[23]

While the process was designed to provide input to the commissioners for their final decision, there was also an interesting separate provision for an independent staff view, which was meant to present a 'public analysis'. Thus, tariff orders include separate sections for staff analysis and commission

analysis, along the lines of many American regulators, and unlike most other electricity regulators in India. Hence staff plays a dual role – providing a 'public' analysis, and assisting the regulators to come up with their own views. On occasion these may be different, as discussed further below.

Consultants have also always played an important, if changing, role in the ARR process. In the early days of the APERC, consultants 'did everything' starting with developing and applying the basic cost of service model, and drafting orders.[24] However, unlike in other states, the role of consultants in applying models and writing orders has diminished over time. APERC's own staff has increasingly taken on primary responsibility for production of tariff orders, with active involvement and direction from the commissioners, while consultants have been redeployed to 'second-generation' issues such as multi-year tariff and market arrangements. Consequently, they continue to produce first drafts of all policy documents even as they have handed over details of the ARR process.[25] This transition suggests that APERC has a level of staff capacity that has allowed them to take on basic regulatory tasks, which, as the other cases make clear, is not true of many electricity regulators in India.

In most cases staff and consultants work closely together as a single team. A close and productive relationship appears to have been built between the two, perhaps facilitated by the employment of the same consulting firm, Price Waterhouse Coopers, as the regulatory consultant almost since the start of APERC, and by locating them within the APERC office.

On occasion, however, there is evidence of a distinctly three-way interaction between commissioners, staff, and consultants. As mentioned above, staff writes a separate public analysis section in each tariff order, which can differ from the Commission's analysis. For example, in an early tariff order (2000), the staff argued for close adherence to the 6th schedule of the 1948 Electricity Act as the basis for decisions about various financial details pertaining to the ARR. The Commission analysis, however, differed with this view and modifies the 6th schedule provisions on working capital.[26] This difference in turn, reflects a debate within the Commission. In response to utility requests, staff had argued for a more rigid approach to the question of working capital. Based on their own separate and informal discussions with consultants working with the licensees, the APERC consultants disagreed. Having failed to persuade staff, they attempted, and succeeded, in persuading the regulator to take cognisance of the need to flexibly access working capital. The final tariff order duly reflects this concern and makes appropriate provisions.[27] This example suggests that while for the most part consultants work as part of the staff team, they also have separate lines of communication directly to regulators. Moreover, due to their own contacts with a broader network of consultants, they can bring additional information to bear to the regulatory process.

Finally, there appear to be some divisions in perspective across all parts of the Commission between an engineering/technical and a financial/economic perspective. These came out most strongly in the case of power purchase agreements (PPAs), which were initially understood to be driven by technical considerations, and only secondarily as financial issues. In part, the division reflects the shift from a vertically integrated sector, in which engineering concerns predominate, and which is that perspective most familiar to the bulk of APERC staff, and the shift to an unbundled market-oriented sector, in which the relatively uncharted terrain of economics and finance predominates.

On balance, APERC's internal process reflects considerable staff capacity, a healthy and open discursive style of internal decision-making, and a productive interaction between consultants and staff, marked by a transition in responsibilities. At the same time, there is scope for confusion caused by the tripartite division between consultants, staff and commissioners, and the internal division between technical and financial perspectives on the sector and the regulatory role.

Interaction with Utilities

The ARR process calls for significant interaction with utilities, in concentrated periods during technical validation sessions during the tariff determination, and on an ongoing basis to monitor directives and investment schemes. Between formal directive issuances and correspondence, a lot depends on this interaction to foster cooperation from utilities and reduce the information asymmetry between utilities and the Commission.

Two observations are pertinent to the interaction between the Commission and utilities. First, the Commission diligently pursued data validation, maintained good relationships with the Discom management, and even proactively initiated dialogue outside the technical validation process on specific matters of import to reform. For example, the Commission met on several occasions with certain Discoms on implementing measures to attract HT customers.[28] Utility management spoke favourably of the Commission's involvement in performance measures, although they take greater credit for changes than would the Commission.

The second observation, as revealed in the subsequent discussions on performance review, is that this interaction was strongest on issues where utilities had the incentive to cooperate, namely in matters that impacted their bottom line, such as HT tariff revision. In matters that did not, such as with agricultural consumption estimation or metering, they proved significantly less cooperative, and the nature of interaction was more adjudicatory than interactive. Thus, the Commission's style helped reduce the information gap, but only to the extent that utility cooperated.

Agricultural Consumption Estimation

As in other states, the APERC had to face the significant handicap of enormous data gaps. Of these, none was more significant than the confusion over the actual consumption of electricity for agriculture. For example, in 2000-1, AP Transco projected agricultural use of 10,500 MU while independent civil society groups projected use of 4,753 MU against a total consumption of about 28,000 MU.[29] While APERC staff strongly contend that civil society groups have an inadequate basis for their projections, that such a considerable gap exists in competing estimates points to a significant problem. Since agricultural use is almost entirely unmetered due to the legacy of past populist actions, a higher estimate of agricultural use translates to lower estimates of losses, including theft, which in turn is a critical performance benchmark against which APERC measures utility performance. Also, since agricultural use is considerably subsidised, the estimate of use strongly affects the total subsidy payment by the Government of AP to the utility, and hence to the utility's finances. Given the importance of the issue to both technical and financial performance, understanding APERC's approach to agricultural consumption is an important component of understanding the Commission's agency in influencing reform in utilities.

Sustained Stakeholder Pressure

Since its inception, the APERC has been under strong and consistent pressure by civil society groups and stakeholders of all sorts to better monitor and plug holes in agricultural consumption data. In the first order of 2000, a consumer intervention was reported as 'hotly disputing' the agricultural consumption numbers and arguing that these numbers were inflated to keep subsidies high and losses low.[30] These interventions have gone beyond exhortations to include independent studies and evaluations. For example, in 2001, the Peoples' Monitoring Group on Electricity Reform conducted a study which suggested agricultural consumption was less than half that was projected by AP Transco. AP Transco vigorously contested this study, arguing that it was based on a small number of days of the year. APERC staff agreed with this observation, while also noting that AP Transco's own numbers were based on assumption that could also be subject to question. In its comments, the Commission stated that the work by the Peoples' Monitoring Group had 'engaged its attention', and reiterated the need to move beyond guesstimates. Notably, in this early phase of its work, while it had suggested the urgent and practical measure of metering transformers, the APERC argued firmly that in the long run 'there is no alternative to metering of agricultural services'.[31]

The pressure on agricultural consumption figures features prominently in each tariff order, with various consumer groups questioning the AP Transco's estimates, seeking release of census data, questioning the veracity of the sample survey, and keeping the pressure on for more accurate assessment of losses.[32] While this pressure has failed to contribute toward full metering, the originally stated long-term objective of the APERC, it has accomplished two more moderate, but also significant purposes.

First, the APERC has required that all consumption data be made available publicly at the mandal level.[33] In the first order under the second Chairperson in 2005 the APERC ordered proactive efforts to disseminate information on the basis for agricultural consumption estimates.[34] Thus, the interaction between stakeholder groups and a responsive Commission has introduced a degree of transparency on the estimation process.

Second, consumer groups have pointed out that the failure to credibly solve the agricultural consumption data problem calls into question the viability of a multi-year tariff (MYT) approach linked to loss reductions.[35] By pointing out the logical implications of the failure to transcend the political obstacles to full metering and hence to better agricultural consumption data, this external scrutiny may limit or slow the extent to which the problem is compounded through further sectoral developments. As the Commission notes, given continued data constraints, it has sought to introduce other measures, notably an efficiency gain target, to start bringing down losses, rather than waiting until all complex data issues are resolved.[36]

A Proactive Effort to Improve Data but with Limited Results

The APERC took ambitious steps to address the agricultural consumption problem in its very first order. In 2000, it directed a census of all agricultural pumpsets in order to get a realistic and databased understanding of agricultural consumption. However, this census was not completed even by 2002, and in its analysis, the staff noted inconsistency in reporting and failure to capture variations in use across the year, both of which limited the utility of the census.[37] As noted above, the APERC recognised in its 2001 order that both the census and the survey approach, while necessary and useful, were second best to the desired outcome of full agricultural metering.

As a result, in 2002, the APERC partially changed tack, and shifted to a survey-based approach. Specifically, they ordered a 20 per cent sample of metre reading on the low voltage side of distribution transformers.[38] This effort confronted tremendous implementation challenges, such as relocation of transformers, non-matching of transformer codes, and fictitious metre readings.[39] Consequently, the APERC took two further steps in 2003 to refine the approach. First, it continued an extensive dialogue with

AP Transco to resolve these problems and agreed with them on a survey methodology. Second, it sought independent statistical advice from the Indian Statistical Institute (ISI) on the methodology adopted for the survey. At the same time, the Commission reiterated that a completely correct assessment would require full agricultural metering.[40]

While all these data gathering efforts were underway, the Commission still had to base its orders on some estimate of agricultural consumption. Despite protests from consumers, it took the approach of using the AP Transco's submitted numbers, and adjusting them marginally downward. For example, in 2002, the Commission used the base year figures and adjusted upward to reflect new connections, with the final numbering being less than the AP Transco submission.[41] In 2003, the APERC used an estimate based on ISI's feedback on upper and lower consumption bounds using the sample survey, which again came to less than the utility's request. In both cases, however, the final number was also considerably greater than estimates by consumer groups. Finally, the APERC also issued a directive in 2000 that the utility had to specifically seek its permission to buy power for agriculture in excess of the sanctioned amount. Given the murkiness of the situation, this combination of seeking new information, drawing on independent advice, using safe and defensible estimates in the short term, and giving notice to the utility that it did not have a free hand in purchasing power for agriculture reflected a proactive initial approach to resolving the agriculture conundrum.

Despite this sensible approach in the early years, however, the APERC's efforts have not resulted in the data problem being fully solved. While the APERC has repeatedly stated the importance of full agricultural metering, the political problem of getting farmers to agree to meter their pumpsets has proved to be overwhelming. Over time, the directive for full metering, which was issued in 2001 with a deadline of March 2003, has been progressively pushed back. In 2004, the deadline was reset to 2007; in 2006, it was adjusted to 2008.[42] By 2005, the APERC had changed its public stance to suggest that sampling was the best available basis for estimating agricultural consumption, downplaying the need for a full census and metering. While APERC suspicion of manipulation by AP Transco continues, the APERC leadership appears to have concluded that it has little choice but to accept reliance on utility estimates, the checks of an imperfect census survey and, ultimately compromise numbers. This is less a criticism of the APERC in the face of overwhelming political obstacles, and more a salutary lesson in the limits of independent regulation to overcome entrenched politics.

Senior officials at APERC note that given the shift to a commercial impulse, distribution companies have no incentive to implement metering, which comes with high installation and maintenance costs, contributes nothing to revenue since farmers are loss-making customers, and puts strain

on utility staff at a time of broad labour downsizing.[43] In other words, the APERC has been powerless to either force or incentivise the utility to take measures that are so directly against its commercial interest, even if they are in the public interest. In the words of former Chairperson G P Rao, the directive to meter agricultural pumpsets was entirely flouted and the 'Commission has to realise its limits.'[44]

Agriculture: What Lessons about the APERC?

The agricultural issue shows how stakeholder pressure can help keep regulatory feet to the fire by forcing continued attention to an issue. In this case, stakeholder comments included not only persistent comments, but also independent analysis and an articulation of larger concerns, as with the difficulty of implementing a multi-year tariff framework without agricultural metering. The APERC's own track record on agriculture demonstrates substantial initiative, including proactively commissioning independent studies, seeking expert external advice, and finding new approaches when initial efforts were not rewarded. At the same time, regulatory effort could not enable the APERC to swim against the political tide and bring about full metering, even in the context of considerable support from the political leadership.

Performance Review

Performance, simply put, translates to operating costs of the utilities. In a cost-plus regime, regulators have to judge and alter utilities' cost projections in their ERC filings, but also to proactively induce them to improve performance.

In AP in particular, the utilities have a reputation of high performance. In this complex environment, we investigate the approach APERC chose to discipline utilities. Of interest is how they contributed to utilities' achievements, and the other factors that influenced their efficacy as performance drivers.[45]

In this section we first summarise the basis for reputation for strong performance that AP has earned. We then examine the roles of the Government of AP, the utilities themselves, and the APERC in bringing about this perceived performance. What emerges clearly is that all three parties were pushing in the same direction, towards improved performance, introducing complementarities between the actions of each. This is unfortunately an unusual circumstance among Indian states. Allocating credit for success to each actor is not straightforward, but the AP case certainly suggests that both the strong governmental support and a proactive utility were at least as important, and perhaps even more so, than the regulator.

Summary of Performance

The Andhra Pradesh electricity sector has achieved the reputation as a success story in terms of turning around financial and technical performance. Table 3 summarises the basis for this reputation. In brief, loss levels went down 15 per cent over 5 years, [46] while the gap between cost recovery and cost per unit narrowed edging the utility from a dismal starting point of 61 per cent cost recovery in 1999-2000 to the far more respectable figure of 88 per cent in 2004-5.

Table 3: Performance Statistics for Andhra Pradesh Power Sector

Particulars	*1999-2000*	*2000-1*	*2001-2*	*2002-3*	*2003-4*	*2004-5 (T.O.)*	*2004-5 (R.E.)*
T&D Losses (%)	37.1	34.8	30.2	26.5	23.3	23.7	23.1
Cost Recovery (%)	61	67	69	83	85	88	
Tariff Increase (%)		14.5	0.76	0.71	–0.71	–1.5	
Metered Sales (% of input)	37.9	38.7	40.9	44.5	48.3	52	49.3
Revenue Gap before Subsidy (Cr)	3,065	2,936	2,823	1,634	1,589	1,303	1,639
Government Subsidy (Cr)	3,064	2,936	2,457	1,876	1,513	1,303	1,303
Subsidy as % of Revenue (%)		20.7	20.1	19.0	16.0	14.0	
HT 1 Revenue as % of Total Revenue (%)		27.8	27.2	32.9	35.0	33.2	
Cross Subsidy as (%) of total Revenue (%)		27.7	24.9	24.8	22.2	18.7	

Source: Data adapted from AP Transco 'Lessons from Andhra Pradesh Power Sector Reform' March 2005, unpublished paper and from APERC Tariff Orders.

It is also noteworthy that the government subsidy has fallen in absolute terms, and as a percentage of total revenue. A large part of these gains may be attributed to the success in retaining and increasing revenues from HT consumers. Revenue from this category increased as a percentage of total revenue by about 6 per cent over five years. Examining these performance figures in detail and attributing significance to particular measures is beyond the scope of this report. For our purpose, it is sufficient to note that performance has, by most measures been positive, with the success in lowering losses and increasing HT revenues being particularly noteworthy.

Role of Government

Throughout the AP reform process, the government signalled political commitment at the highest levels. This signalling often took the form of personal intervention and attention by the then Chief Minister, Chandrababu Naidu. For instance, he hand-picked leaders of both APERC

and AP Transco, both of whom were universally complimented for their probity and competence among interviewees. He personally conducted monthly review meetings with the Discoms and Transco on a set of twelve performance parameters to keep pressure on the management and to signal government commitment.[47]

Mr Naidu also provided direct support to the APERC. He used APERC's directives in review meetings to assess utility progress. This enhanced the credibility of the APERC and its directives, and signalled to utilities the cohesive nature of reforms. As the first Chairperson of APERC emphasised, 'unless government is serious about the importance of a commercial direction, no one will perform'.[48] He also cited government support as the main takeaway message from AP's success.

As important as what the government did is what they did not do – for the most part they did not undercut efforts to reform the sector by sending contradictory signals. For example, the government provided its subsidy on a timely basis at more or less the promised level each year. According to the regulator, there was also limited direct interference with the regulatory process. The few reported instances are, arguably, examples of political realities around tariff setting, and efforts, at times to influence regulatory approval of power purchase agreements, both discussed later. Nonetheless, compared to other states, the overall picture that emerges is a government that abides by the policy direction it has set its utilities and regulator.

In sum, the government emerges as a necessary enabler of performance-oriented reforms. By both signalling intent and support, and by refraining from working at cross-purposes, the government's role was a necessary one. From this perspective, reform has to be driven by the government, and cannot be achieved by the regulator or the utility alone without clear and unambiguous government support. As the chief minister states 'government has to go for reform, not the regulator. If you introduce reforms the regulator's work will be easy.'[49]

Role of Utility Leadership

Among SEBs, the AP utilities stand out as a curious exception. By most accounts, these organisations overcame entrenched resistance to change and implemented management reforms. In the public eye, among varying opinions on the extent and cause of this change, all give some credit to the leadership skills of upper management in some Discoms and in particular at the unbundled AP Transco, who really oversaw the implementation of reforms in all the distribution utilities. The measures introduced at AP Transco and the Discoms fall under three broad categories.

First, they introduced incentive-based operational reforms. Divisional engineers were given targets for revenue realisation (separate for billing and collection) based on average realisation and energy input into their jurisdiction. Significantly, this also included a deal with unions to seek their commitment to improving revenue realisation in exchange for a favourable wage revision. AP Transco held monthly meetings with unions and engineers' associations to review progress. Performance gradings for employees were introduced at all levels.[50] Apparently this strategy worked, according to union representatives, as also reflected in performance, and the absence of a strike in four years.[51]

Second, in coordination with the Commission, a deliberate strategy was developed to retain and improve service to HT consumers. The utilities separated feeders to them so as to provide higher power quality, reduced interruptions, provided tariff incentive schemes and improved customer service to them. These measures appear to have had the effect of better power quality for industrial users.[52] At the same time, the focus on revenue enhancement appears to have neglected, or in marginal cases even hurt, smaller HT customers.

Finally, the reforms were backed by a set of strategic changes. In agriculture, 'crop-centric' use of electricity allowed farmer needs to be met while decreasing agricultural consumption while introduction of single phase Distribution Transformers (DTR) were used to discourage line tapping. Spot billing, outsourced billing, consumer service centres and accounting to different entities helped to reduce field-level corruption. Information management tools were strengthened to track customer usage, changes in consumer class, and other auditing functions.

For our purpose, the central question is whether these activities were stimulated, supported or in some way rested on the regulator, or whether they were largely independently generated and carried out. From the utility perspective, the answer is very clearly that the impetus has come from the utilities.[53] We return to this question in the conclusion to this section below.

Regulator Proactiveness vs *Reactiveness*

The APERC cultivated an impression of a hands-on and proactive regulator. However, like other regulators, the APERC had to operate within a larger information vacuum, which led to a penchant for rather broad, overarching directives. Under these circumstances, the APERC's actions show a mix of proactive and reactive measures.

Among the proactive steps introduced by the Commission, the single most successful measure was that of attracting HT customers back to the utility, through a tariff incentive schemes and use of its policy on non-conventional energy to discontinue third party sales. The first Chairperson's

efforts to signal seriousness of intent by conducting quarterly visits to Discoms and their service territories, along with members, also stands out as a bold and important measure.[54] These visits appear to have contributed to a culture of accountability, by demonstrating that some measures of oversight were in place.[55] As one observer put it, the APERC was acting 'like a boss to the distribution companies'.[56]

An additional important proactive measure taken by APERC includes attention to filling the data gaps plaguing the sector, thereby creating the basis for accountability. For example, the regulator undertook independent statistical analyses of load growth to verify sales forecasts.[57] In another example, APERC commissioned an independent research agency Central Power Research Institute (CPRI) to conduct a study to assess transmission losses, the results of which revealed that the utilities' estimate contained metering and calculation errors and commercial losses. The APERC subsequently issued a trajectory for loss reduction and specific compliance measures, with which Transco complied in a timely fashion.

In other cases, however, the regulator was forced into a reactive stance. This is particularly true on distribution losses, the key performance measure for the utilities. Citing data constraints (particularly on agricultural consumption) as a limitation, the APERC deferred consistently to the utility filings and projections.[58] Until FY 2004, APERC deferred setting targets until a study was conducted to estimate losses, for which it directed the utilities to submit a methodology. When a methodology for loss estimation was proposed by two Discoms, the APERC accepted these without discussion.[59]

APERC's issued between 10 and 17 specific directives over its existence, which range from the very specific, to the extremely broad. Many of these directives, particularly in the early years, seek to fill the information vacuum. For example, APERC directs installation of 0.2 accuracy meters at all interface points, which was only partially complied with after several years. In another example, the APERC directed creation of a sales database which took two years for compliance. Other directives forced utilities to develop consistent approaches to issues, such as developing a procedure for merit order dispatch and preparation of a discussion paper on working capital. In general, the picture that emerges is of a regulatory body that is relatively well informed and close to the ground. At the same time, the approach rests heavily on the utilities to generate their own solutions. For example, in 2004, the APERC asked for a report from utilities on the achievable levels of losses.

The ability of the regulator to steer the sector is partially weakened by what appears to be a relatively poor record of reporting on and therefore of enforcing compliance with directives (see Figure 1). The data show that while the APERC tracks the directives for the year immediately following issuance of a directive, by the third year, several directives that are uncomplied with are simply also not reported on. For example, looking

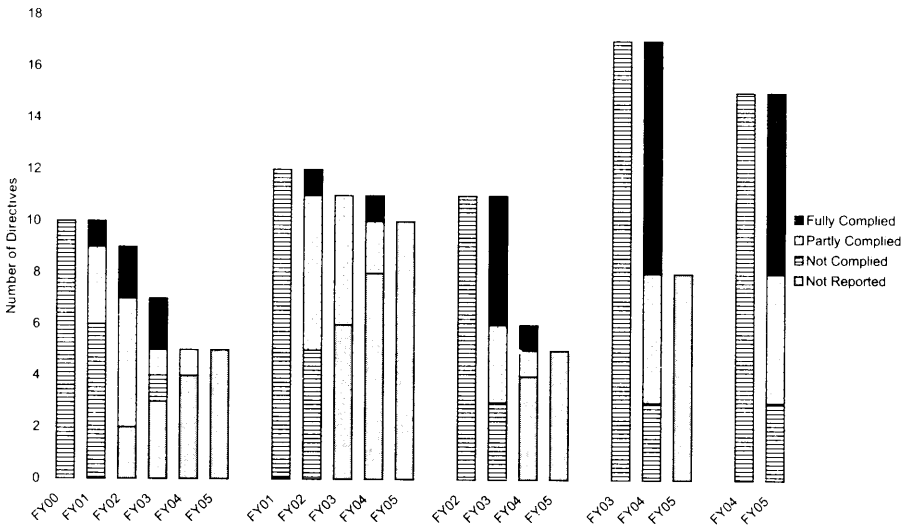

Figure 1: APERC Directive Compliance Status

Note: Each cluster of bars tracks compliance and reporting status – fully complied, partly complied, not complied or not reported – for directives issued in the first year of the cluster. Thus, the first cluster of bars tracks and reports on directives issued in FY 2000, the second covers those issued in FY 2001, and so on. The data are drawn from successive years of APERC tariff orders.

at directives issued in 2001, only one directive was fully complied with, six partially complied, and five not complied with by FY 2002, leaving 11 directives that still required monitoring. However, in FY 2003, only five of the remaining 11 directives were reported as partially complied with. By FY 2005, there were 10 outstanding directives, but they were not reported upon. This analysis suggests that APERC is less than completely thorough on following through its directives.

The APERC is also extremely reluctant to use its statutory punitive powers to enforce compliance. Indeed, the APERC does not appear to have ever fined a utility for non-compliance with its directives. The dominant perception is that one should 'be very wary' of punitive measures and that they should only be used for 'flagrant violations . . . not as part of basic utility management'.[60] Instead, a more collaborative regulatory style is preferred, particularly under the direction of the second Chairperson. Underlying this reluctance to use punitive measures appeared to be a concern with fining a public body, while there would be less reluctance to apply a fine on a private body. The net result, however, is that the APERC has effectively decided not to use an instrument that is arguably needed to enforce better compliance.

Regulator as a Critical Supporting Actor

An important explanation for the improved performance of AP utilities is that the three key actors – government, utilities and regulator – were all largely pushing in the same direction. This also makes it difficult to assign relative credit to the regulator versus the other two actors. Government support was a key enabling factor. That the utilities, strongly led by AP Transco, developed into an effective implementing body was also a necessary condition.

Within this larger picture, APERC did undertake several proactive measures, understood the weak points in the system, pushed the utilities towards better information management, and forced modest performance improvements (such as transmission loss reduction). Where the APERC ran up against either politically laden obstacles, such as the reluctance to install agricultural meters, or lack of cooperation by AP Transco, it was relatively powerless to enforce its views. The regulator was also limited in its ability to play a steering role by the information vacuum. Here it performed creditably to fill information gaps, notably around agricultural consumption. APERC may have built adequate systems of oversight that in the future may allow for more targeted directives, so long as leadership within the regulator remains proactive.

Finally, the electricity sector in AP has been relatively free of some of the political pressures in other states due to its creditable financial performance largely because of increased HT revenues, toward which the APERC has contributed with its own measures. As a result, apart from the first year the financial health of the sector has been gradually improved without increasing government subsidies or tariffs. The ability of all three actors to push in the same direction – for performance enhancing reforms – is partly due to the fact that the sector has not bumped up against political constraints that would come with pressures for either subsidy increases, or tariff increases. How the APERC would have fared under these conditions, which prevail in many other states, has not been fully tested.

Investment

Besides operating cost, capital investment comprises the other major subject of regulatory scrutiny of utilities. Since most Indian systems are underinvested, utilities are expected to invest, at least to maintain if not upgrade the system (e.g. replace burnt out transformers). Thus, the regulator faces the difficult task of pruning investments amidst pressures to invest. Regulators also inherited a culture where politicians often played a role in shaping utilities' investment patterns. In this environment, how did regulators conduct their scrutiny? What decision criteria did they adopt, and how did utilities respond?

Our research shows that investment scrutiny is the weakest aspect of the regulatory process in AP. Investments largely slip through the cracks of the public hearing process, and have therefore escaped public scrutiny. Regulators review the rate of investment, and to some extent cost prudence and assumptions, but not project prioritisation, justification and design. This limitation arises as much due to self-imposed restrictions as to external pressures.

APERC's Investment Review Process: Out of the Public Eye

The APERC's review of investment is almost exclusively an internal process, in part because it is substantially delinked from the tariff process. While the review of tariff filings is the most comprehensive and transparent process followed at the APERC, the ERC filings do not contain details of investment schemes. Instead, the investment component of tariff filings typically contain only proposed budgets for new investments, occasionally a breakdown of the budget into scheme categories, and high-level decision criteria for planned investments. As a result, investment schemes are not subject to public hearings, comment and other forms of external scrutiny enshrined in the APERC procedures. This is problematic, since as part of the tariff determination process, investment approvals ought to fall in the same category as any other cost component, and the regulator should be obligated to justify the inclusion or exclusion of an investment in the tariff.

Moreover, our experience, and those of stakeholders, suggests that details of investment schemes are not easily available to the public.[61] As discussed in greater detail in the section on Stakeholder Engagement in Practice, access to Detailed Project Reports (DPRs) was extremely reluctantly obtained from the APERC, and after repeated request. The current Chairperson expressed awareness that the investment schemes were out of the public eye, and expressed a desire to remedy the situation, perhaps by introducing a summary of schemes in the tariff order and being more open to requests for details.[62] However, the problem with transparency on investment schemes appears to lie more at the implementation level, where senior regulatory staff are opposed on principle to sharing these details, which are viewed as a technical and internal matter that is and should be beyond the public's scope and interest.[63]

Finally, the timing of the APERC's process suggests that even internal approval of investments is not well meshed with the tariff process. As of 2001, utilities are supposed to obtain approval for schemes prior to their inclusion in investment proposals for tariff orders. In reality, schemes may come to the APERC for approval after the tariff process.[64] Since the APERC fine-tunes the DPRs in an iterative process, the result is both delays in

approval (we documented one case of nearly a year delay in approval[65]) and a lack of coordination between the tariff approval process and the investment review.

Internal Review: Missing the Forest for the Trees

The internal APERC review of investment projects is impressive in its detail and in the level of knowledge the staff brings to the review process. At the same time, the review process remains mired in details, and fails to ask higher level questions about the appropriateness of the project for the purpose intended.

Procedurally, the APERC engineering staff first prepares a memo summarising their critique of each DPR. This is circulated among members, who make notes based on their reading of the DPR. Through a process of internal meetings drawing on the memo and notes, the members and staff formulate a position on the final feedback they wish to issue to utilities, which are then drafted in a letter by engineering staff for approval. During this process, the regulators often discuss their review with utility staff.

In their review, regulatory staff examine the reasonableness of analysis and data assumptions, methodology, and self-consistency in DPRs. With regard to the budgets proposed in the ERC filings, the regulator focuses mostly on ensuring a realistic implementation schedule based on historical expenditure. In addition, the APERC developed a rigorous process of ensuring capital was deployed and projects initiated before their costs were amortised into the rate base. They also pay close attention to financial and accounting aspects of investment, such as capitalisation, interest rates, and working capital, since these feed into the final rate calculations. Interaction with Commission staff make clear that investment scrutiny has been a work in progress, requiring constant adjustment to develop ever-improved systems of review as new information or obstacles come to light.[66]

This process of review is better understood by reference to APERC comments in a specific case of High Voltage Distribution System (HVDS) schemes reviewed for this research. HVDS, in principle, is an increasingly well accepted solution to reduce operational line losses and reduce theft. However, it is expensive, and questions remain about whether it is the most suitable alternative. In particular, HVDS schemes can be overcapitalised or not be a least cost option.

In practice, the APERC reviewed cost and other data assumptions for this scheme quite thoroughly, which reflected an understanding of industry practice. The Commission pointed out calculation errors, inappropriate assumptions and inconsistencies. For example, in one case they pointed out that for the number of distribution substations proposed, upstream transmission capacity in the 132 KV system was inadequate. In another

instance, they corrected an assumption of the number of unauthorised connections assumed on a feeder based on the transformer rating at the feeder head. The incorrect assumption led to an overestimation of savings from the HVDS upgrade. The Commission also modified cost assumptions (e.g. of DTRs) based on their independent opinion of industry practice. In some cases they draw on planning guidelines from other technical bodies, such as the Central Electricity Authority (for distribution planning guidelines, for example) or the Rural Electrification Corporation (for Return on Investment, for example).

Thus, the review revealed considerable depth of knowledge and thoroughness. But it also confirmed that the approach to project review was confined to details and calculations. The review did not examine at a higher level the site selection and prioritisation, project design, or the potential alternatives at that site. This is despite improvements in the utilities' data system, which the regulator could request and analyse to force justification of projects.[67] For instance, the APERC did not scrutinise details on transformer loading to verify the need for upgrade. Nor have they hired third parties to conduct independent review, which would be one way of supplementing in-house capacity. They also limited project monitoring to soliciting reports from utilities, rather than conducting field inspections to ensure that projects get constructed and deliver stated benefits as proposed.[68] So far, all HVDS schemes have been approved, though a technical staff member felt many were unviable.[69]

Constraints in Scrutiny

What drives the Commission's restricted review? One view expressed within the Commission is its lack of internal expertise: '. . . in what way is the regulator better suited technically' than the utility to assess investment schemes? The internally drawn conclusion is that the regulator must 'realise its own limits'.[70] However, since the APERC always has the option of hiring independent expertise to conduct review, such views are less revealing about issues of capacity, than about a seemingly internalised deference toward the utility, particularly on project selection. This deference may also be reinforced by the crossover between utility staff and regulatory staff, particularly in the technical wing. The dire need for system upgrade may also increase pressure on the regulator to soften scrutiny, based on the argument that some investment, even if sub-optimal is better than none. Staff indicate that they have had this implicit attitude particularly toward projects in rural areas.[71]

That all these factors shape the practice of investment review is facilitated by the absence of a clear policy for investment review that lays out criteria and methods.[72] The absence of clear direction leaves room for discretion, personal biases and deference.

Information asymmetry exacerbates the lack of capacity to examine investment schemes. Commission staff point out the lack of cooperation from utilities in submitting data as per the Commission's investment guidelines. The Commission interacts regularly with utilities, requesting data or explaining errors.[73] This process of interaction has been evolving. With the first implementation of the multi-year tariff for the distribution companies, utilities have had to file long-term capital expense projections, which include requirements for greater detail.

In addition to these issues, there appears little doubt that government pressures or involvement play a role in focusing regulatory eyes on the trees rather than the forest. This opinion is shared by a range of people involved in and observing the regulatory process. Thus, site selection by utilities for investment projects is often 'political and indiscriminate, without much focus on prioritisation based on highest payback.'[74] While the situation has improved in recent years, a former Discom official suggested that politicians still influence project selection.[75] That the first sites for HVDS schemes were in Chittoor, the then chief minister's constituency and a stronghold of the opposition CPI party, was cited to us as a case in point, and provides circumstantial evidence toward that conclusion. In this particular example, a senior APERC official conceded that he was not particularly convinced of the HVDS's value, particularly without complete metering. However instead of disallowing the scheme, the APERC chose to approve it, but only in a staged manner, subject to step by step approval.[76]

Even in the absence of political pressure, the Commission pays less attention to the viability of projects under the Accelerated Power Development Reform Programme (APDRP), wherein projects receive funding from the Central Government.[77] These instances illustrates a larger belief with the APERC that directly confronting government is unproductive. Where political manipulation may play a role, corruption 'is not to be tackled at the regulator level'.[78]

In summary, there appears to be a line beyond which investment review does not cross. Regulators review budgets and finances of projects more thoroughly than they review investment choices. They review cost and technical assumptions and methodology, but do not question project selection and design. They ensure projects get implemented, but do not monitor project performance post-implementation. It seems that internal capacity constraints are real, but do not limit the depth of investment scrutiny as much as personal attitudes, which are, in turn, influenced by staff background, and regulatory reluctance to question political decisions.

The Politics of Tariff Setting

The political significance of the various tasks performed by the regulator, as discussed above, often crystallise in one set of politically charged numbers

– the tariff. While the tariff determination is intended to be an arithmetic exercise in practice the AP experience suggests there are several intervening factors. Here we discuss the political sensitivity of the tariff process based on past experience, the role of communication between the government and the regulator and prior knowledge of the subsidy.

Political Context: The Tariff Agitation of 2000

APERC's early experience was baptism by fire and appears to have shaped its, and the Government of AP's, subsequent approach to tariff setting. As part of the first tariff setting process in 2000, AP Transco proposed that the government cover 63 per cent of its expected losses through subsidy, requested a tariff hike to cover 22 per cent and suggested it would meet 14 per cent through efficiency gains.[79] When the government only allocated about half the requested subsidy amount, the APERC went by the book and raised tariffs by 15 per cent overall, and by 54 per cent for domestic users. This decision was greeted by extensive public protests and demonstrations, with particular public ire directed at the APERC's decision to raise domestic tariff more than industrial tariff. During this process, the leadership of the APERC was in touch with the chief minister. While the advice from APERC was not to compromise, the political pressure was sufficiently great for the chief minister to announce a countervailing subsidy.[80]

Different constituents interpret this event in different ways. Consumer groups point out that the 15 per cent hike was exactly what was laid out in the World Bank's policy documents, and attribute the protest to public questions about the need for the tariff hike.[81] Regulatory staff draw the lesson that better and more sophisticated communication strategies are necessary, in particular a media outreach effort.[82] Significantly, in subsequent years the APERC announced minimal tariff hikes, despite projections that further tariff hikes would be required. As a paper by an APERC staff member puts it, '. . .the Government of AP muted tariff increases by the Commission by providing subsidy in exercise of its prerogative provided under . . . the Reform Act . . .'[83] It would seem likely that the consumer protests of 2000 sent a clear early signal to the APERC that there were political limits to its operation, and even stronger signals to the government that it would have to provide political cover to the APERC.

Tariff Setting Process: Not Pure Arithmetic

The formal procedure of tariff determination as laid out in APERC documents – the tariff determination process as an arithmetic exercise that falls out as a residual from the 'fully allocated cost' calculation, and the revenue requirement – belies its subjective and political nature. It is more

likely that the regulator, and not only the government, has to pay attention to the political fallout of tariff setting. This is not the same as saying that the regulator was not autonomous or was dictated to by the government. But it is to suggest that the formal procedure is not the full picture.

The boundary between regulator and government was porous during the process of crafting the tariff order. During the Naidu government, the Chief Minister himself and his ministers were involved in discussing the tariff filings and their implications, which is entirely appropriate since these remain public companies.[84] However, once the ARRs are filed and reviewed by the APERC, there are also indications that the finalisation of tariffs is subject to consultation between APERC, the government, and the utilities, although some interviewees suggest that the utilities are not involved.[85] As a politically charged decision, it is hard to imagine how the tariff setting decision could be otherwise, particularly in a period of dramatic change where the tariff requirements change more than incrementally.

The formal procedure requires that the APERC first determine tariffs based on the 'fully allocated cost' of serving consumer classes and the revenue requirement. As discussed earlier, there are various sub-components of the cost calculation process that are subject to interpretation – investment approvals, performance criterion, agricultural consumption estimates and other costs. Further, even after finalisation of the revenue requirement, the Commission sets the HT tariff, which heavily influences the potential tariff burden on other consumers. Subsequent to tariff determination, the Government of AP may allocate a subsidy to reduce the burden to certain consumers. By the process, the bulk of tariffs should largely fall out of finalisation of the revenue requirement, after accounting for subsidies and the HT tariff. In practice, the Commission has an ex-ante indication of the subsidy from budget pronouncements that can and may play a role in the calculation of revenue requirement.[86]

One mechanism observed of the potential use of this knowledge is the APERC's use of 'efficiency gain' targets for the utility as part of its orders. This mechanism was initially proposed by the utility, and over time has come to be adopted by the regulator as an incentive setting device. Initial tariff orders left to the discretion of utilities how to meet this target, while later orders associated them with loss reduction targets. However, these additional targets are presented without justification or explanation, besides being additional and unrelated to the loss reduction targets proposed by the utility and accepted by the Commission.[87] Coupled with the fact that for multiple years the resulting revenue requirement almost exactly matches revenues without need for a tariff increase reinforces an impression that the efficiency gain target is the result of an ex-post adjustment. The APERC insists that the efficiency gain is a useful device for promoting performance increases, particularly in a context where information is scarce making more

pointed interventions hard to achieve.[88] However, within the AP Transco there is a clear perception that the efficiency gain has become a device for the regulator to avoid having to declare tariff decisions that are politically challenging, by placing the burden of adjustment on the utility.[89]

In sum, the formal arithmetic bounds of the tariff-setting process do not, in practice, appear to bind regulatory decision-making. There continues to be an irreducibly subjective element involved in tariff setting which allows space for the consideration of political implications of tariff choices. This is likely a structural issue inherent to regulation under these conditions, and not a feature unique to the APERC. In other words, whatever their technical mandate, regulators are hard-pressed to convince the public of the merits of tariff decisions on technical grounds alone, and as much as the government have to factor in public perceptions and the bounds of public acceptance. At the same time, with the exception of 2001, the APERC has been successful at ensuring regulatory decisions work towards commercial discipline within the sector even while staying within political constraints. In part, this success may be because as revenues from industry have gone up due to a range of creative measures, the regulator is not placed in the position of making trade-offs between political and commercial objectives. This summary leaves unanswered the question of how the APERC would act if the situation should change for reasons beyond its control (for example, a spike in generation costs), and it were forced to choose between commercial discipline and political expediency.

Generation Planning

Generation planning has been a contentious issue for the regulator, not least because they comprise a high share of tariffs. The matter of Power Purchase Agreements (PPAs) between Independent Power Producers (IPPs) and purchase from non-conventional energy (NCE) sources have got the most attention.

To get a sense of magnitude, power purchase costs as a whole comprise 78 per cent of total filed revenue requirements in AP of 12,323 crore for 2006-7, which includes costs of existing utility-owned power plants, IPPs, NCEs and short-term purchases.[90] The costs of IPPs and NCEs alone comprise 26 per cent of power purchase costs, and 20 per cent of total costs. The four new IPPs would increase annual fixed costs, and tariffs, by 1,020 crore, or over 8 per cent, without even including fuel costs.[91] The other factor contributing to the regulatory challenge is that APERC inherited several controversial PPAs and policies governing buyback from them (including NCEs). Thus, from the outset, the regulator was faced with the challenge of fulfilling its obligation toward the consumer and

undoing, or respecting, past political decisions. It important to mention, though, that the regulator has the statutory authority to regulate the pass-through of all PPA costs to consumers, even if in some cases it may not have the authority to review the PPAs themselves.

As with the other regulatory functions, in this section we examine how regulators made decisions, through what procedures, with what input from stakeholders and other influences, and how these inputs were used. This section first examines the situation inherited by the APERC and how it dealt with this situation. We then turn to the decision-making approach pursued by the APERC, and finally conclude with some reflections on the impact of the regulatory process and stakeholder participation on the overall debate over generation projects.

Inherited Projects and Policies: Sustained Government Influence

The APERC inherited a large and complex portfolio of generation projects. Among the most problematic were past PPAs, where its jurisdiction was contested. Specifically, the regulator inherited several high-cost PPAs from the fast-track process entered into between the utilities (but mostly driven by government) and IPPs. Right from the first order, consumers lobbied the regulator to reopen and reassess these PPAs, as well as force their operation into the merit order sequence based on their average cost.

In response, the Commission was silent on the first two orders, despite repeated stakeholder pressure to take a stand on which PPAs (only signed or signed and operating before Commission establishment) the Commission was willing to reopen. Eventually, based on a legal consultation, they took a safe and defensible position of not reopening any PPAs signed before they came into existence, as per the Reform Act.[92] Notably, the first Chairperson was open to reconsidering this decision in the future on the basis of a pending Maharashtra High Court judgement on a similar issue with the Dabhol PPA.[93] He even identified cost reduction possibilities in these PPAs, and directed AP Transco to renegotiate the PPAs with IPPs in light of these possibilities. Given the clarity of the law on the matter, this can be considered a reasonably proactive, independent stance.

A second set of issues inherited by the APERC pertained to several Amendment Agreements to PPAs for new projects. These projects, and particularly four gas-based IPPs, were developed before establishment of APERC, but were revised to switch the primary fuel from naphtha to natural gas. This revision opened the door for full review of the PPAs, but in the face of considerable political pressure to approve them.

The AP Government was clearly the prime mover, having endorsed the projects and set expectations for developers. Indeed, the government

continued to actively participate in PPA Amendment deliberations behind the scenes and in APERC proceedings. It communicated with both the developers and AP Transco. It is clear from their representations that the government had as its primary interest the expedited and successful start to the projects. For example, in the controversy surrounding the use of an alternative fuel, APERC mediated between AP Transco's position of paying fixed costs only to the extent of natural gas availability, and the developers' position of ensuring enough fuel flexibility to prevent any restrictions on the project. The government, in a letter addressed to AP Transco, assured them that gas supply would materialise, and stressed that the project financers may not accept the project without a fuel backstop – thus, effectively backing the developer.[94]

Government thus seemed to play the role of a backroom dispute resolution negotiator in parallel with the Commission's proceedings, even taking the matter up with the Central Government. The APERC would see the outcome of these deliberations when they were placed before them for approval. An AP Transco official at the time revealed that the government forced them to retain the alternative fuel clause.[95] GoAP eventually resolved the standoff on the alternate fuel issue by proposing to postpone the matter till January 2007 after negotiations with the IPPs, which AP Transco also consented to. From here on, the Commission's task of approval (under the second Chairperson) was purely mechanical.

The APERC, based on presentations from Central Government and fuel suppliers, including Oil and Natural Gas Corporation, and Gas Authority of India Ltd., gave them the benefit of doubt. However, there was no argumentation in APERC's orders on the certainty of fuel supply beyond acceptance of a letter of assurance from gas suppliers, nor any citations of data from the suppliers or detailed consideration of the objections from stakeholders.[96] Perhaps there was room for the Commission to suggest compromises or risk mitigation measures, or to encourage a more transparent and substantive discussion of the issue, something that it successfully did on many other occasions.

That the Commission changed chairpersons in the midst of the dispute may not have helped matters. The first Chairperson expressed clear opposition to start-up of the project on an alternative fuel.[97] However, with the matter unresolved when the second Chairperson took office, and the apparent consensus achieved by government with the parties on abeyance, the new Commission may have been hard pressed to disrupt this compromise so early in its tenure.

The above discussion suggests that government continued to call the shots on IPP projects. However, the APERC did force issues into a public forum, though it limited debate and deferred to the overwhelming support from government agencies for these projects. In this next section we examine

decision-making further for new projects and policies approved by the Commission.

Regulatory Decision-Making: Deference to Authority

Indeed, while the Commission's argumentation appears detailed and thorough in particular PPA cases, higher-level rulings that shape investment decisions are less detailed, and show a deference to higher government authority in justifying action. The approval of AP Transco's load forecast necessary to justify the approval of all new IPPs, including four debated gas-fired IPP projects, stands out as a case in point, as do aspects of the Non-Conventional Energy (NCE) tariff policy.

The Commission had approved a reserve margin of 14 per cent based on a new planning criterion of a 1 per cent loss of load probability (LOLP). In this order, the Commission questioned and changed several assumptions, eventually reducing the capacity requirement by almost 1,000 MW to 3,180 MW.[98] However, within 8 months of its previous petitions, AP Transco submitted a revised capacity requirement for 5,251 MW, citing among other factors an additional planning criterion of 0.15 per cent unserved energy. The Commission sought the opinion of CEA, who submitted that a 29 per cent reserve margin would achieve this target. On the basis of CEA's opinion, the Commission approved the forecast and the change in reserve margin. Notably, the Commission did not question why planning criteria and resulting margin were so different between the two virtually contemporaneous (in planning terms) forecasts, or seek justification for the change in criteria. The Commission was satisfied that its basis came from a credible source, the 'highest technical authority'.[99] The tone and level of scrutiny in this order were markedly different from the first, wherein the Commission even issued a show-cause notice that laid the burden of proof for the forecast on the utility.[100]

Some stakeholders believe that the Commission's actions on the reliability margin reflected implicit and explicit pressures from developers and the government.[101] A senior official at APERC noted that the generous assumptions on reliability margin allowed the regulator to approve all four new gas-based IPP projects. Since the four projects were almost identical, it would have placed the regulator and the government under enormous pressure had they been required to selectively reject a subset of them.[102] More explicitly, there are some reports that the government pressed the APERC to act quickly to approve one project, citing pressure from MLAs and growing electricity shortages, although this pressure was reportedly resisted.[103]

In the NCE tariff policy, the Commission initially (2001) deferred to MNES on terms of purchase, but later (2004) conducted a detailed examination. The Commission's NCE policy was a suo motu action that

reviewed and extended an expiring set of government incentives for non-conventional energy sources. As mentioned earlier, the Commission in 2001 forced NCE developers to sell to Discoms in order to stem the migration of HT customers. Presumably, the Commission felt an obligation to continue the precedent set by government for NCE developers on the terms of purchase. The Commission adopted a baseline rate derived from MNES's 1993 guidelines for buyback rates and a 5 per cent annual cost escalation, and retained the escalation factor without explicit justification.[104]

Some stakeholders also expressed concern that the regulator faced pressures regarding the NCE policy. The Commission *suo motu* created a minimum purchase obligation of 0.5 per cent for wind.[105] Several stakeholders questioned the motivation for an unprecedented technology-based purchase obligation. In response, the Commission only defended its authority to issue such a standard, without providing a substantive justification for one.[106] Suspicions of political pressure were stoked by the apparent disregard for public involvement. While the Commission solicited proposals and held hearings from the utilities and developers several months prior to its ruling, it held a public hearing the day before passing its order.[107] All these indications find due process wanting in several aspects of the NCE policy development.

Regulatory Style and Process: Hands-off Regulation, Platform for Transparency and Debate

The observed rule-making style of the Commission in generation planning was more of a judge than that of an independent reviewer. Rather than delving into technicalities of disputed issues, the Commission preferred to hear multiple views, sought expert opinion, and exercised its judgement using simple principles – credibility of sources, industry practice, historical experience, and practicality. To a large extent, generation planning calls for such an arbitration role, since it involves multiple technical fields of expertise, such as fuels, technology and operating experience, in which the Commission cannot be expected to be conversant. Though this may have been unavoidable, the resulting reliance on external sources occasionally substituted for reasoning, and hence raised doubts as to their reasonableness.

As discussed earlier, the Commission gave significant weight to source credibility on decisive matters. On technical issues, such as terms of purchase, the Commission sought compromises between divergent viewpoints – for example, selecting a mid-point for a range of capital costs, or length of proposed control periods for buyback rates. Where the Commission found no common ground or basis for judgement, it did on occasion take matters into its own hands. For example, in the NCE policy formulation, the Commission sent its staff to visit some NCE projects to obtain data on fuel and operating characteristics.

In areas of bread and butter utility operations, obviously areas familiar to most regulatory staff, the Commission argued in much greater depth of detail and verbosity, the sophistication of which were of the highest level seen in this research. For instance, the Commission went to great lengths to address the controversy around merit order dispatch of AP Genco and IPP units. Buried in this issue were some obvious conceptual misunderstandings on the part of some stakeholders. The Commission explained the issue in detail, and directed utilities to file, as well as included in its own orders, detailed merit order dispatch data.[108]

The technical strength of ex-utility staff also posed a barrier to the Commission. In some sense, regulatory staff expressed an internal working divide within the Commission between engineers and economists, one that could be equated to 'old' and 'new' thinking, because they (predominantly) comprised utility and non-utility personnel respectively. Initially matters of generation planning were of strictly technical purview, handled by the technical member and staff. It was only when the first PPA came to the Chairperson for his approval did the Chairperson notice that there were significant commercial implications of the PPA that needed the review of the tariff division. Interviews revealed a modest tension or wariness of each others' approaches and perspectives.

Thus, the process of project review was detailed and thorough in issues that the Commission was comfortable, but hands-off otherwise. In any case, stakeholders had the general impression that the process of review created a platform of transparency. In the case of new IPP gas projects, even though the government led the negotiations, the parties were forced to the negotiation table by the regulatory process, which created a forum for AP Transco to protest the otherwise inexorable push toward a start-up with expensive alternative fuel. Although the openness of the forum stopped short of a public debate of the issues, in the least it revealed enough to expose the negotiation process and the forces at work in the negotiation.

In the case of the NCE projects, the Commission created a forum for open argumentation and demanded justification of all cost and performance assumptions in order to determine buyback criteria for each type of NCE.[109] In most cases, this process led to a reduction in buyback rates from those proposed. Besides squeezing buyback rates, the Commission also forced NCEs to sell only to AP Transco, rather than to third parties (which they did earlier) in order to ensure the gains of additional power were passed on to the bulk of consumers, and not select large customers.[110] In its first NCE order in 2004, the Commission elaborated detailed argumentation and calculations to determine cost assumptions, tariff basis for merit order, fuel availability, and various other details.[111]

A widespread view among many stakeholders is that new and modified PPAs definitely benefited from the Commission's review process. Either

spurred by stakeholder suggestions, or by the Commission's own analysis, the PPAs went through a due diligence process, after which performance incentives were improved and costs trimmed. Some stakeholders cited the example of one project, BPL, where regulatory intervention was credited with raising the base from 68.5 to 85 per cent, and lowering the profit margin on the same PPA.[112]

In summary, regulatory decision-making on generation planning reflects different levels of scrutiny and methods for issues depending on their political sensitivity. On issues that affected investment decisions or involved the government's credibility, particularly those made prior to the Commission's existence, the Commission appears to have erred on the side of conservatism, holding back on critical reasoning, and preferring to defer to government authorities to justify its actions. However, within the confines of more benign PPA terms and policy details that the Commission promulgated, rulings reflected more detailed, transparent and balanced reasoning. In this space, the regulator forced argumentation into a public forum, encouraged and entertained wide stakeholder input.

The Rule-Making Function

The rule-making role of APERC is geared toward implementing policy related to market development, and updating and refining regulatory process. These changes are also often directed toward greater reach of performance based and market principles and are labelled 'second-generation' reforms. Andhra Pradesh has been in the forefront of experimenting with these measures. The APERC is the first regulator in India to implement the multi-year tariff in an institutional environment where retail supply service is fully separated from the distribution 'wires' business. The APERC has led with regulations for implementation of the open access provision in the national Electricity Act 2003. In this section we discuss the initiation and framing of rules, the procedural dimensions of rule-making, the politics of making rules as they emerge in the consultative process, and the role of multiple internal cultures in shaping how rule-making works in practice. Throughout we draw on one example – open access regulations and related cross subsidy surcharge.

Initiation, Framing and Construction of Rules

Experience with framing second generation electricity regulations is highly limited in India, and the APERC is no exception. As a result, much of the momentum, technical knowledge, and framing of the policy choices is undertaken by consultants working with the APERC. As discussed earlier, the AP power sector is supported by a net of consultants who work with each of the key actors in the sector – utilities, regulator, and government.

The terms of reference for the regulatory support consultant, Price Waterhouse Coopers, clearly states their role: '. . . the focus of support is to enable APERC to develop the regulatory approach in the evolving market'.[113] Specific focal areas include open access, power trading, non-exclusivity of licences and so on. These terms of reference are jointly agreed to by the funder, DFID, and the regulator.

In keeping with these terms, the impetus and the first draft of major rule-making efforts comes from the consultants.[114] For example, the consultant suggested that it was time to move toward performance-based regulation and prepared the first draft of a discussion paper. Similarly, consultants drafted the open access discussion paper circulated by APERC. These initial documents then form the basis for further deliberation within the APERC, and as discussed below, the basis for stakeholder consultations and eventual regulations.

The process of refining these ideas occurs through formal and, more important, informal interactions between consultants, who have developed dense networks by working in each others firms in a rapid staff-turnover industry. For example, in advising the state government on policy related to electricity supply for agriculture, the government's consultant explored various options with the utility's consultant before finalising their advice.[115] Thus, the communication that would normally happen between two government agencies occurred first between two consulting firms.

While through their role as producers of first drafts, consultations play a leading role in framing the issues for regulation, there are a diverse set of additional perspectives within the regulatory process that weigh in to shape subsequent drafts. In APERC, there were at least three distinct perspectives within the Commission, perspectives that were shaped by past experience, and academic background.

One point of view was very consistent with the consultants' perspective, and highlighted the need for reform oriented toward competition. This view is exemplified by economists within APERC, informed by their own professional training and background. Regulatory reluctance to move toward open access is understood as an artefact of a culture of safety that comes from a government career, and a reluctance to take decisions that may subsequently be challenged.[116] A second perspective is held by those who come from a technical, and particularly utility background. This background brings a loyalty and a faith in the ability of the utility itself, which is expressed, for example, in a reluctance to unduly question the utility on matters such as investment choice. Finally, a third perspective can best be described as politically sensitive, and aware of the need for regulators to balance political interests and choices. This perspective is informed by a career in government, and within the APERC was certainly represented among the Commissioners. From this perspective, the regulator perceives

its role in open access as balancing the interests of industry against the interests of the consumer, and particularly the small consumer.[117]

Procedural Dimensions of Rule-Making

The APERC follows a clear and predictable procedure for it's rule-making in significant areas, which involves preparation of a discussion paper, posting of information about the paper along with a call for comments, a hearings process, followed by deliberation and final decision. Here, we discuss this process with reference to the open access regulation and the separate, but related cross subsidy surcharge decision.

Preparation of the open access regulation took place in a larger climate of considerable uncertainty. While open access provisions were included in the national Electricity Act 2003, there was lack of clarity about how much discretion regulatory agencies would have in implementing these provisions, and how much would be decided by the Central Government. Thus, the APERC went through three separate consultative processes on the open access surcharge. First, deferring the decision until more guidance had been received from the Central Government. Second, preparing their policy once national the electricity policy and draft tariff policy were available. Finally, revising the policy after the final national tariff policy was produced.[118]

On the open access regulation itself, the APERC acted relatively rapidly, by preparing and airing a draft regulation in August 2004, a little over a year after the omnibus Electricity Act was passed. It received 23 comments on the draft regulation (of which 10 are substantively distinct comments since many comments are reproductions of a single set of views). However, in a significant flaw in the process, there is no interim step through which the APERC summarises and reflects on these comments, and makes clear how it has incorporated the views in its final order. Without this sort of reasoned order, the impact of the stakeholder comments on the final regulation is unclear.

The related decision on the highly debated open access surcharge does not suffer from the same failing. Since the decision was passed in the form of an order, the APERC provides a detailed summary of various stakeholder views, and the basis for its own decision. The importance of the stakeholder comments and reasoning in the manner in which they are addressed becomes clear from a closer look at the issues debated in the course of setting regulations, and the politics embedded in them.

Rule-Making as Politics

The rule-making process for open access illustrates that the APERC's hearing and comment process does indeed provide the space for representation of

various interests, and that industries, consumer groups and others are using this space to contest the nature of emerging regulations. Two issues were particularly hotly contested: whether existing open access customers with separate wheeling contracts would be subject to the new regulations, and the basis for calculating the open access surcharge. We discuss these issues below to illustrate the political nature of the rule-making process.

The APERC received 22 submissions in response to their draft open access regulation, but of these 13 were duplicate submissions sent by various generating companies or their associations. The majority of the comments are from generating companies (15, including duplicates). Other comments include two from industrial users, one from an individual voicing a consumer perspective, one from the Confederation of Indian Industries, one from a fuel supply company and one from an integrated energy company.[119]

The single strongest message came from the generation companies, often wrapped up in outraged language. These companies argued strenuously that existing access to the grid through wheeling contracts should not be subject to new open access rules as the draft regulations proposed but should be honoured for the duration of the contracts.[120] The common statement sent by thirteen companies or associations forcefully argued that the regulation '. . . discriminated against generation companies . . . in favour of monopoly distribution licensees'. The further represented that 'it cannot be that the regulatory process is used to negate and defeat all private enterprise. . .'[121]

These representations appear to have had some effect. The final regulation allows existing users to avail themselves of their ongoing agreements, and exempts them from paying any newly imposed cross subsidy surcharge. Notably, there is no counteracting voice that the regulator could draw on to support its initial stance. The sole consumer submission makes the larger argument that private companies will have to share the burden of the social responsibility that governments and distribution companies have to bear, but does not specifically call for existing users to be subject to the new regulations.[122]

The merits of the argument would appear to depend on whether sanctity of contracts in agreement is used as an overriding principle, or whether the underlying spirit behind the open access surcharge – facilitating a smooth transition for the public distribution companies – is the guiding objective. Since the final regulations (APERC Regulation No. 2 of 2005) are not accompanied by an order providing discussion of the Commission's reasoning, it is difficult to know the exact reasons behind the Commission's shift in position. From the information available, however, it does appear that the volume and intensity of the developer's views had an effect in causing the APERC to shift its position. [123]

In contrast to this experience, during the subsequent process of formulating a companion order on the cross-subsidy surcharge, the balance

of representation was slightly weighted toward consumer and public utility perspectives. Of 17 submissions received in response to the APERC's consultation paper of 13 July 2005, six were from generation companies (of which three substantively different submissions), three from HT consumers (of which two are also generators), four identical submissions from the distribution companies, and five submissions (four substantively different submissions) from individuals, political parties or consumer groups. In addition, the Government of AP submitted a letter that is referred to in the order, but that was not made available to us.

While the debate was, on the surface about methodological issues about how to compute the cross subsidy surcharge, at stake was actually a deeper contestation about the principle behind the surcharge.[124] Distribution companies and consumers argue for an 'embedded cost' approach (resulting in a higher surcharge) that more accurately reflects the cross-subsidy position and would help maintain the financial viability of the utilities. From this perspective, the surcharge is intended as a direct substitute for the cross-subsidy provided. The AP Transco, in particular, is reported to have made 'fierce representations' that the Electricity Act requires that the cost of service approach be used to calculate the surcharge.[125] Generation companies and HT users argued that an avoided cost of generation approach (which leads to a low surcharge) should be used to determine the surcharge, largely on the grounds that the surcharge should not be prohibitive and deter all open access customers. Moreover, they argued that the cross-subsidy is only intended to soften the impact of open access, but that the surcharge need not be equal to the cross-subsidy levels.[126] An insightful comment from an individual, who is also a former member of Telecom Regulatory Authority of India, makes clear the dilemma: 'The Commission seems to have taken the responsibility of simultaneously maintaining the financial health of the distribution companies and also paving the way for increased open access usage . . . this is like riding, at the same time, two horses which pull in opposite directions. . .'[127]

From the stakeholder comments, it is quite clear that the issue is not only a methodological one but a choice between competing, and highly politically charged objectives. Choosing promotion of open access would benefit industrial and generating interests, while choosing financial stability of the distribution companies would benefit the incumbent utilities and small consumers. Significantly, the Government of AP also clearly weighed in on this debate, stating that they would not be in a position to increase their contribution to the subsidy to compensate for any revenue loss from open access. Accordingly, they recommending that the embedded cost approach be used and the surcharge set to fully compensate for lost revenues from open access.[128]

In its order, the Commission chose the embedded cost approach. In its reasoning, the Commission rests on the argument that the embedded cost approach is most closely related to existing cross-subsidies, thereby implicitly agreeing with the view that the surcharge must be determined wholly by the need to compensate for cross subsidies. In its order revisiting the issue a year later following release of the National Tariff Policy, the Commission is more explicit that 'the Commission agrees with the GoAP that introduction of competition cannot be at the cost of financial viability of the utilities'.[129] Interviews confirm that the regulator viewed the need to cushion utilities from a revenue shock as an important part of their job.[130] The government's clear statement that they would not substitute for any revenue loss left the regulator to choose whether or not to risk undermining utility finances and a likely resultant political fallout. Ultimately, the decision inevitably had to factor in the political implications of alternative regulatory choices.

Rule-Making as a Balancing Act

Although stakeholders in the regulatory process tend to see the APERC in black and white shades, the open access experience suggests that a diversity of perspectives are, indeed reflected within its internal processes. Consultants play an important role as drivers of a pro-market perspective, and their role is particularly important as initial framers of choices between alternative rules. This framing is then filtered through the various perspectives within the APERC, notably the reality check of political viability and acceptability. Viewing the APERC as having built in mechanisms for articulation of various perspectives through various factions is probably more accurate than viewing it either as entirely given to one or another approach.

In cases such as the open access rules which have potentially large political implications, the regulator's internalisation of the government's political constraints is likely to prevail, as it explicitly did in this case. The government argued before the APERC that the utility could not be allowed to go bankrupt, and the APERC agreed, even at the cost of muzzling the development of open access.

In this case, following due process plays an important, but also limited role. Stakeholder comments provided the APERC justification for balancing the various interests represented before it. Notably, generating companies with existing access won a major concession – exemption from the cross-subsidy surcharge for the duration of their contract – through the force of their representation. However, due process provided only limited legitimacy because the nature of the decision required the regulator to pick among competing interests associated with competing beliefs – reform

through bold measures even at the risk of upheaval, versus reform subject to orderly politics. Reasoned arguments play only a limited role when confronted with strongly held beliefs.

Stakeholder Engagement in Practice

Like other regulatory commissions, the APERC has provisions in its operating procedures to ensure that stakeholders views can be represented before the Commission. In theory, stakeholder involvement can provide additional information, lend credibility to regulatory proceedings, and help inform regulators on the likely public response to their decisions, thereby helping them make better informed decisions. In this section we examine how APERC's involvement with stakeholders through both formal provisions and actual practice. The discussion is organised around three categories: transparency, participation and accountability.

Transparency: A Strong Framework, but a Guarded Gatekeeper

The APERC presented a mixed story on transparency. The Commission had instituted some robust formal processes for providing information, but at the same time there was lack of clarity on how far to extend transparency, leaving room for discretion and a considerable amount of cautious gatekeeping.

The APERC's conduct of business regulations clearly state that 'records of the Commission ... shall be open to inspection by all.'[131] While it also provides for some documents to be kept confidential, these have to be clearly marked as such by an explicit order. The presumption, in other words, is for full transparency unless explicitly specified otherwise.

In keeping with this presumption, the APERC has a clear and thorough web site on which regulations, orders and other critical documents are readily available. Examples of particularly good and innovative practice are the web sites section on cases that are related to APERC decisions, and a section devoted to consumers. Thus, the APERC web site is an important resource for consumers and other stakeholders.

However, as with other Commission, below the top level of the Commission's public documents - orders and regulations - there is considerable lack of clarity on both the available records of the Commission and the means through which they are available. The APERC has failed to prepare a well-indexed database of documents other than orders and regulations, to better enable stakeholders to access source material on the basis of which it prepares its decisions. While the APERC's business

regulation make clear that there is a presumption of transparency, in practice, these documents are hard to access, with access determined on a case to case basis by a gatekeeper, normally the APERC secretary. Examples of documents that fall into this grey zone include details of APERC scrutiny of investment schemes, and Government of AP communication with APERC, both of which were difficult for the research team involved in this project to obtain.

As a key function of the APERC, permitting scrutiny of investment schemes proposed by the utility should be an important part of the APERC's commitment to transparency. In practice, however, there was considerable confusion within the APERC as to whether this information could and should be made public. Indeed, the argument given was that consumers should only be interested in material that directly impacts consumers, while investment schemes were technical matters beyond the consumers competence or interest. Only after direct intervention from the Chairperson, who agreed with the principle that all information should be made available, and that the public should be at liberty to decide what is relevant, not the Commission, was the team allowed to look at a few files relating to investment scrutiny. Similar difficulties were reported by consumer groups. It is to the credit of the APERC that the information was finally made available, but this instance also points to the need for greater clarity and more systematic procedures.

In a second example, the team requested correspondence between the government and the APERC on the controversial issue of the cross-subsidy surcharge. The thrust of this correspondence was reported in the Commission's own order on the subject. However, we were informed that we would have to seek the documentation directly from the government, or that the correspondence could only be shared after permission was sought from the government.[132]

In sum, while the APERC has strong rules that favour full transparency, and APERC leadership agrees in full with this principle, a presumption toward transparency has not been internalised, in particular by APERC administrative staff. While there may indeed be good reason to keep some documents confidential, it would help the APERC's credibility to have clear and well communicated rules on which documents are to be kept confidential and why, with a high threshold for declaring documents off limits. Instead, there is a tendency to draw a discretionary line between what a consumer needs to know, and what is internal, technical, and should remain within the Commission. Having in place such a discretionary 'gatekeeper' is a flawed basis for the APERC to operationalise its commitment toward transparency.

Stakeholder Participation: Active Participation by a Few

The APERC consultation process is characterised by a small number of high active participants, who include among them a few intervenors of considerable knowledge and capacity. From among consumer-oriented groups, about a half dozen intervenors, including farmers' groups, a couple of NGOs, a political party – the CPM, make up the consistent participants in the regulatory process. Some of these interlocutors have established a track record of credibility with the APERC, and are considered 'almost equivalent to Commission staff in calibre'.[133]

APERC has had in the range of 100 objections filed each year that are targeted toward Discoms (See Appendix). In addition, since FY 2004 a growing number of objections have been targeted towards Transco (presumably related to power purchase and the new IPP projects), numbering 329 in FY 2005 and 117 in FY 2006.

From industry, associations of generating companies have been active, but industry participation as a whole is limited, and reducing over time. In FY 2002, industry contributed about 25 per cent of objections, but only about 10 per cent of objections in FY 2005. Within the industrial segment, only about 4-5 members of the 25,000 strong Federation of Andhra Pradesh Chambers of Commerce and Industry actually participate in its Energy Committee that examines regulatory orders.[134] This impression of narrow participation from industry is confirmed by APERC insiders.[135]

Farmer groups, on the other hand, have been consistently active, particularly from the Southern and Eastern Discoms. In FY 2003, farmers (like in Karnataka) filed about 460 objections in duplicate to gain attention. A few farmer group representatives constitute the core group of intervenors that actively participate in the regulatory process, and make substantive interventions.

The APERC has not, so far, taken any proactive measures to stimulate stakeholder participation, or to reach out to disadvantaged and under-represented groups. Recognising that participation is limited to a few groups, the Chairperson was open to the idea of support for consumer groups, but was unsure how it could be undertaken.[136] So far, unlike the notable example of Karnataka, the APERC has not seen its role as proactively stimulating consumer or stakeholder participation in its processes. The APERC was, however, flexible and responsive in holding public hearings based on where a large number of objections were filed.

The regulators themselves approach stakeholder participation and the hearings process in particular with a judicial manner. As the first Chairperson put it, '. . . we coolly sit down like judges. . .' and while there are several participants for whom hearings are simply an opportunity to

vent their frustration, comments at hearings gives the Commissioners insight into where support exists for particular measures.[137] For example, farmers represent on the type of agricultural tariff structure they would consider fair, which serves as an input into Commission deliberations. The hearings also provided an opportunity for the Commissioners to garner information from others within the system, such as retired Chief Engineers, to provide insight into the functioning of the electricity system. Particular stakeholder groups were also able to use the hearings as an opportunity to put forward suggestions for regulatory approaches that were consistent with their own interests, such as power factor based incentives as well as penalties.[138]

For their part there was considerable scepticism from stakeholders about the extent to which their concerns were addressed and to which the APERC was truly independent from the government. This scepticism was common across consumer groups, farmers groups, and industry. One consumer organisation vividly described participation in the regulatory process as 'blowing a conch near a deaf man's ear'.[139] Another gave a telling example of an order on purchase of non-conventional energy that was released a day after a hearing, suggesting that the APERC cannot possibly have done justice to stakeholder comments in such a short period.[140] In particular, stakeholders felt that at the end of the day, the APERC is but an 'extension of government' and is occupied with balancing tariff raises against the available subsidy, which is not very different from what occurred prior to creation of the APERC.[141] As a result, HT consumers in particular prefer to exercise their own channels to government and care little about participation in regulatory processes.[142]

Although the comments above captured the first reaction of most stakeholders, when further pressed on whether there had been any improvements compared to the pre-APERC situation, almost all offered a more optimistic view. There was broad agreement that regulation had introduced a much-needed element of transparency into the sector. Thus, consumers are now able to have access to ARRs, study them, and interact with regulatory staff. [143] Previously, this entire process had been closed and non-transparent. The hearings process had also provided a place for consumers voice their opinions, providing a measure of hope that their voices would, over time, have more impact. The APERC also had some credibility as providing a check on utilities, which previously were unchecked.[144]

Closing the Loop: Ease of Accountability

For stakeholder participation to be productive, stakeholders must have some sense of how their input is used. In other words, the loop must be

closed. To do this, stakeholder comments must form part of the regulatory record, as must a discussion by the regulator of how their reasoning uses stakeholder views.

The APERC has established a track record of reasoning in their orders, but with two flaws. First, the tariff orders do not refer to specific stakeholder comments, but only in a general way to submissions received by the Commission. Without clear response to specific comments, stakeholders cannot have an accurate sense of whether and how their input has been used. Second, as discussed earlier, while the APERC does produce draft regulations on which it seeks input, it does not provide public reflections on and reasoning for its final orders.

Another area where the APERC performs sub-optimally from an accountability perspective is in its tracking and monitoring of its directives. In its early years, the APERC tariff orders carried a list of directives, but without clear reference to how the regulated utilities had performed on its early directives. In more recent orders, the APERC has included an appendix reporting on directives carried forward and new directives. But far more useful would be a clear referencing system that allows stakeholders to track through the extent of compliance with directives from the year in which they are issued, until they are either fulfilled or abandoned. As the directive compliance analysis discussed earlier suggests, several APERC directives simply disappear from one tariff order to the next without appropriate follow through.

Finally, production of annual reports that both summarise the activities of the Commission and provide budgetary details are an important part of ensuring accountability, not only to stakeholders but also to the state legislature. On this count the APERC's track record has been weak. It produced annual reports for its first four years, but the web site records no annual report after 2002-3. In correspondence, the APERC indicates that reports have been prepared for each year up to 2004-5 and tabled before the legislature, although reports after 2002-3 have not been placed on the web site. The delay in finalising annual reports is attributed to delays in the audits of Commission accounts.[145] Both prompt finalisation of audits, and reliable postings of reports on the web site are areas requiring improvement.

The Bottom Line: Limited, but Significant Impact of Stakeholder Participation

In the end analysis, both regulators and stakeholders will only continue to be committed to an open and participatory regulatory process if the process leads to substantive changes on the ground. In AP, there are some initial indications of gains from participation in two dimensions: substantive impacts and procedural impacts.

Power purchase has consistently been an area of considerable focus for stakeholders. Thus in the 2000 tariff order, consumer groups argued that inefficient negotiation of PPAs had led to high costs.[146] In 2001 consumer groups specifically asked the APERC to widen its scope to examine PPAs that came into being prior to establishment of the Commission.[147] In 2002 they questioned the wisdom of contracts that required AP Transco to pay fixed costs for IPPs irrespective of the amount of power drawal.[148] These demands appear to have been a factor in persuading the APERC to seek to persuade voluntary renegotiation of some PPAs, albeit without success.

However, this established track record by consumer groups does appear to have sent signals of serious intent when it came to negotiation of new PPAs. For example, the BPL PPA is considered by insiders to be a considerable improvement over earlier PPAs, a gain attributed in part to active public scrutiny and involvement in the PPA hearing.

Procedurally, stakeholder pressure has resulted in several gains. For example, in response to stakeholder requests, the Commission forced distribution companies to make public their agricultural census reports.[149] Similarly, the APERC ordered that the dispatch order be posted on the web in order to allow stakeholders to assess for themselves whether AP Generation Company was being disadvantaged in dispatch. Finally, the Commission has expressed its willingness to be more proactive in stimulating participation by, for example, agreeing to translate its orders into Telugu to facilitate greater awareness in rural areas and among lower income groups. It has also opened the door to considering special outreach efforts for rural areas and to establish a dedicated mechanism to support consumer advocacy.[150]

Conclusion

The APERC emerges from this review as a competent, capable regulatory body. However, it operates within a larger regulatory space occupied by an engaged government and a strong, reformist utility, and subject to considerable political constraints. This tends to focus its approach on details, which keep it below the political radar, rather than on larger and potentially more sensitive issues.

Institutional and Political Context: A Supportive Government

The APERC began its existence as part of a larger World Bank supported reform programme. One immediate effect of doing so was to provide the APERC with unique access to support and training, including on-site presence of consultants. While consultants helped build technical capacity, they also shaped substantive decisions and the future trajectory of the APERC. While these mechanisms have received praise, this experience raises

the larger question of whether substantive directions for a regulator should be set in a more deliberate fashion, and not be the by-product of choice of consultant. One significant lacuna in the APERC's set-up period was attention to governance considerations such as procedural safeguards. This lacking has, perhaps contributed to subsequent murkiness in implementing procedures around transparency, communication with stakeholders, and requirements for hearings.

In addition, the APERC operated within the larger framework of a government that was actively engaged in supporting a reform process, and that lent considerable support and authority to the regulator. It also worked with a utility that has been unusually proactive and reformist. Unusually in the Indian context, government, utility and regulator were often pushing in the same direction. While the initial goal of reform was to move toward privatisation, once this goal was abandoned, reforms have substantially continued on track with notable and impressive gains. While there are certainly cases of conflict, this larger picture of cooperation frames the discussion of how regulation operated in practice.

Regulation in Practice: Competent, Cautious and Pragmatic

The internal personnel structure of APERC revolves around three distinct networks, each of which contributes a different approach to the regulatory culture. The first set is staff with a largely technology and engineering perspective from past or ongoing careers and networks with the AP state utilities; in March 2005, fully half the officers of APERC fell in this category. A second set bring a disciplinary orientation toward finance and economics. This set includes both external consultants, and APERC officers (and here APERC is unusual in having skilled economists among its staff). A third shaping influence comes in the form of the Chairperson of the APERC, which in both cases so far has been an IAS officer, who brings a far broader familiarity with the pragmatics of implementation. The internal culture of APERC reflects the interaction of these three perspectives, which combine to different extents in different decisions to result in a final outcome. For example, investment scrutiny has been the province of the technical arm, and as a result has been conducted in a detail-oriented fashion using the insider knowledge of APERC technocrats. In politically charged decisions, such as the regulation on cross-subsidy surcharge, enthusiasm by consultants and APERC economists was contained after it was subject to a political reality check by the leadership.

Given the predominance of former employees of the public utility, the APERC operated at its best within the realm of technical analysis and scrutiny. Its scrutiny of investment schemes was detailed, within the confines

of each scheme. In seeking to fill the data gap on agricultural consumption, it skilfully sought wide buy-in and credibility for its approach by both consulting AP Transco and by bringing in outside statistical expertise to advise on the sampling techniques. Similarly, it brought pressure on utilities to reduce transmission losses by commissioning independent assessments of these losses. Finally, APERC has a track record of timely and thorough tariff orders, which are a precondition for a well-functioning sector.

However, the Commission slipped into a different, more cautious, and judicial rather than investigative mode on any issues that had political overtones. Thus, while detailed scrutiny of investment schemes were carried out thoroughly, the APERC avoided larger questions of suitability and alternatives that may have called into question implementation of the scheme. Taking on these bigger issues may have exposed the APERC to pressure from elected officials with an interest in particular schemes, a challenge it did not seem willing to accept. A tendency toward defensibility rather than independent scrutiny is also evident in APERC's approval of four gas fired plants based on a rather uncritical acceptance of a high reserve margin, which reversed a significantly lower estimate just a few months earlier. In this case, the APERC accepted a recommendation by the Central Electricity Authority, although the dramatic shift in estimates within a few months warranted further query.

On only a few occasions did the Commission adopt a bargaining and diplomatic approach to finding regulatory solutions. For example, confronted with pressure from stakeholders to reopen existing PPAs, it explored its legal options, concluded it did not have the standing to do so, and then identified cost reduction options and sought to persuade the parties to renegotiate, albeit without success. The Commission's effort to construct a credible sampling basis for measuring agricultural consumption is another example of sensitive mediation. However, the APERC's ability to play a bargaining game may be limited by its lack of a big stick with which to threaten repercussions. Faced with relatively low compliance rates, the APERC was self-restrained in imposing any penalties or fines since its inception. This self-restraint is due to a regulatory space dominated by a large and powerful utility that, unbundling notwithstanding, remains centrally directed. In addition, the government retains an active role beyond that of enabler, by closely monitoring the utility, and by steering the sector away from politically fraught waters. The APERC is, in many ways, a junior, if essential, partner in this three-way relationship.

At most times, the three entities were steering the sector in the same direction – towards better financial and technical performance, lower loss levels, and greater use of management incentives. While the APERC played a capable supporting role by stimulating plugging of data gaps, producing

orders on time, and so on, it has only in a few cases been an active driver of change. This role has most often fallen to AP Transco with the government's support.

On occasion, interests of the three bodies have differed. The issue of non-conventional energy (NCE) is one such example, when the APERC order supporting NCE, perhaps due to pressure from the government, was opposed by AP Transco. In another example, the regulator's insistence on agricultural metering ran afoul of political realities. On such occasions, neither APERC nor AP Transco has been able to reverse political decisions.

Instead of trying to free itself of political constraints, APERC has sought to maximise its effectiveness within them. For example, instead of refusing to approve an HVDS project, it chose to allow it to proceed on a pilot basis with step by step approval. In many ways, this pragmatic approach reflects the political reality that the APERC's own existence, credibility and future is by no means separable from the government's actions. Thus, following the political outcry after the APERC's first tariff order substantially increasing tariffs, an implicit coordination appears to have developed, whereby the APERC uses the ambiguities in the tariff process to limit the revenue requirement, while the government faithfully provides a subsidy sufficient to stem tariff hikes. This accommodation is made possible by superior revenue performance by AP Transco, in particular by attracting and retaining HT customers, thereby keeping the subsidy requirement in check. Under different financial circumstances that placed there relationships under pressure, a similar regulatory space could result in more confrontational outcomes.

Given the pressures to accommodate, the APERC was unlikely to be able to serve as a steward of reform without explicit support from the other two players. Instead, its ability to influence change has depended on how well it exploits the available opportunities it has and builds credibility as an agent of change, particularly with the larger group of stakeholders.

Role of Stakeholders: Narrow Participation, Limited Gains

The APERC has built a reasonably robust infrastructure to support its public consultations and engagement based on a strong web site, and a track record of engagement with at least a few dedicated groups. However, there are at least a few serious shortcomings in their stakeholder process. Most problematic, there remains confusion on how far transparency should extend, exemplified by reluctance to share APERC scrutiny of investment schemes. On the rule-making side, while the APERC holds consultations on regulations, the public is never informed about how their input is used. In one notable case, an order was issued the day after a consultation, leaving little confidence that public comments were taken into account.

Finally, the absence of regular annual reports, which are meant to be tabled before the legislature, undermines the basis for legislative accountability.

The APERC has cultivated productive relationships with a relatively small number of informed and regular interlocutors including farmers groups, consumer advocates, NGOs, and industry, with whom interaction is respectful and detailed. Some of these groups have accumulated a formidable body of knowledge through interaction with APERC over the years. Moreover, at least some of the interaction rises above the parochial to speak to the public interest, as in the scrutiny of PPAs or the example of consumer groups pointing out that incentive-based regulation will be extremely difficult to implement in the absence of full agricultural metering. However, this interaction rests on a very small number of groups. The APERC has considered but not acted, as yet, on creating a dedicated mechanism for outreach and support to stakeholders to stimulate greater and more in-depth participation.

The track record of accomplishments through stakeholder engagement remains thin. Some notable procedural gains, such as transparency in agricultural census reports, have been achieved through consumer pressure. Substantively, stakeholder comments and analysis appear to have contributed to more detailed scrutiny of PPAs and resultant gains to the public, although establishing causality in such a case is extremely hard. Based on these modest gains, stakeholder sentiment is dominantly that the APERC has brought welcome transparency, but does not signal a dramatic change from business as usual in the governance of the sector.

If the APERC has failed to change the established politics of the sector, it is at least in part because it limits itself to a technocratic framing that seeks to formally deny the existence of political influences in its functioning. As a result it operates only within politically safe limits. For example, the APERC reasoning in its cross-subsidy surcharge order is technical in its tone, even while the issue is suffused with political considerations. Based on this approach, stakeholders do not currently see the APERC as a site for resolution of these sorts of charged political issues that lie at the heart of sector reform. To build this level of credibility, the APERC would have to be willing to substantially expand its stakeholder engagement and embrace a substantial role for democratic process in its decision-making structures.

Notes

1. N Sreekumar, M Thimma Reddy and K Uma Rao, 'Analysis of Policy Process in Power Sector in Andhra Pradesh', Monograph, Centre for Economic and Social Studies, Hyderabad, 2003.
2. Quoted in Sreekumar et al., p. 12.

3. Sreekumar et al.
4. In the view of one member of the Hiten Bhaya Committee, T L Sankar, these changes did not amount to anything very different. The introduction of the World Bank led to considerable additional expenditure on consultants and the loss of time, with very little gain. Interview with T L Sankar, 1 May 2006.
5. Critics point out that the reformers had not adequately looked into the sudden rise in APSEB's losses after several decades of creditable performance. As a result, they focused too much on agricultural subsidies, and not enough on increasing power purchase costs and loss of lucrative customers due to joint ventures with private industrial consumers. Moreover, they note that demand estimates were overblown, leading to greater emphasis than needed on attracting private capital for generation. For details, see Sreekumar et al.
6. Notably, the government embarked on an extensive communication effort to win support for reforms, which included releasing a policy document for discussion, initiating dialogue with unions and opposition leaders, and holding a public forum. The reform was controversial nonetheless, with a major tariff hike by the APERC in 2000 providing a flashpoint. Madelene O'Donnell and Parmesh Shah, Andhra Pradesh, India, 'Participation in Macroeconomic Policy Making and Reform', *Social Development Notes*, 78, World Bank, March 2003.
7. World Bank, 1999, p. 12-3.
8. World Bank, Project Appraisal Document, Andhra Pradesh Power Sector Restructuring Project, Report No. 18849 IN, 25, January 1999.
9. Interview with G P Rao, first Chairperson APERC, 1 May 2006.
10. Interview with APERC staff, 1 May 2006.
11. Interview with APERC staff, 1 May 2006 and Commissioner, 1 May 2006.
12. This view is inferred by examining NERA training materials used to train the Orissa Electricity Regulatory Commission. It is possible, but unlikely, that the approach has changed significantly between the two regulatory training efforts.
13. Interview with APERC staff member, 25 May 2006.
14. Interview with Mr Chandrababu Naidu, former Chief Minister of AP, 1 June 2006.
15. Interview with senior management of AP Transco, 2 May 2006, consultant, 2 May 2006 and APERC staff, 25 May 2006.
16. Interview with first Chairperson, APERC, 1 May 2006.
17. Interview with Secretary, APERC, 25 May 2006.
18. An APERC member brought in staff known to him during his prior work at the utilities.
19. However, this may be simply an accounting artifact, with consultancies noted under other categories such as professional services.
20. Interview with consultant, 2 May 2006.
21. Interview with APERC staff member, 25 May 2006.
22. Interview with first Chairperson, 1 May 2006.
23. Interview with first Chairperson, 1 May 2006.
24. Interview with consultant, 2 May 2006.
25. Interview with first Chairperson, 1 May 2006.
26. APERC Tariff Order, 2000.

27. Interview with regulatory consultants, 26 April 2006 and 2 May 2006.
28. Interview with regulatory official, January 2007.
29. APERC Tariff Order, 2001, p. 169.
30. APERC, Tariff Order, 2000, p. 55.
31. APERC, Tariff Order, 2001, p. 60-2.
32. APERC Tariff Order, multiple years.
33. APERC, Tariff Order, 2003.
34. APERC, Tariff Order, 2005, p. 72.
35. APERC Tariff Order, 2005, p. 21.
36. Personal correspondence, APERC, 1 January 2007.
37. APERC Tariff Order, 2002, p. 57.
38. APERC Tariff Order, 2003, p. 83.
39. Personal Communication, APERC, 1 January 2007.
40. APERC Tariff Order, 2003, pp. 82-3.
41. APERC Tariff Order, 2002, p. 83.
42. APERC Tariff Orders, various years.
43. Interview with senior APERC official, 1 June 2006.
44. Interview with first Chairperson, APERC, 1 May 2006.
45. Note that we aim to understand the workings of the regulator, not to assess the utilities' true performance. We also do not have the scope or data to relate cause and effect and therefore draw conclusions on the regulators' effectiveness; rather we wish to gain insights into the forces at play.
46. It is noteworthy that some experts and consumer groups believe that performance statistics may overstate true gains. In particular, they voice a suspicion that through manipulation of billing data, the percentage of high-tariff customers is over-inflated, making billing look better and reducing losses. Interview with electricity expert, 1 May 2006 and consumer representative, 2 May 2006.
47. Interview with Discom Consultant, KPMG, May 2006.
48. Interview with first Chairperson, APERC, 1 May 2006.
49. Interview with Chandrababu Naidu, former Chief Minister of AP, 1 June 2006.
50. Interview with former Director, Commercial at APCPDCL, 1 June 2006.
51. Interview with CMD, AP Transco, 2 May 2006.
52. Chairman of Energy Committee, Federation of Andhra Pradesh Chamber of Commerce, India (FAPCCI), 25 May 2006.
53. Interview with senior AP Transco official, 2 May 2006.
54. Interview with first Chairperson, APERC, 1 May 2006.
55. Interview with consultant, 2 May 2006.
56. Interview with consumer advocate and member of Engineer's Association, 2 May 2006.
57. Tariff Order FY 2003, p. 217
58. See early APERC tariff orders including Tariff Order 2002, p. 83, 2004, p. 91 and 2005, p. 134, for deference to utility projections.
59. APERC Tariff Order, 2004, p. 92.
60. Interview with senior APERC official, 1 June 2006.
61. 'Electricity Governance in India: An Analysis of Institutions and Practice', Electricity Goveranance Initiative, February 2006.

62. Interview with Chairperson, APERC, 1 June 2006.
63. Interview with senior regulatory official, 1 June 2006.
64. Paragraph 10.5 of the License contains the provision to include in investment proposal in ERC filings only those schemes already approved by the APERC. But more often than not utilities failed to comply. For example, see Tariff Order, FY 2003, p. 123.
65. One HVDS Scheme was submitted in Jan 2003, received feedback from APERC only in December 2003 to alter certain cost assumptions.
66. Personal communication, APERC staff, 1 January 2007.
67. Interview with retired Discom official, 1 June 2006.
68. Members ask for updates from Discoms on projects during their quarterly site visits, according to Member, Technical, but do not individually track project implementation, 25 May 2006.
69. Interview with staff member, APERC, 1 June 2006
70. Interview with senior regulatory official, 1 June 2006.
71. Interview with regulatory official, January 2007.
72. Interview with first Chairperson, 2 June 2006.
73. These comments are based on personal review of the APERC's file for this project, 2 June 2006.
74. Interview with staff member, APERC, 1 June 2006.
75. Interview with former Discom official, 1 June 2006.
76. Interview with senior regulatory official, 2 June 2006.
77. The Accelerated Power Development Reform Programme is a Central Government programme that provides financial support to upgrade physical infrastructure.
78. Interview with senior regulatory staff, 1 June 2006.
79. Madelene O'Donnell and Parmesh Shah, 'Andhra Pradesh, India: Participation in Macroeconomic Policy Making and Reform', *Social Development Notes*, 78, World Bank, March 2003.
80. Interview with senior official of APERC, 1 May 2006.
81. Interview with consumer group, 2 May 2006.
82. Interview with regulatory staff, 25 May 2006.
83. Geeta Gouri, 'Design and Governance of the Institution exercising the Regulatory Function: The Indian Case'.
84. Interview with consultant, 3 May 2006.
85. Interview with consultant, 3 May 2006; interview with AP Transco representative, 2 May 2006.
86. Government sources insist that the subsidy is not known ex ante (Interview with former Energy Secretary, 3 May 2006). However, others involved in the process insist that the subsidy is known prior to tariff determination (Interview with reform consultant, 3 May 2006 and senior official of AP Transco, 2 May 2006). Moreover, the approximate subsidy amount is known from the state budget (Interview with APERC official, 25 May 2006).
87. Tariff Order 2004-5, issued March 2004, p. 159.
88. Personal communication, APERC staff, 1 January 2007; and personal communication with first Chairperson, APERC, 2 January 2007.

89. Interview with senior AP Tranco official, 2 May 2006.
90. APERC Tariff Order, 23 March 2006 for Distribution and Retail Supply Businesses, Table 35.
91. PPA Amendment Agreement between Vemagiri Power Gen Ltd and AP Transco, 18 June 2003 (APERC web site, posted 1 July 2006), p. 15.
92. This contrasts with the Karnataka case of Tannir Bhavi, where the KERC stretched its legal interpretation to protect the consumer interest. This only suggests the extent to which – right or wrong – regulatory powers can be exercised if desired.
93. Interview with former APERC Chairperson, 2 June 2006.
94. APERC Order of 14 December 2004, In the matter of Consent for proposed amendments to Power Purchase Agreement between AP Transco and GVK Industries. Available at www.ercap.org.
95. Interview with senior AP Transco official, 19 May 2006.
96. Consumer representatives argue they had pointed out fallacies in the fuel suppliers' representations of fuel availability. Interview with consumer advocates, 2 May 2006. We were unable to judge the basis for these arguments, since the Commission preferred not to release these letters without obtaining the permission of the Government of AP.
97. Interview with first Chairperson of APERC, 2 June 2006.
98. 29 July 2002 Order on demand forecast.
99. 8 April 2003 Order.
100. See APERC Order O.P. No. 506, 29 July 2002 and O.P. No. 179, 8 April 2003.
101. Interviews with Independent journalist, and union representative, June 2006.
102. Interview with senior APERC staff member, 25 May 2006.
103. Interview with senior regulatory official, 2 June 2006.
104. Suo Motu proceedings on NCE incentives, 20 June 2001.
105. APERC Order on purchase from non-conventional energy sources, 27 September 2005.
106. Tariff Order for Distribution Companies 2006-7, Paragraph 136.
107. Developers, associations and AP Transco were heard on 22 December 2003 and 23 December 2003 Public hearing held on 19 March 2004 order passed on 20 March 2004.
108. Tariff Order 2001-2, 24 March 2001.
109. APERC Order for Purchase of Power from Non-Conventional Energy Projects, 20 March 2004.
110. Interview with first Chairperson, 2 June 2006.
111. APERC Order on Purchase from Non-Conventional Energy Sources, 20 March 2004, R.P. No. 84/2003 in O.P. No. 1075/2000.
112. Interview with senior official, AP Transco, 19 May 2006 and interview with Consumer representative.
113. Terms of Reference for Support to APERC (Section 3). Document obtained from APERC, 4 August 2003.
114. Interview with first Chairperson, APERC, 1 May 2006 and with regulatory consultant, 2 May 2006.

115. Interview with utility consultant, 3 May 2006.
116. Interview with APERC staff, 25 May, 2006.
117. Interview with senior APERC official, 1 June 2006.
118. APERC, O.P. 16 of 2005 and O.P. 13 of 2006, Available at www.ercap.org Accessed on 16 November 2006.
119. Submissions on Draft Open Access Regulations (2004) obtained from APERC.
120. This issue is covered in Section 7 of the draft and final Open Access regulations.
121. Comments by Small Hydro Power Developers Association (26 August 2004) to APERC on Draft Open Access Regulations. Also repeated in several other comments.
122. A precise rebuttal to the private developers' argument was put forward in a consumer submission during subsequent open access surcharge discussions, but by this point the regulation had been passed, and the APERC dismissed the argument with reference to the Government of India order referred to above.
123. Although it is not mentioned in the final Open Access Order (Regulation 2 of 2005), in subsequent orders (O.P. 13 of 2006, p. 9) the APERC does make mention of a Government of India notification (08-06-05, SO 789 (E)) stating that no surcharge is required to be paid by companies that have existing wheeling contracts. It is unclear whether the APERC's decision to accede to the developers' requests was driven by this Government of India notification or was arrived at independently, since the APERC's decision followed less than a month after the Central Government's order, and the APERC makes no mention of this order in its final regulation. This is also discussed in Open Access Regulation (No. 2 of 2005) vide Clause 1(d).
124. APERC, O.P. 16, 2005, pp. 5–9.
125. Interview with consultant, 3 May 2006.
126. The APERC's discussion paper included a third approach – the difference between retail tariff of the consumer category and the average retail tariff – but this approach did not figure prominently in the discussions.
127. K P Rao, Submission to the Secretary, APERC, 5 August 2005. Obtained from APERC. He goes on to argue that since the APERC has evolved the practice of using the cost of service approach to tariff regulation, the same principle should be used to compute the cross-subsidy, which points to the embedded cost approach. Anything else, he suggests, will be seen as a blatant attempt by the APERC to change the methodology simply to provide advantage to open access and private generators.
128. While the APERC went through a second round of consultation and revision of this order following release of the National Tariff Policy, the substantive content of the order did not change (APERC, OP 13 of 2006).
129. APERC, O.P. 13 of 2006, p. 8.
130. Interview with senior regulatory official, APERC, 1 June 2006.
131. APERC, Business Rules of the Commission Regulations, Clause 53. Regulation 2, 5 July 1999. Available at www.ercap.org. Accessed on 18 November 2006.
132. Interview with Chairperson and Secretary of APERC, 1 June 2006.
133. Interview with Chairperson of APERC, 1 June 2006.

134. Interview with Chairperson of Energy Committee, FAPCCI, 25 May 2006.
135. Interview with senior APERC official, 1 June 2006.
136. Interview with Chairperson, APERC, 2 May 2006.
137. Interview with first Chairperson, APERC, 1 May 2006.
138. Interview with Chairperson, APERC, 2 May 2006.
139. Interview with consumer representative, 2 June 2006.
140. Interview with consumer organisation, 1 June 2006.
141. Interview with consumer representative, 1 June 2006 and industry representative, 25 May 2006.
142. Interview with industry representative, 25 May 2006.
143. Interview with consumer organisation, 1 June 2006.
144. Interview with consumer organisation, 2 June 2006.
145. Personal correspondence with K Swaminathan, Chairman of APERC, 4 January 2007.
146. APERC Tariff Order, 2000, p. 14.
147. APERC Tariff Order, 2001, p. 23.
148. APERC Tariff Order, 2002, pp. 29–32.
149. APERC Tariff Order, 2002, p. 84.
150. APERC Tariff Order, 2005, p. 65.

CHAPTER 2

Karnataka

The Difficulty of Parallel Regulation

Introduction

As in most Indian states, the power sector subsidy represented a growing thorn in Karnataka's fiscal budget, amounting to 2.1 per cent of Gross State Domestic Product (GSDP) by 2000-1. The Karnataka Government initiated a broad range of fiscal and governance reforms in the late nineties, of which power sector restructuring was only one, but significant part. The state promulgated the Karnataka Electricity Reforms Act of 1999 (KERA), an important component of which was the establishment of the Karnataka Electricity Regulatory Commission (KERC).

KERC has been in operation for seven years, during which time it passed five tariff orders (see Table 1) and over 30 regulations. It is midway through the tenure of its second Chairperson, which began in late 2004.

The KERC developed a reputation in its early years of being an outspoken advocate of consumer interest with a highly evolved, transparent governance structure. Along with APERC, KERC was also seen as a model regulator. In many ways, Andhra Pradesh and Karnataka had similar power sector characteristics and followed similar and contemporaneous reform

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This chapter draws on information obtained through interviews and documentary evidence. All interviews were conducted on a not-for-attribution basis. Consequently, while specific points obtained in interviews are referenced in a note, interviewees are only identified by their broad institutional affiliation.

Table 1: Karnataka Power Sector Characteristics and KERC Orders

	FY00	*FY01*	*FY02*	*FY03*	*FY04*	*FY05*	*FY06*
Tariff Increase (%)		16.85		16.2	2.89		–
T&D Loss Actual (%)	38	35.5	35.86	32.14	30.59	NA	NA
Subsidy Claimed (Cr)	1,213.1	1,820.8	2,231.3	1,903.9	1,623.3	1,873.00	1,726.30
Subsidy Released (Cr)	768.9	1,246.4	1,872.0	1,699.0	1,555.5	935.0	NA
Tariff Order Date Issued	NA	Dec 2000	NA	May 2002	March 2003 Dec 2003	NA	Sept 2005

Source: KERC Annual Reports

tracks, with World Bank assisted structural adjustment, institutional unbundling, and a strong governance reform initiative in the late nineties. However, the performance of the regulated utilities under KERC markedly differed from that of APERC. Costs increased, losses decreased slowly, and the subsidy burden increased.

The disconnect between a reputation of governance excellence and weak outcomes, and the divergence from APERC over time, made KERC an important case for this study and a point of comparison against AP.

Reform and Political Context

The power sector reforms followed two closely tied visions, one along institutional change towards privatisation, and the other along fiscal reform towards eliminating the power sector deficit. The Government of Karnataka set up a Special Secretary for Power Reforms and a Steering Committee, on which the KERC had a representative. Deliberations on both these policy directions started prior to, and continued into, the first tenure of KERC. This context would prove formative as policy developments along these two paths would overlap with the mandate of the KERC and circumscribe the role of the regulator.

The establishment of the KERC under the KERA fit within a broader set of institutional restructuring initiatives in Karnataka that envisioned the unbundling, corporatisation and eventual privatisation of distribution. The KERA ushered the vertical unbundling of the erstwhile Karnataka Power Transmission Company Ltd (KPTCL) into transmission and four distribution companies (ESCOMs), effective in March 2002.[1] The seeds of this vision were sown in the mid-nineties by the Administrative Staff College of India (ASCI) in two reports that laid both the foundation of the KERA and the regulatory framework for Karnataka.[2] ASCI later drafted the KERA, which drew heavily from the preceding Andhra Pradesh and Orissa Reform Acts.[3]

These reforms were catalysed, and in some cases triggered, by the World Bank's structural adjustment programme for Karnataka, the Karnataka Economic Restructuring Loan (KERL). The power sector reforms got significant attention from the World Bank, due to its concern for fiscal prudence. The World Bank provided technical assistance to the government through the appointment of the Financial and Distribution Privatisation (FDP) consultancy to assist in the transition.

The Karnataka Government signaled its intent for privatisation of distribution in an MOU with the Government of India on its power sector reform policy in February 2000, and in the following 2001 budget.[4] The government had hired consultants to develop a privatisation strategy, which was approved in late 2002.[5] The privatisation proposal, which included a proposed amendment to the KERA, came under significant controversy, and drew strong criticism from the KERC for allowing future private owners to easily bypass the regulator for cost increases. The KERC stated in a letter to the government 'the Commission recommends that it be kept in a state of suspended animation ... to avoid the completely unnecessary expenditure of around Rs 2 crore per annum on its maintenance and upkeep'.[6] Eventually, the government put plans for privatisations in abeyance. But this experience nevertheless soured relations between KERC and the government, and weakened the government's perceived commitment to the regulatory process.

While the impact of the attempted privatisation was eventually only symbolic, the second policy direction of fiscal adjustment set in place a set of directives that were akin to a 'parallel regulator'. The government mapped out a path toward eliminating the power sector deficit through the Financial Restructuring Plan (FRP) and the rolling Medium Term Fiscal Plan (MTFP). The FRP aimed to reduce the deficit from 2.01 per cent of GSDP to 0.8 per cent by 2004-5. It developed several short-term operational targets for the power companies to reduce losses from 37 per cent to 28 per cent in this time period, reduce theft, expand metering, and set investment budgets.[7] The MTFP provided commitments to meet the gradually reducing projected subsidies, and laid down effective 'upper bounds' on subsidy commitments by government.

Many of the specific FRP directives, such as loss reduction targets, directly overlap with KERC's mandate, while others set the bounds within which KERC would operate (such as investment and subsidy budgets). To the extent that the regulated utilities answer to their owners first, this overlap brings into question the usefulness and perceived enforceability of KERC's actions.

This overlap in oversight arises in part from the fact that the regulated utilities are state-owned. As owner, the government has already established methods of monitoring utility performance and operations, and planning future investments. This overlap with regulatory mandate manifests in formal

and informal ways. Besides the specific directives of the FRP and MTFP, in terms of general oversight, the Energy and Finance departments of the Government of Karnataka (GoK) and the advisor to the chief minister sit on KPTCL's board. In practice, such oversight is hands-on. As per standard internal procedure, utilities present their ERC filings to various levels of government before submission to the regulator, including the ministerial level.[8] The KERC was acutely aware of this conflict of interest. As a senior official rhetorically asked 'Will the MD [of the utility] listen to government or regulator?'[9]

Low Credibility with Incumbents

Since the KERC operated in parallel to an already entrenched and conflicting authority, the initial orientation of the KERC to the sector was all the more important. The government's lack of effort to establish the KERC's authority and relationship to the bureaucracy, ministries and utilities undermined the regulator's initial credibility, particularly in the eyes of the regulated utilities.

The KERC itself initially received mixed signals from the two governments as to its authority vis-à-vis the bureaucracy and related perquisites.[10] The KERC leadership was initially given to believe that the KERC would have significant responsibility and the 'government would be nowhere' in its path.[11] The KERC would stand by side with the Energy Ministry. However, the new government, elected soon after KERC's establishment, took a contrasting view. For example, it attempted to reduce the perquisites to the regulator, though the CM eventually withdrew the executive order that would have done so.[12]

The utilities initially perceived the regulatory agencies at best as superfluous and at worst as a threat. The regulator possesses powers of a High Court judge, but performs tasks that utilities felt they routinely conducted in-house.[13] Utilities reluctantly cooperated in the first tariff-filing process. That the government did not brief the incumbents on the purpose and benefits of the regulator quite likely contributed to this contempt. Ironically, consultants to the KPTCL claimed to spend significant time with utility executives and even bureaucrats, convincing them of the importance and need for engaging with the regulator.[14] Yet, their lack of cooperation continued, albeit at a more subtle level. For example, senior utility management avoided interaction with the regulator and sent junior officers to meetings in their place.[15]

Mutual wariness between the regulated and regulator is not uncommon, even expected. But in Karnataka it seems that the initial circumstances around the regulator's establishment set in place a particularly non-cooperative relationship. Another factor that greatly influenced the initial interaction between the two was the nature of KERC's staff and member composition.

In summary, government control of utilities remained strong due to structural aspects of state-owned utilities and their operating relationship with government, with fair overlap in oversight with KERC. The government's proposed privatisation structure and the lack of proactive efforts to orient the incumbent government agencies and utilities to the KERC sent mixed signals on the importance government placed in KERC. Taken together, a combination of symbolic and actual infringements on KERC's powers at the outset weakened KERC's legitimacy and alienated them from the rest of the sector. The first Chairperson's perception of his tenure sums up this impact: 'the regulatory system is an unwanted child'.[16]

Institutional Structure and Capacity

In newly established institutions, the approach of influential personnel plays an important role in moulding work culture, and the credibility of the organisation. In Karnataka, the first Chairperson and Secretary heavily influenced the image and culture within KERC. Stakeholders both outside and within KERC questioned the integrity of the member selection process. Staff were drawn largely from the regulated utilities. They came across as a small, well-knit cadre with a strong sense of solidarity and a perception of self-sufficiency. As the KERC began implementing provisions of the Electricity Act 2003 related to open access, the Director of Tariffs and a few junior staff assumed an influential role in drafting discussion papers and regulations. In this phase, the breadth of required expertise stretched the staff capacity to a point that may have brought up the limits of their culture of self-reliance. Although in most years KERC did not spend their budget of 2-3 crore, the scale of the task suggests that KERC could very well benefit from an expansion of resources if they were properly deployed.

Member Selection and Process

All the members of KERC came from government. Given the influence of individuals within State Electricity Regulatory Commissions (SERCs), the Member selection process gains importance. Of primary interest is the independence of the process from external influence. As in all states, member selection entails a two-step process, involving first a short-listing of two candidates from a pool of nominees by the Selection Committee, followed by a final appointment by the chief minister. The transparency of the process rests, therefore, on the Selection Committee's process of short-listing. The KERA has broad and general bases for selection that focus on candidates' independence and on ensuring candidates fill technical roles, one from engineering and two others from law, finance and economics. The KERA includes no formal requirements for the method

and final justification of candidates or their publicity. That the Selection Committee consists of members of the bureaucracy (including the Chief Secretary and Energy Secretary) and is chaired by a member of the judiciary shields the process from political interference, at least in theory.[17]

We interviewed several government officials and ERC members to understand people's perception of the process and its efficacy. Two government bureaucrats and one member expressed suspicion that the government influenced several appointments. One member spoke unequivocally of the manipulation of another's appointment to counter strong voices in the Commission.[18] In the case of staff, although the KERA places the responsibility of staff appointments with the Commission, the government on occasion (as discussed later) has recommended staff appointments and threatened withdrawals, such as suggesting a Secretary appointment.[19]

Whether founded or not, the overwhelming perception of government interference in the selection process of regulatory Members and Directors indicate a lack of transparency and general mistrust of the selection process. If these perceptions are accurate, regulatory institutions run the risk of absorbing candidates who may feel indebted, or have a history of compliance to governmental authority. This could manifest as a lack of willingness to issue directives or orders that carry politically unpalatable consequences.

KERC Composition and Selection

The KERC drew staff almost exclusively on deputation from the utilities (see Table 2). The first Chairman considered it important to hire staff from within the state, and take advantage of the 'old boys network' by hiring those familiar with and having networks in the utilities. Most key (Director level) staff were hired from KPC, but had also previously worked at KPTCL. After a few years, KPTCL staff were taken as consultants for more specialised positions (e.g. investment, distribution). Officials stated that they did

Table 2: KERC Composition and Characteristics

Parameter	*FY00*	*FY01*	*FY02*	*FY03*	*FY04*	*FY05*
Total Staff	16	25	32	32	30	28
Staff (Non-Administrative)	8	6	11	12	13	12
Utility Background	8	6	10	11	12	11
On Contract	3	3	6	7	6	3
Total Budget (Lakh)	49.5	294.3	233.6	215.2	200.2	193.9
Consultancy Expenses (Lakh)	15.2	21.75	1.66	9.47	5.0	
Vacancies	4	6	2	2	2	2

Staff are either on contract (consultant) or on deputation. No permanent staff

advertise for non-governmental applicants. However, they were unable to attract enough applicants with suitable qualifications.[20]

As Table 2 shows, KERC had no permanent staff. Directors were on deputation from utilities, while other specialists were hired full-time, but on a contract basis. At the same time, KERC built its staff to near full capacity in two years, after which they maintained a low vacancy rate of 2 positions.

Staff selection in general shows that the regulator relies heavily on utility personnel from the former Karnataka State Electricity Board. To what extent this reflects the applicant pool and hiring strategies could not be determined. The implication of a utility-dominated staff will be discussed later in this report.

Institutional Culture

The Secretary, supported by the Chairperson, established a culture of self-reliance and transparency that remains with KERC to date. Many regulatory staff concurred with this view. KERC developed a Consumer Right to Information regulation in 1999. It is the only SERC in India to have created an Office of Consumer Advocacy. The KERC seems unique amongst Indian regulators for its sparse use of consultants. Moreover, the entire staff stood out as a well-knit, coherent cadre with similar outlooks on their responsibilities.

After being dissatisfied with their first experience with consultants for the first tariff order, the Commission put in place an unwritten policy to write their own tariff orders and rules, and conduct supporting analysis and research themselves. They hired consultants for specific analyses and field research on a one-off basis. KERC has hired as an in-house employee only one non-utility financial consultant on a contract basis. Due to their emphasis on self-sufficiency, KERC put significant effort into capacity building of all staff and members. All staff attended multiple conferences or training sessions over the course of their deputation, according to their Annual Reports. KERC regularly sent staff to training sessions organised by The Energy Research Institute (formerly Tata Energy Research Institute) and Administrative Staff College of India. Senior staff also attended international training seminars, which were either in the US or conducted by USAID or US regulators in India.

The KERC at the outset made transparency part of their modus operandi, by taking seriously the annual reporting requirement and maintaining a relatively well populated web site. The Commission included in annual reports all formal communication between government and the Commission, as well as tabulation of all training activities.

Another important stance was to promote the consumer interest as a

fundamental responsibility of the Commission. One senior official stated that they entered a sector with an inherent and long-standing bias toward government, given the Indian tradition of state-owned utilities. This made it incumbent on them to protect consumers' interests.[21] Even though all staff did not share this, it appeared to prevail.[22] That this stance manifested in KERC actions as well reflects no better than in the KERC Chairman's comment that the utility complained of the KERC being 'hijacked by the consumer'.[23]

Thus, key personnel created a culture for the KERC based on their convictions, competencies and personalities. These had a long-standing effect, although regime change brought in some changes, as discussed subsequently.

Tariff Review Process

Regulatory Style

The absence of a formal structure for regulatory process has strongly influenced the regulatory style of Indian regulatory institutions. Procedures set in place through the Conduct of Business Regulations (CBR) or the Electricity Act lack the detail to offer guidance to the Commission. For example, technical validation sessions are not mandatory. No requirements or procedures have been laid down for the nature of interaction between utilities and the regulator. No specific requirement guides the documentation or disclosure of meetings. For example, the CBRs have guidelines on the above for KERC proceedings, which the regulators interpret as formal court proceedings or public meetings, not all internal meetings.[24]

In the ARR process, the procedures for obtaining and analysing data and interacting with the utilities are critical, since the regulator relies on this information to effectively regulate costs. Without formal procedures, regulatory style evolved from the ideas and motivation of key personalities, and their exposure in training to other regulatory models. The KERC developed a process culture based on self-reliance, with occasional use of consultants. Procedural aspects of the regulatory process, such as the format of tariff orders, and in-house financial models, persist to date, in part due to staff continuity and habituation to procedures set in place. By the same token, other softer aspects related to interaction with utilities changed under the second Chairperson.

Culture of Self-Reliance

KERC stands out as a regulator that produced four tariff orders (including an Amendment) and several regulations without retaining a full-time consultant. They built and have retained till today this culture of self-reliance,

with occasional use of consultants for either specific expertise or for field research. This culture was bred not just from a wariness of consultants, but also from the personalities present in its formative first few years, as mentioned earlier.

The reluctance to use consultants stemmed from their experience with an initial consultant hired to produce the first tariff order. The experience fell short of their expectations due to, among other things, the consultant projecting an unrealistic loss reduction trajectory for the utilities.[25] Following the experience, the staff developed the financial models for the ARR calculations in-house.[26] According to the utility consultants, the KERC also had access to the models used by the utilities in preparing their ERC filings, and interacted with them often.

After this initial dissatisfying experience with consultants in the first order, KERC did not use a 'side-by-side' consultant again, except on a one-off basis for specific tasks. As a result, consultants played a far smaller role in KERC than in Andhra Pradesh and Delhi. The expenditure on consultants alone suffices to show this. KERC has spent about 0.5 crore total to date.

The culture of self-reliance persevered past the terms of its initiators into the second regulatory regime (see Table 2). Key staff, such as Directors whose deputations straddled the two terms likely influenced this carry over in culture. This persistence is notable in light of the significant increase in their responsibilities that accompanied the Electricity Act, on matter such as open access, trading, and quality of service, which have their own separate expertise and knowledge requirements. Furthermore, a small subset (2-3) of the staff bore the bulk of this additional burden. Not surprisingly, staff feel the pressure of acquiring expertise to keep pace with their rule-making function.[27]

In supporting their analyses, KERC staff relied indirectly on external sources of expertise consultants hired by other entities (such as the regulated utilities) or government planning and policy documents. Notably, many of these sources – government reports, utility consultants, and expert committees – are drawn from government, and specifically the electricity establishment. This may derive from the utility-dominated composition of the KERC and their own preference for known entities/persons. For example, in the early years, KERC staff consulted Government of Karnataka Plans (MTFP, FRP) for benchmarks on loss reduction. They relied in part on Ministry of Non-Conventional Energy Sources calculations of supply costs from renewable energy technologies, in addition to government approved charges, to arrive at their own estimates. To review transmission, KERC often relied on reports prepared by KPTCL's primary transmission consultant. As one staff member mentioned, they use its report as their 'bible'.[28] In the open access rule-making process, KERC also consulted developments in other regulatory institutions, particularly APERC.[29]

The two chairpersons saw varying roles for these external consultations. The first Chairperson saw consultants as filling 'expertise-gaps'.[30] He formally hired consultants on a few occasions to conduct studies, but also invited experts informally to make presentations, particularly on new market-related issues brought on by the Electricity Act. The second Chairperson saw them as a source of credibility.[31] For example, he hired a consultant to conduct study on agricultural pump sets with the intention of extrapolating the (expectedly lower) estimates of agricultural consumption to Karnataka at large and incorporating them into tariff orders. He stated that this study provided a basis to credibly challenge utilities' consumption estimates, which are known to be inaccurate. A similar argument justified the use of an expert committee to approve a large investment proposal (see section 'Investment').

In summary, the KERC opted to develop tariff orders and regulations themselves, where they drew on external sources of expertise at their discretion. This style continued despite the increase in complexity of the regulatory tasks after the Electricity Act. This approach contrasts with other states we studied where regulators rely heavily on consultants. This approach enabled significant growth of staff, who were forced to acquire expertise in new areas. Annual reports reveal that KERC invested heavily in their training. This investment would reap greater benefits with permanent staff. However, without them, the institution always runs the risk of losing acquired knowledge with departing staff. The potential trade-off of relying on internal staff is that the knowledge base within the KERC is constrained by the staff's background, networks and their motivation to seek out alternative sources. Second, as developed in later sections, the regulator may be less inclined to pioneer approaches, and defer to those with established precedents, or which are specified in policy.

Arms-Length Review Process

The modus operandi of KERC in the ARR process can be summarised as analytical more than investigative. In the words of a senior official, 'it is not regulators' job to conduct its own micro-studies of energy estimation'.[32] The Commission and staff rarely ventured into the field or conducted field visits to verify data submitted by the utilities (but for meetings with distribution companies). As with most states, the uncertainty in agricultural consumption was the Achilles heel of all tariff orders. Yet, in its tenure to date, the KERC has only undertaken two field studies of agricultural feeders', the first was too small and unreliable to use in a formal order, and the second was undertaken only in its sixth year (see section 'Agriculture Consumption Estimation').

Instead, KERC staff focused on studying the ERC filings, ensuring consistency with past filings, validating data and checking calculations.[33] Utility staff and their consultants acknowledged that KERC staff were

thorough, asked the right questions, and in the early years were highly interrogative in technical validation sessions, walking through documents separately with personnel from each relevant department.[34] The overall impression was one of competence and reasonable adherence to procedure.

But stakeholders also had the impression that the KERC didn't probe below the surface of ERC filings, or conduct enough pilot studies in the field.[35] Government and KPTCL officials claim that despite the proactiveness in target-setting, the regulator has not been able to break into the systems of subversion and data concealment that permit inefficiencies to persist. One government official with several years of experience in Karnataka stated that regulators do not lack the capacity to make such breakthroughs. All it requires is for them to trace specific projects, identify specific areas and demand data on them from the field. However, the real reason for this failure, he claimed, is the lack of regulatory will to disturb the institutional setup.[36] A KPTCL official agreed with this position, citing the lack of evolution in the method of data collection over the years. A few sophisticated consumers with a good perspective on reforms indicate that they have learned that regulators focus more on tariff-related issues and avoid fundamental reforms. They indicate regulators could easily conduct more field visits, estimate IP set consumption, and understand consumer grievances and track implementation of their own regulations and directives.[37]

Thus, the overall process of scrutiny in ARR process can be characterised as relying on limited internal staff for resources, and on ERC filings more than on investigative research. On this basis, staff conducted thorough, but limited analysis, focusing on internal self-consistency rather than on comparison with external benchmarks.

Stakeholders perceive the regulator as increasing its tariff setting role in process but not in spirit. That is, regulators exercise restraint in exploiting their powers to the extent necessary to bring about institutional change in the regulated utilities.

Relationship with Utilities

There are indications that relations between KERC and the utilities were strained from the outset. As discussed earlier, the utilities were initially resentful of the regulator and reluctant to participate in the regulatory process. Perceptions of the first Chairperson as high-handed coupled with his inexperience with the sector, caused relations to remain distant and sour through the first tenure.[38] This may explain why the utilities challenged the regulator's orders in court, rather than seeking an alternative way of resolving disputes. Junior staff, though wary of the Chairperson's authority also respected the procedural thoroughness the KERC brought to technical validation sessions and formal hearings.

The second Chairperson's image was the opposite, a person with a career in the energy sector and who employed a less formal approach. In his tenure, the nature of interaction changed. Technical validation sessions in the ARR process all but vanished.[39] The regulator and utilities had clashes, but over substantive issues. Otherwise, relations were maintained, interaction was informal. Senior directors and the Chairperson were known to each other, since the Chairperson was Energy Secretary during the tenure of the first Chairperson. The consequence of this congeniality was a less strained relationship with utilities, but the second Chairperson was also seen as more sympathetic to the utility perspective than was the first Chairperson,[40] as discussed later in several sections.

In conclusion, KERC illustrates a workable model of tariff review in India without dependence on consultants. But this process evolved and varied with changes in leadership. Some of these developments, such as the de-emphasis of technical validation sessions, may risk loss of scrutiny. On the other hand, the awkward relations between the utility and Commission in the first regime reduced cooperation, which exacerbated information asymmetry. We observe similar variations in the implementation of the participatory process in tariff review. The degree of continuity in the review process due to the continued presence of senior staff from the early years may not be sustained when KERC staff return to their utility postings. The salient lesson from KERC's internal tariff review process is that the absence of a more formal structure in procedure reduces institutional memory and its capacity to build and establish effective review practices. Such formal rigour can also provide a legal basis for greater proactive action than simply relying on regulatory discretion.

Agricultural Consumption Estimation

The first challenge of KERC, as with other regulators in India, is agricultural consumption estimation. The KERC's approach was arms-length, adjudicatory, and ultimately not very effective. The KERC took this role seriously and industriously at first, summoning data, holding a public hearing, issuing numerous directives to meter IP sets and improve estimation. But these efforts met with little success. For example, the KERC directed ESCOMs to provide sample metering on distribution feeders, as well as on individual irrigation pump sets on the sampled feeders so that actual line loss and IP set consumption could be estimated. While deploying a sound method, KERC could not get the ESCOMs to provide adequate data to comply.[41] The Commission expressed frustration at changing methodologies and numbers provided by the utility in response to their requests.[42]

In the absence of any reliable data, KERC was forced to rely on utility estimates, knowing their unreliability. The second Chairperson expressed a grudging impotence at the ability to expose obfuscations within the utility without credible data.[43] This reliance has continued until 2005, when the KERC has initiated its first comprehensive independent study of IP set consumption.

The regulator has been strict in issuing directives to improve IP set consumption estimates, introduce better distribution meters and reduce unauthorised connections. However, officials at KPTCL and government indicate that these corrections are superficial.[44] For example, in the FY 2006 tariff order, KERC rejected an estimate correction in IP set consumption because BESCOM failed to correctly calibrate meters. KERC ordered BESCOM to recover the deficit resulting from this rejection from increased collection revenues. Several such instances indicate ostensible progress in forcing transparency in agricultural consumption. However, KERC has not attempted to determine IP set consumption directly at a field level until its FY 2005 study. KERC had conducted a cost of service study in 2002 that did produce sample consumption estimates as a by-product, but staff did not consider these reliable.[45] Several farmer groups have pointed out that based on their consumption patterns (e.g. months of usage) and number of IP sets, the estimates appear exaggerated.[46] But the tariff orders do not contain any discussion of these to indicate that they were noted or followed up. Apparently the extent of error/deception in these estimates may exceed what KERC used in tariff orders. KERC has been aware of this, according to the regulator and farmer representatives.[47]

Only in 2005 did the KERC hire a consultant to undertake a one-year study to monitor actual agricultural consumption at the feeder level on a select set of feeders that fed primarily pump sets. Special meters were installed on these feeders (owned and operated by the ESCOM). The consultant was to independently read these on a daily basis, and from this compilation and the profile of IP sets on each feeder, estimate IP set consumption. At the time of conducting this research, KERC received its first set of data from the consultant. The KERC stated they studied the data submitted, but didn't doubt or check the veracity of the actual readings. At the same time, a distribution company official stated that they had been providing KERC's consultant with data from their newly installed meter reading software for agricultural feeders calling into question the independence of the consultant's estimates.[48] Interviews with various utility and KERC staff revealed an apparent confusion in the extent to which the consultant relied on utility data.[49]

The point of interest here is that KERC may not have had a pulse on the implementation details of the project. The lack of staff capacity to

undertake field-level scrutiny may explain this, among other factors. But it also reflects an underlying disinterest in hands-on monitoring, which seemed to stem in part from an implicit faith in the consultants' and utilities' competence and integrity.

One senior bureaucrat offered another explanation, which had to do more with an interpretation and implementation of the regulatory mandate. In its very design, he notes, the exercise fails to capture the larger, endemic problems with IP set consumption errors and their policy implications.[50] Such a study does not address the root of estimation errors, the political motivations behind them, and their implications. In other words, the KERC appears to carry out its role in the agricultural consumption as a technical exercise, not one laden with political content. This is one example where the regulator has to embrace the role of an agent of institutional reform if it is to root out the malaise of the agricultural sector. Perhaps this may be an unreasonable expectation of a nascent regulator, especially without political support toward this end. The encouraging aspect of KERC's proactive efforts, though, is that they brought out the utilities' clear attempts at obfuscation, and have reduced the margin of error in estimating agricultural consumption.

Performance Review

Performance review entails the regulation of utilities' year-to-year financial performance, which includes overseeing operating and related upgrade costs and collection (on the revenue side). The underlying purpose is to discipline utilities to improve performance and financial viability of the sector. The parameters of interest here are transmission and distribution loss reduction (both commercial and technical), capital investments in upgrading the grid, and general, indirect management-related investments (such as metering, and energy management systems) to improve monitoring and auditing. Utilities have been able to conceal their inefficiencies because of an impenetrable system where data are not generated and maintained, let alone shared. From the outside, agricultural consumption cannot be distinguished from unauthorised usage or technical losses. Thus, this function requires regulators to penetrate an established, entrenched institutional culture.

In assessing KERC's regulation of utilities' performance, we are primarily concerned with understanding how KERC went about this process, what forces and influences drove this process, and what impact they had.

The KERC inherited a utility system devoid of proper monitoring systems and data, and with loss estimates that the Commission judged as unreliable.[51] At the same time, left with few alternatives, the regulator had to use assessments by the utility or its consultants as starting points and force improvements in data management for subsequent years. The Commission in its 2000 order best expresses this dilemma:

'While the Commission agrees that this represents a very unsatisfactory state of affairs, the Commission has had to take a realistic view of the entire situation. It would not be practical for the Commission to insist on setting right all the numerous deficiencies in the statistical data base of the KPTCL before taking up its ERC and Tariff filings for consideration' (Tariff Order 2000).

The first tariff order shows considerable analysis and assimilation of different data sources to assess a reasonable starting point for a breakdown in transmission *vs* distribution, technical *vs* commercial losses, and agricultural consumption *vs* actual losses. At the outset the Commission directed the utility to submit loss-related data in 46 towns in Karnataka (which was in FY 2005 expanded to 54) in order to develop a benchmark for urban distribution losses. However, they relied on data provided by field offices, despite their known unreliability. Based on these data, they directed ESCOMs to reduce distribution losses in these towns to below 15 per cent.

Right from the outset the regulator issued stern performance-related directives to the utilities. Indeed, these were so comprehensive that in subsequent years tariff orders dealt mainly with their monitoring rather than new issuances. These directives dealt with some of the vital lacunae in utility customer management, such as metering, auditing, IP set consumption estimation, and management information systems. The regulator directed the utilities to take up studies to determine the cost to serve for each category of consumers. In addition, the regulator issued loss reduction requirements, as shown in Table 3. In the initial years, the KERC relied on the government's own loss reduction estimates, as reflected in the FRP, but staff claim these quickly got outdated.[52]

Table 3: KERC Loss Reduction Measures

	FY00	*FY01*	*FY02*	*FY03*	*FY04*	*FY05*
T&D Loss ERC Proposed (%)	38.0	36.5	34.1	32.0	30.6	29.8
T&D Loss Approved (%)		31	31	28	28	
T&D Loss Actual (%)	38.0	35.5	35.9	32.1	30.5	

In summary, the initial stance of the KERC was proactive, reasoned and set a tone of seriousness about its business.

Poor Directive Compliance

Figure 1 tracks directive compliance over time. Most directives were issued in the initial year 2000, and a few additional ones in FY 2002. Thereafter, no substantively new directives were issued. According to KERC's tracking

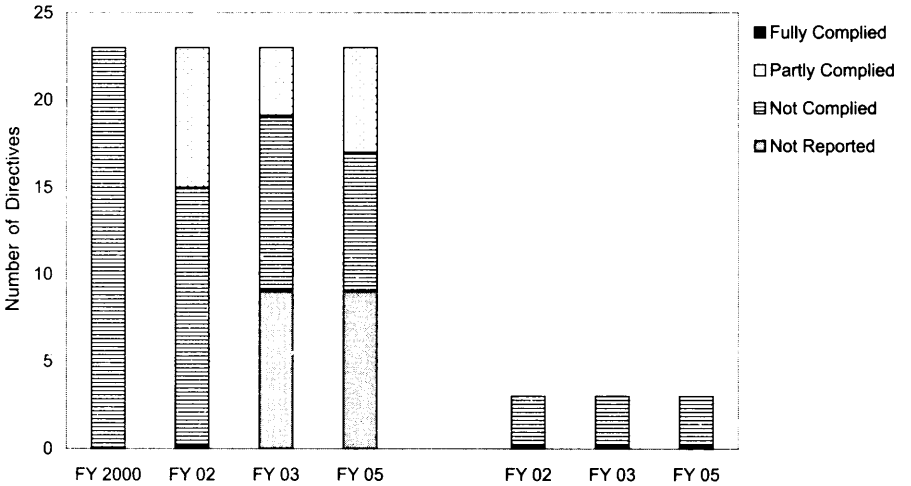

Figure 1: KERC Directive Compliance

Note: Each cluster of bars tracks compliance and reporting status – fully complied, partly complied, not complied and not reported – for directives issued in the first year of the cluster. Thus, the first cluster of bars tracks and reports on directives issued in FY 2000, and the second covers FY 2002. The data are drawn from successive years of KERC tariff orders.

in tariff orders, no directives were fully complied with to date, and less than half were partly carried out. As mentioned earlier, KERC initially took a strong stance against noncompliance, which waned over subsequent orders. A senior KPTCL official stated that they had inadequate incentives to implement many KERC directives. He suggested that many KERC directives were good suggestions, but not high priority to them, because they wouldn't enhance their revenues (for example, IP set metering), and therefore to them represent wasted investments.[53]

Improvements in certain parameters regulated by KERC, however, would benefit the utility, such as loss reduction. This also shows consistent underachievement with KERC's targets (Table 3). Notably, in FY 2003, the utilities showed a turnaround for the first time in losses. This was driven by improvements in MESCOM and BESCOM - particularly urban Bangalore - while performance stayed the same or deteriorated for the other companies.[54] Not surprisingly, these areas represent areas of rapid growth and high-revenue customers. The CMD of KPTCL stated that these improvements were entirely driven from internal management decisions - KERC 'had nothing to do with it'. [55] He cited as an example a transformer audit they initiated, without any directive by KERC. He felt that KERC has not had much of an impact on the ground.

Enforcement

Very quickly the Commission found that its orders and directives were either challenged in court (in the former case) or ignored (in the latter case). Subsequent orders saw the Commission use sterner language, threatening noncompliance with future rejections of tariff filings.[56] But these were never carried out. The most KERC did was to write a strongly worded letter to the Energy Secretary, summarising the utilities' consistent underachievement of targets and asking for the government to take action. [57]

When questioned on the lack of enforcement of the Commission's threats and directives, the first Chairperson commented that utilities did not make reasonable efforts at compliance. But he also seemed to have been at a loss for enforcement measures. He was against using punitive measures, because he felt then 'the sanctity is gone'.[58] Senior regulatory staff, who felt that placing punitive measures on government-owned companies would be akin to penalising the public, echoed this sentiment. The second CP stressed that punitive measures would only burden paying consumers.

As a pragmatic matter, punitive orders would likely end up in court and have stay orders issued, as with many KERC orders. He did mention that with government support utilities could have been threatened with punitive measures. But in Karnataka, the government did not have the backing and platform for dialogue with utilities and government that Naidu created in AP.[59]

In the second regime, even the pretense of threat in tariff orders was replaced by factual notings of noncompliance and reiteration of directives.[60] Noncompliance persists for years, with few showing progress towards compliance, as would be expected from the utilities' ubiquitous response that the directives were of a 'continuous nature' and being slowly complied with.

The regulatory tone in tariff orders, lack of government initiative on the matter, and utilities' response, all point to a perception that the Commission's attempts at forcing performance improvements are futile. Weak enforcement makes it difficult for the Commission to make demands on utilities. But their unwillingness to exploit their powers to their full extent, such as in using their investigative judicial powers, also emerges. They are reluctant to implement drastic enforcement mechanisms, such as rejecting tariff proposals and imposing fines, based only on noncompliance. In no small measure, this futility comes from the lack of government support of the regulator, and likely exacerbated by the absence of cooperative dialogue between the utility and government and the regulator. The senior regulatory official stated that 'strengthening regulation is not possible while the utility remains a government company'.[61]

Investment Review

Capital Expenditure (CapEx) review is the most challenging, yet influential, function of the regulator. As in Andhra Pradesh, distribution networks in Karnataka are underinvested and poorly managed. Technical loss reduction requires network upgradation. Theft reduction and better management require system to monitor, retrieve and analyse information about the physical grid and usage. Despite these imperatives, investments may lack cost prudence through poor planning or if politically initiated. The simultaneous conditions of information asymmetry, genuine need and political pressure make CapEx review particularly challenging. The difficulty in estimating project benefits further compounds review complexity. In some cases, the data doesn't exist to allow benefit assessment (e.g. loss reduction), and in other cases, the benefits are indirect and diffused Thus, we investigate here the bases regulators use to scrutinise CapEx and tackle political pressures.

Technical Review

Investment review suffers from non-transparency because it lies partly outside the tariff review process. This allows for sufficient discretion for KERC to devise its own approach to scrutiny. Consistent with its overall proactive, authoritative approach at the outset, KERC took an initial approach of reviewing every scheme. They appointed an expert committee to conduct this review. KPTCL complained of micro-management, and pushed back strongly on KERC's review process.[62] Very soon, KERC and KPTCL negotiated and agreed to limit scrutiny to projects above a threshold (Rs 5 crore for transmission, 1 crore for distribution).[63]

KERC have one to two in-house staff dedicated to review project schemes. Their review focused on budgets, calculations and procedure.[64] They check calculations for consistency, verify equipment costs against Schedule of Rates, assess practicability of budget proposals based on historical expenditure, and identify procedural errors. For example, KERC returned all seven of KPTCL schemes in Tariff Order 2005 on procedural grounds. As in AP, the grounds for modification usually revolved around procedural errors, unrealistic implementation schedules and annual expenditure targets.

KERC documents in its tariff orders the schemes submitted for approval, and KERC's ruling along with their rationale. However, they do not contain detailed descriptions of the schemes, their justification or their cost-benefit analysis.

With regard to substantive aspects of review, it appeared that the KERC struggled to get a good handle on utility investments financing. They would spot inconsistencies in project budgets and capitalisation, but could not trace

their origin. For example, the first Chairperson mentioned that many projects showed time overruns, but also under spending. This could only mean money from projects was being diverted, but the regulator could not trace diversions.[65] A utility senior official summarised the problem as one of regulators not tracing projects 'from source to implementation'.[66] He claimed that if regulators were to trace the money on individual projects, they would reduce fund diversion, and significantly enhance the accountability of project implementation.

Regulators similarly do not evaluate whether projects deliver intended benefits. Such ex-post project tracking is absent from tariff orders. Insufficient resources and information asymmetry play some part in this. Some government and utility officials interviewed perceive regulatory staff as having sufficient knowledge and expertise to conduct or supervise investigative research to identify project irregularities. The regulator could also have hired third-party auditors, but the regulator chose to err on the side of caution.[67] And the caution was exercised in not alienating government, or in not risking an 'anti-reform' image with the public. The first Chairperson, therefore, chose to 'pick battles, look for the investments that stand out'.[68] The second Chairperson stated that they risk tarnishing their public image if they appear to contradict political promises and inhibit much needed reform.

In Karnataka, both regulators were sensitive to political pressures. The first Chairperson revealed a self-regulated pragmatism to challenge the government within bounds, which led to a selectively proactive, but overall cautionary stance. In the second tenure, the Commission faced overt pressure and demonstrated a conciliatory mindset towards investment review. Nowhere is this pressure more evident than in large investment projects. Both regulators indicate that for such large projects, regulators must consider broader ramifications of their decisions.

Large Investments: Carefully Treading

Conspicuously large projects undergo a different review process, having higher visibility and importance. Decision-making here becomes more political and less technical, due to higher stakes.

The first regulator received only one major proposal from KPTCL, involving an investment budget that would have almost doubled its asset base.[69] This proposed scheme came directly from the government through a Government Order.[70] The Commission chose to pick this battle, due to its unprecedented size. He sent regulatory staff to the field to examine the cost-benefits of the proposed scheme (Own-Your-Transformer). They eventually rejected the scheme, after finding that the payback period proposed by the utilities was ambitious and unrealistic.[71]

In the second regime, two projects reveal the political nature of decision-making. The first project involved installing microcontrollers on distribution feeders in agricultural areas to allow operators to remotely regulate supply to IP sets.[72] For several months, KERC interacted with BESCOM seeking clarifications and project details, culminating in a request to the utility to conduct a one-year pilot before seeking approval for the project.[73] In interviews, the staff stated a concern for the potential sabotage of such devices based on similar experiences in AP. The utility did initiate a pilot, but put repeated pressure on the Commission over several months to approve the entire project, citing Board approval and third-party studies of benefits from similar projects, culminating in a long, strongly worded letter from the KPTCL to the Commission, accusing the Commission of retarding the development of the sector.[74] The Commission responded to this letter with an immediate approval, with no justification for its turnaround.[75] Internal memos show that one member, until the receipt of this letter, expressed opposition to the project in the absence of a full pilot study.

In another project, involving a 2,700-crore transmission investment in a year (in this case, over five times the level of any previously realised annual investment), the regulator faced overt and immediate political pressure to approve the project, but the unprecedented nature of the investment also behooved a thorough review.

The Commission chose a path pursued earlier of setting up an expert committee. This committee gives the regulator 'some semblance of credibility' in reducing what everybody knew was an impractical level of investment in one year.[76] Many aspects of this project and its review suggest that the Commission's review process was a political balancing act as much as an independent, technical review. First, many sources within government and the KPTCL (preferring to remain anonymous) implied that the project developed from a politically motivated investment thrust onto KPTCL, with one source referring to it as 'campaign finance'. In such cases, KPTCL engineers would select projects to fit the spending directive. A senior official at the Commission mentioned that the government placed pressure on the regulator upon formation of the committee.[77] The Commission was made aware of the stakes.

The Commission constituted the committee with a strong utility representation. A retired bureaucrat who ran the utility for many years chaired the committee. He spoke of having faith in the fundamental premise of the proposal, and believed his role was to lend a dose of pragmatism to the project.[78] One other member was a representative from the consulting organisation who drafted the proposal. His role, according to the Committee Chair, was to provide data for the review. The third member was a former member of the KERC. That the background of the first two represented a

potential conflict of interest did not seem an issue to the Chairperson or the regulatory staff. The Committee's expert report recommended staggering the project's implementation, reducing the annual outlay from 2,700 crore to 1,750 crore on practical grounds, but did not question its fundamentals.

Although the Commission held a hearing on the matter, many interveners claim their objections and information requests were not responded to or incorporated by the Committee in its final report or in any other forum.[79]

Yet, despite the apparently lenient pushback on the project, the KPTCL interpreted the KERC's ruling as outside the scope of its mandate, and successfully challenged its order in the Appellate Tribunal.[80] This verdict is crucial. It is the first judicial interpretation of the regulatory commissions' mandate regarding investment review, and contradicts the practice and implicit understanding of most regulators to date of capital investment as a critical component of tariff, and therefore well within the regulator's purview.

In summary, the KERC had to contend with explicit infringements on its independence in regulating investments, and it did so with an undercurrent of seeming reluctance to challenge investment fundamentals. The review process in both regimes reflected an underutilisation of the Commission's potential for scrutiny, independent review and investigative powers. Technical aspects of projects were left alone, budgets and rates of implementation were tempered based on defensible, safe grounds, such as historical expenditure.

Both Commissions were also mindful of the public image of the regulator. They compromised scrutiny in part to avoid appearing 'anti-development'. In publicly visible projects, the Commission made sure that it satisfied expectations of its mandate, by setting up a Committee, and downsizing the investment, but within safe bounds. Stakeholder intervention appeared to be treated perfunctorily, such as by documenting schemes in tariff orders, but not scrutinising them publicly, and by holding a hearing for a large investment but being unresponsive to interventions. If the Appellate Tribunal decision is an indication of the prevailing mindset, regulators face an uphill battle in interpreting, let alone implementing, their mandate with respect to investment review.

Tariff Setting

Tariff setting is usually the most political of all regulatory activities, and the most visible litmus test of a regulator's independence. In Karnataka, KERC has had to contend with a poorly functioning utility with heavy outstanding dues to the government, and a sector with a reputation of heavy-handed government involvement. In this environment, KERC's greatest challenge was to demonstrate autonomy in tariff setting. KERC's approach to tariff setting included an aggressive protection of its tariff-setting autonomy, as

well as an aversion to raise tariffs after an initial controversial set of tariff hikes.

KERC approved two consecutive tariff increases of over 16 per cent each (2000, 2002) on average, with 60 per cent increases or more for subsidised categories, followed by a 2-3 per cent increase in 2003. This led to agitations across the state.[81] Since then, it has not increased tariffs. However, these increases represented substantially lower levels than those proposed by KPTCL in its filings, which were closer to 30 per cent. It met the discrepancy through a combination of cost reduction, loss reduction targets and power purchase adjustments. Despite this, tariff increases were met with significant opposition, particularly in rural areas in all its early tariff orders.[82]

In subsequent orders, it seems that the KERC avoided increasing tariffs. The agitations likely contributed to this caution. Moreover, given that up to that point KERC had approved a cumulative increase of over 40 per cent, and that the public complained from the outset of having to pay for utilities' inefficiencies, the Commission would have been hard pressed to justify further cost increases without suffering political damage. In some cases the Commission 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 led 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.

Aside from actual tariff movement, KERC did assert its authority strongly in the tariff setting process, in cases overstepping its own boundaries. The KERC made clear in its early orders (Tariff Order 2000) its interpretation of the delineation of responsibility between KERC and the government. KERC moved costs toward average cost for all customer categories in keeping with its obligations under the E-Act. But it rejected pleas from the public to calculate tariffs based on income, deferring this issue to the government as a policy matter. At the same time, recognising the poor targeting of subsidies as potential discriminatory pricing – a matter within its ambit – it attempted to define a methodology to create differential tariffs within farmers, to identify a 'creamy layer'. This was met with significant opposition, and was challenged in court. This position reveals another instance of a proactive position. By experimenting with a methodology for differentiating farmers, it ventured into a grey area of policy in a controversial area and without much precedence. This stands out as an exception to a general reluctance to proactively make policy.

KERC also resisted publicly, in the first regime, perceived infringements of its tariff-making authority to manipulate prices for political gain. For example, KERC rejected the government's lower estimate of Bhagya Jyoti (BJ)/Kirit Jyoti (KJ) consumption for subsidy estimation, and instead used

its own estimate.[83] The government had also issued an order to lower the rate category for the information technology sector, which the regulator challenged and eventually succeeded in having it withdrawn. Both these also arguably fall in the grey area between policy and tariff setting, but nevertheless reveal a clear signalling by the regulator of its domain.

In other less ambiguous cases, KERC fought an uphill battle against frequent government actions that undermined its credibility. Some cases were not as ambiguous as the above examples. In February 2005, the government passed an order to modify the tariff for wind power plants, in direct contravention of KERC's January 2005 order. The government also directed the utilities to disobey KERC's orders to charge subsidised customers higher tariffs, even as it withheld subsidy payments toward them.[84] Given conflicting directions from two governing authorities, the choice was apparently clear to the utilities - obey your owner.

In the second regime, the Commission also forayed into policymaking, but less openly. The Commission initiated an unprecedented initiative to differentiate tariffs between urban and rural areas, by nominally increasing tariffs for select categories in Bangalore urban, on the basis that they enjoyed a higher quality of power. This followed an unsuccessful attempt to formally introduce differential tariffs across ESCOMs through a discussion paper and public hearing, wherein government, utilities and the public opposed the concept.[85] In conversation, the Chairperson pointed to this as a symbolic step toward differential pricing to encourage competition among ESCOMs.[86] This initiative raises the conflict between means and ends; that is, between a desirable, proactive action by a regulator and one that builds on analysis and stakeholder input. The motivation and intent of this policy direction appear sound, but from a process perspective lack justification.

Overall, the experience of KERC's tariff setting in Karnataka reveals a general willingness to allow techno-economic criteria to govern tariff decisions, but within politically safe bounds - without raising tariffs beyond utility proposals, and without following through on threats of outright rejections of tariff increases for noncompliance. The KERC exhibited proactive exercise of autonomy, particularly in response to government's infringements, which rendered some of the Commission's efforts futile. On occasion, the Commission undertook suo motu actions bordering on policymaking.

Generation Planning and Power Purchase

Power purchase costs have grown to over 80 per cent of the total rate base.[87] Of this, Independent Power Producers (IPPs) costs constitute only 2-5 percentage points, while costs of existing generation and short-term purchases make up the rest. Yet, the KERC has received far greater attention for its

review of IPPs than for power purchase.[88] We focus here on IPP review, due to their political nature, and because it sets an important precedent for future IPPs, as their share of the generation mix increases.

IPP Review: Hijacked by the Consumer?

As per the KER Act, the regulator has exclusive authority to approve PPAs between Independent Power Producers (IPP) and buyers (ESCOMs, previously KPTCL), except those concluded before KERC came into existence. KERC found itself in the awkward position of inheriting a controversial PPA, over which it had no legal control. Besides this, KERC has had to develop a buyback policy and review several non-conventional energy (NCE) projects and a few thermal projects in various stages of development.

KERC's review of PPAs took on two different hues. Its review of large thermal projects, including one controversial inherited [Tannir Bhavi (TBPCL)] project, was detailed, sophisticated and aggressive in protecting consumer interests. KERC's orders on TBPL dominated public perception of KERC, namely one of a consumer-biased regulator. But in its NCE tariff determination order, the debate over terms of purchase was relatively thin.

The Tannir Bhavi Power Corporation Ltd (TBPCL) PPA was concluded, but in dispute, upon KERC's formation. The dispute revolved around an ambiguous fixed charge definition in the PPA – a matter of 1,040 crore over seven years – that went to arbitration as per the PPA dispute resolution provisions.[89] KERC's treatment of this PPA was particularly forceful and consumer-driven, but according to the utilities, capricious. The public perceived this project as locking in unjust and highly inflated costs in a legally enforceable contract. The public looked to the KERC for redressal, even though legally the KERC prima facie had no grounds to do so. The initial position of the KERC was to defer pass through of the disputed fixed costs pending as arbitration panel's verdict.[90] The panel found favour with the IPP, but apparently did not address the substantive grounds of the dispute.[91] The KERC, evidently hoping for a reversal by the panel, was not willing to surrender to an unsatisfactory judgement.

Instead, KERC took a controversial stance by going against the decision of the arbitration panel, using an innovative legal interpretation of the KER Act. The KERC ruled that the PPA could not be considered a 'concluded' contract under the Act, because this implies mutual consent to the terms therein, which was belied by the dispute and the arbitration proceedings.[92] Thus, the KERC found a way to take matters into its own hands, justifying its decision based on its obligation to protect the public interest. In this capacity, it ruled that the fixed cost should not be passed on to consumers.

Given the legal strength of the PPA, governmental pressure and arbitration outcome, the Commission may have easily justified passing on the costs to the consumer. That it did not reflects an aggressive exercise of regulatory discretion, and a clear interpretation of its principle duties (namely, public interest protection).

In another new IPP project (Jindal), controversy surrounded the fixed costs again, this time hinging on the concern that the project passed its entire capital cost through to consumers when a portion was for self-use. Here too the KERC took an aggressive stance, issuing a detailed, forceful order that reduced allowable rates, though it did not change the basis for the fixed cost calculation. KERC also held the KPTCL to a high standard for justifying generation plans with detailed demand projections.

Non-Conventional Energy Project Review

The KERC's NCE order on tariff determination stands out as an exception to the detailed, consumer-driven rulings preceding it. Although the Commission forced cost prudence in the buyback rate calculations (some developers filed petitions for the review of Commission-determined rates),[93] many other important terms of purchase that would impact all projects, such as merit order dispatch, and single *vs* two-part tariffs, lack detailed, balanced argumentation in comparison to other states' orders on the same issues, [94] and to KERC's own orders on TBPCL and Jindal, and contain outcomes favourable to developers. [95] Some stakeholders expressed the concern that the Commission faced pressures from developers.[96] Representatives attending the hearing conducted on the matter included only developers, developer associations and KPTCL.[97] Even though the Commission invited public comments in response to a previous consultation paper and received objections from consumer representatives, albeit few, the order lacks citations to consumer or public interest representatives. Even if these were not considered useful, the failure to mention them is nevertheless noteworthy.

What explains these contrasting approaches and public perception of KERC? A few senior members of the KERC, including the Secretary and Technical Member, heavily influenced its stance on IPPs.[98] The Commission passed the NCE tariff determination order, on the other hand, after the departure of both the Secretary and first Chairperson. The difference in public visibility may also explain this difference, since regulators perceive their credibility at stake with higher visibility projects, such as the TBPCL case.

The lesson learned from IPP review is twofold: key individuals influence outcomes, as does public visibility or pressure (or the lack thereof). The KERC experience also illustrates the extent to which regulators can stretch their

powers and challenge government if they have the will. Overall, the KERC did create and exploit a public platform for debate, where in addition to the role of an arbiter it more often than not it took on the role of protecting the public interest. In all cases and under both Chairpersons, the orders on individual projects and NCE policies reveal the rationale and level of scrutiny behind decisions. These represent a far greater level of transparency in generation planning than would otherwise exist without KERC, and stand as precedents for future decisions.

Rule-making and Policy

KERC promulgated over 20 regulations in its tenure, initially for procedural and internal matters, pursuant to the KER Act, and later for policy-related matters related mostly to intra-state open access and market development, pursuant to the E-Act. This thrust KERC into the domain of policy to a greater extent than any other function. To make matters difficult, the E-Act laid down few guidelines for some of the undetermined, but critical, aspects of markets, such as to which and how many consumers to offer open access, in what time frame, and what surcharges to charge them.[99]

The KERC pursued its mandate to develop competition regulations strictly by following precedent or Central Government policy with little exercise of discretion. This approach was safe, and conservative (with respect to shepherding change).

Rule-making Process: Internal Drafting, External Content

The KERC stands out among Indian regulators for consistently following a process for promulgating its regulations on policy matters. Despite this process thoroughness, the judgements reflect deference to higher authority, usually government policy. Draft discussion papers receive minimal stakeholder feedback compared to the tariff process, and contain modest independent analysis by the regulator.

In the rule-making process, KERC drafts discussion papers, typically on its own, circulate them widely for comments for a period of 3 weeks. It subsequently holds a public hearing, on the basis of which it drafts a regulation and order, and posts this for a limited period before finalising the regulation.

KERC continued its culture of reliance, and drafted most regulations and discussion papers on open access in-house. A few key staff members would rapidly ascend the learning curve through research and reading for each forthcoming issue, including going on training sessions. The only exception was the Multi-Year Tariff regulation, for which the discussion paper was drafted by a consultant. Interestingly, KERC hired the same organisation

that they hired for the IP set study as well for drafting the first tariff order. Interviews did reveal a preference for a known entity, and a general skepticism of the value addition from conventional international consulting firms.[100]

However, the substantive content of the regulations and discussion papers almost always came from other sources. Andhra Pradesh was a common source for learning potential options and directions, since they were typically one step ahead of other regulators. For direction on intra-state Availability Based Tariff (ABT),[101] the KERC relied on papers drafted by the Central Electricity Regulatory Commission (CERC). On surcharge – the most contentious and important determinant of open access – the KERC adopted the 'default' approach (average cost basis) in lieu of the approach recommended in the Electricity Act (cost-to-serve), which they could not compute in the absence of adequate data. When the Ministry of Power issued guidelines in its tariff policy that included a suggested, practicable method, they adopted the recommendation included therein. For the minimum purchase obligation for renewables, KERC adopted the previous government and MNES policy guidelines, as well as other states' purchase prices.

In all cases, the KERC proceedings did not attract a wide array of intellectual inputs. For example, the proceedings on the various charges for open access, involved about 22 written sets of comments, almost none of which were interventions by industry experts, academics or other regulatory institutions. The groups included utilities, industry and industry association representatives, government and very few consumer representatives or individuals.[102] The KERC did occasionally invite experts and consultants to make informal presentations, but these were to educate the members and staff rather than to provide formal analysis and options for evaluation purposes.

KERC's approach reflected a general reluctance to promulgate reform-related regulations without the endorsement of a government entity – either a regulator or ministry. This reluctance may stem in part from the utility mindset dominating the KERC internally, as well as (understandable) capacity limitations. The orders reflect a preferred deference to credible, external sources.

Decision-making: Constraint Driven

The open access related regulations placed heavy expectation on the regulator to climb a learning curve of electricity market development. The staff scrambled to keep up with developments, by perusing web sites of other regulators, attending conferences and workshops. As mentioned earlier, the Director of Tariffs and a couple of key staff handled all the open access issues, making the expertise requirements challenging, by any standards.

The staff gained sufficient knowledge to assimilate the background issues, policy alternatives and objectives of market design aspects from various sources, and therefore draft discussion papers in-house. Yet, technical utility staff felt that the Commission had a limited understanding of the technical implications of open access rules.[103]

This capacity constraint manifested in several important orders. With surcharges, KERC did not have the option to calculate surcharges based on cost-to-serve (COS) – as prescribed by the E-Act – because of the absence of sufficient data on customer profiles. The KERC repeatedly directed the utilities from 2000 onwards to develop a reliable COS model and data to feed it, but in vain. So, unlike AP, who made this an integral part of tariff orders from the first year, KERC had no data with which to analyse COS. Thus, surcharges were calculated based on average cost, and later, based on Central Government recommendations. Similarly, the intra-state ABT issue was highly technical in nature, and another area where KERC released a discussion paper on this once the CERC released a presentation and recommended implementation mechanism for ABT to all regulators.[104]

The Commission proactively pursued a Multi-Year Tariff (MYT), but a policy did not get promulgated until after the release of the National Tariff Policy, which issued guidelines for implementing MYT. KERC had issued a discussion paper on MYT in April 2003, solicited comments and held a public hearing. However, government in parallel spearheaded its own deliberations on MYT in the context of privatisation as an amendment to the KER Act, where KERC was just a participant. The proposed Amendments were controversial, and diminished the role of the regulator considerably. The KERC, under the first regime, publicly opposed the Amendments, bringing attention instead to its own deliberations.[105] The KERC did not publicly pursue the matter further until almost three years later, once the Central Government issued a guideline in its tariff policy to implement MYT, after which the KERC drafted regulations.

The KERC grudgingly took on the role of a policy maker, particularly as a first mover in a sector with immense resistance to change. But in the presence of guidance and/or precedence, it proceeded with rule-making in a timely and efficient manner. This is understandable, given their limited capacity, and not unlike most regulators. Given their proactiveness in learning and adherence to procedure, their restrained approach to rule-making only indicates the need for greater guidance and support from government and coordination between regulators on policymaking.

Stakeholder Participation

An essential component of regulatory governance and accountability is the space for stakeholder participation. In theory, stakeholder involvement can

provide additional information, lend credibility to regulatory proceedings, and help inform regulators on the likely public response to their decisions. In this section we examine stakeholder participation in KERC, including the dimensions of transparency, participation, accountability and impact.

KERC has the reputation for taking a strong public stance in support of consumers, as discussed earlier, a position that was driven by a few influential senior officials. The first Secretary felt that a handicap had to be given to the consumer to compensate for a history of practices against it.[106] KERC was the first (and only) regulator to institute an office of Consumer Advocacy, who was an independent consultant that straddled the fence between the KERC and consumer groups. He was responsible for serving as a conduit to channel stakeholder participation into KERC proceedings, as well as ensure that the KERC created the space for consumers, through active training, information dissemination and availability.

Transparency

KERC's information culture, as reflected in its regular Annual Reports, strong web site and procedural regulations demonstrate a commitment to transparency and stakeholder participation. The KERC from inception maintained a relatively informative web site, and responded to consumers' feedback. For example, KERC posted chapter-wise links to tariff orders on request of a consumer. As a specific demonstration of its commitment to transparency, the Commission included in every Annual Report all formal correspondence with government.

The Consumer Advocate publicised papers and addressed consumer grievances when other avenues were exhausted. For example, the Consumer Advocate publicised the strategy paper written by consultants on privatisation and related amendments to the KER Act. KERC diligently posts its discussion papers for rule-making on its web site. As the result of these efforts, consumers who participated actively in regulatory proceedings expressed strong support for the Consumer Advocate and the transparency of KERC.

Stakeholder Participation

On the surface, Karnataka appears to have an active and broad public voice in the regulatory process. In the three Tariff Orders between 2002 and 2005, over 8000, 6000 and 5000 objections respectively were filed. However, the large number of objections belies the true breadth of participation, because in all these orders farmer representatives arranged to inundate the regulator with multiple versions of the same objection.[107] For example, in FY 2002 99 per cent of objections were on behalf of IP set owners or

IP set/domestic consumers.[108] The number of non-duplicate objections ranges between 100 to 300 in each order for all companies together. The number of active interveners in Karnataka has been smaller, and reasonably constant over time (See Appendix). The handful of active interveners positively influenced regulatory proceedings, but mostly in the tariff process, and hardly participated at all in policy-related matters. Despite their small number, regulators and regulatory staff rely on public objections in tariff orders, even while both stakeholders and regulators expressed wariness of each other's capacity.

Stakeholder Composition: The largest share of objectors comes from industry, comprising 43 per cent in KERC. Over 40 per cent of total issues raised in filings consistently arise in industry representatives' objections. The Federation of Karnataka Chambers of Commerce and Industry (FKCCI) publishes and circulates information booklets to raise awareness of the power sector issues. However, participation is not widespread across industry. An FKCCI representative in KA indicated that out of over 3,000 members, only 25 or so attend their energy summits, of which only a few small-scale industry representatives actively contribute to tariff filings. Large industries do not participate at all. This may seem surprising considering that KA has one of the highest industrial/commercial tariffs in the country. However, industries for whom electricity comprises a high share of production costs have found exiting the system more expedient than engaging in drawn out and uncertain regulatory processes.

Consumer groups include NGOs, farmer organisations, individuals and resident associations. Karnataka had 37 consumer groups, including 7 farmers/farmer associations. The data show that among consumer/farmer organisations, more than half operate individually, without institutional support.

Regional Disparity: The demographic breakdown of objectors shows stark regional disparities, particularly along urban/rural lines. Consumer representatives are unevenly distributed across ESCOMs. Gulbarga has less than five consumer representatives, while MESCOM, which includes densely developed areas along the Karnataka coast (e.g. Udupi), has the widest breadth and largest number of consumer representatives.

Urban consumer participation, particularly from Bangalore and Mangalore cities, is relatively small, but includes several active and influential consumer groups/representatives.[109] Interviews with consumer groups reveal that urban residents, in general, either find the burden of electricity bills insufficient to bother with reforms, or have little faith in the regulatory system or in reform.[110] This is supported by the observation that most of the concerns expressed in BESCOM objections relate to grievances by industry on tariff levels or slabs.

Farmers in rural regions comprise the bulk of individual interveners in the process. This is not surprising, since they have the most at stake, and have no alternatives (unlike industry, who may also have as much at stake). Urban areas have few active individual interveners, but do include some of the active consumer groups. Industry groups unsurprisingly come from industrial areas around Bangalore and the coastal regions.

Evolution of Public Participation: We found an increase in the depth and sophistication of objections from FY 2002 to FY 2005, even though the number of participants did not change. Almost all objections in Karnataka in FY 2002 were grievance-related, and not substantive. Most of these came from farmer groups who protested the rate increases, and classification of rate categories. Many objected generally to the imposition of utility's inefficiencies on consumers in the form of tariffs. However, the range of issues to which substantive objections have been made in FY 2005 increased to tens of technical issues, some delving into depths of cash flows statements, quality of service, inconsistencies in filings, excess expenditures, T&D losses, and others. This has been observed in comments from industry, utilities and consumer groups.

KPTCL utility and regulatory staff corroborated this observation of increased sophistication of objections. They claim that they have been forced to pay closer attention to their filings, as objectors find mistakes. They point to a handful of regular objectors, whose objections they now look out for, or to whom they pay particular attention.[111]

A few farmer representatives indicate that their involvement in the regulatory process has given them the awareness to understand the detriment of 'free power'. One such representative learned that 'farmers don't know their own problems'. Allegedly, this awareness has led to lower agitation.[112]

Commission Advisory Committee: The KERC formed a Commission Advisory Committee (CAC) pursuant to the KERC Act. This group consisted of various stakeholders, including representatives of consumers, unions, utilities, government and industry. They have met 14 times, typically on a quarterly basis (as required by the Act), except for one extended gap between February 2004 and January 2005. This coincided with state elections (May 2004), and the end of the first Chairperson's term (November 2004).

The CAC deliberated broad, policy-level issues, including the development of rural power supply technologies, irrigation schemes, multi-year tariff, and other changes brought about by the E-Act. It is not clear to what extent the Commission gained from or responded to CAC deliberations in its decision-making. Meeting minutes contain a summary of presentations by various stakeholders, but do not contain any deliberations or conclusive

comments by the Commission. On a few occasions, as indicated in tariff orders, CAC members raised suggestions material to Commission's deliberations.[113] In the FY 2005 order, the Commission attributed the idea of the differential urban/rural tariff to the advise of the CAC, even though the idea has been closely associated with him personally. This would indicate that the new Commission viewed the CAC as a vehicle of credibility.

Accountability Mechanisms

Of greatest import is the KERC's commitment to their Annual Reports. Unlike many states in India, KERC published Annual Reports every year in a consistent format, providing comprehensive information on the Commission's activities, financial accounting, consultancy, training, promulgations, and correspondence with the government. In addition, its documentation of hearings and stakeholder responses has evolved, as described below.

Documentation of Public Participation: The record of stakeholder participation in tariff orders shows a steady evolution that reflects its increasing importance to KERC. This record has evolved in detail and style. Early orders contained a few summary pages of objections without references to individual objectors. By FY 2005, the Commission comprehensively documented the issues raised in most objections in detail with attribution to individual objectors. All tariff orders show a breakdown of objections by ESCOM. Annexes of the orders list all objectors who participated in hearings. They have provided useful aggregation of objections by district and by objector type, but only in some orders.

However, many noted the lack of responsiveness in public hearings. Consumers expressed a desire to engage and debate with the utility (typically, the respondents), rather than just airing their objections to the Commission, with no certainty of satisfactory redressal.[114]

Impact of Public Participation

From a policy perspective, public participation is an instrument of accountability. How effective has it been in this regard? Overall, public participation in the regulatory process has not forced action. Regulators tactically rely on objections at their discretion, and mainly on technical aspects of the ARR process, but not on larger reform issues.

The regulatory process, as embodied in the CBR, other procedural regulations and the KERA do not have explicit mechanisms for ensuring regulators' responsiveness to stakeholder interventions. Though in recent orders the Commission documents objections thoroughly, they respond

to them in the order at their discretion. The public hearing process is also of a form that encourages interventions, but not interactive debate on issues. Utilities submit written responses to public objections of ERC filings, but are not required to respond in hearings to the objections. Regulators themselves respond to objections at their discretion, in some cases hearing them, but remaining silent.

Consumers expressed concern that the Commission is not responsive to public objections on a number of issues (as in the case of the investment proposal discussed earlier).[115] Consumers, particularly those that have elevated themselves above rate issues, feel the regulator is not proactive, and avoids tackling fundamental reforms in the sector. These consumers felt they have brought to the attention of the regulator several substantive irregularities in utility filings, which the regulator has neglected to pursue.[116]

Regulators' limited regard for public interventions helps explain their limited responsiveness to the public. Regulators and regulatory staff claim to not gain significantly in their analysis from consumer participation. Regulatory staff indicate that regulators generally do not read consumer objections thoroughly.[117] Instead, staff summarise and write synopses of objections for tariff orders, which then regulators may refer in their final discussions.

The regulators' perception, corroborated by staff, is that public participation is not particularly 'enlightened'.[118] They do not understand the broader context of reform, and therefore cannot appreciate the time and complexity in improving the sector. Consumers' own experiences bear out this perception. Some consumers in Karnataka feel disrespected by regulators, based on their interaction in public hearings and personal meetings.

However, this stands in contrast to the earlier discussion on KPTCL's view of consumer participation as increasingly useful. On closer reading of the tariff orders, on several occasions KERC has cited and agreed with consumer objections in articulating its position on some issues. Often the Commission relies in part on consumers' objections to explain or defend a position.

Despite the increased sophistication of objections, interviews with regulators and consumer groups reveal that tariffs remain the primary entry point for consumers into the regulatory process. Consumers' growing capacity and regulators' increasing reliance on consumer objections fall primarily in the domain of cost recovery and reduction, not policy. Consumers as yet have insufficient capacity, exposure or even the time to understand or comment on tariff filings from this larger policy context (barring few exceptions, of course).

Potential Opportunities with Public Participation: Consumers' and regulators' perceptions of each other are similar: they lack capacity, focus mostly on

rate issues, but are critical for reforming the sector in the long run. Nevertheless, consumer representatives voice optimism about the benefits of the regulatory process, amidst their criticisms of regulatory responsiveness and capacity. Regulators too encourage and support consumer participation contingent on consumers increasing their awareness and capacity.

As discussed above, regulators often exploit consumer interventions, even if they do not rely on them for their analysis. Interviews with stakeholders indicate that such reliance on consumer inputs may be stronger than indicated in the tariff orders. The regulator welcomes consumer objections as a basis for them to raise concerns with utilities in matters they may not feel otherwise comfortable. Having sensitive issues raised in formal public objections allows regulators to deflect any criticism by invoking their obligation to represent the public. In other words, it allows them to operate as mere instruments of the law, rather than self-styled (and potentially unpopular) reformists. An alleged statement by a regulator to a consumer advocate in Karnataka epitomises this attitude: 'If you bring something up, I will consider. Suo motu, I will not take administrative action.'[119]

The regulatory staff proactively encouraged outside experts and interveners to submit formal objections, so that the Commission would have a basis to raise issue with the project. This was a regular occurrence particularly on generation planning issues, and indicated the staff's desire for outside backing to give the Commission a pretext for challenging the government. Staff were fully aware of the political pressures in decision-making, and saw stakeholder intervention as a means to surmount this. For example, regulator staff expressed awareness and tacit support for the weak basis for many proposed generation projects in the state. When asked why they have not raised technical arguments against the utility, they requested that consumers file formal objections making technical arguments against these projects, so that they may have a reason to raise the matter in the next tariff filing.[120] In this regard, public participation can benefit greatly in bringing to the public record issues that the regulator may avoid.

Thus, public participation can play a supportive role to the regulator in carrying out its mandate. But regulators still rely opportunistically on such participation. Public participation does not as yet force the regulator to confront issues, particularly when other compelling pressures seem overwhelming.

Conclusion

The KERC is a new institution intended to be a core component of a reform plan that never fully materialised. KERC was established based on the US model of independent regulation to depoliticise tariff setting for the benefit

of future private investors in distribution utilities. With privatisation never getting off the ground, and the passing of the Electricity Act, regulators ended up as focal points of power sector reform, and consequently as de facto agents of institutional (distribution utility) reform.

In this role they have struggled to make an impact. Though the KERC exhibits a relatively strong commitment to reform and to regulatory process, their decision-making comes across as constrained. External constraints in the form of weak enforceability and lack of government support contribute to this, but some of their constraints are also self-imposed. Regulators have exercised restraint in exercising their powers, either out of a perceived futility to challenge the establishment, or as a deliberate tactic toward enhancing their agency by setting less ambitious goals. While KERC did stretch its powers on occasion, it did so due to the influence of individuals. The participatory process in KERC has evolved, strengthened and contributed to decision-making, but has not forced it. Active intervention in the regulatory process by the public has reduced or remained constant, but increased in sophistication. Stakeholders contribute largely to tariff-related issues, with little contribution to policy.

An important insight from the KERC's experience is that regulators' perception of their credibility in government's and the public eye drives their decision-making. In matters with higher visibility, KERC undertook greater levels of scrutiny, such as with the Tannir Bhavi IPP case, and a 2,700-crore transmission investment. But even in these cases, scrutiny was internally driven, and sometimes perfunctory. The participatory process offers significant opportunity to exploit this concern for credibility as a mechanism of accountability. But it needs to evolve to force responsiveness of the regulator to stakeholder interventions, and bring into the public domain certain review aspects that have slipped through the cracks of public scrutiny, such as investment review and directive monitoring and compliance.

Institutional and Political Context: Lack of Government Support

The KERC suffered not only from a lack of political support upon establishment but also actions that undermined its authority during its tenure. Nobody in the electricity establishment was prepared for the regulator, and the government did little to ease the transition. Utilities had little respect or understanding of the regulator. The government signalled its weak commitment to the regulatory institution by first providing conflicting messages to KERC on its authority and perquisites, and later attempting to dilute its powers in its proposed amendments of the KERA to facilitate privatisation.

The government's oversight authority over utilities (as owner) created an overlap in operational oversight between government and the KERC (as regulator). Right from the outset, the utilities had to answer to two authorities, and KERC very quickly learned that they occupied second place. Rather than strengthening oversight through a common purpose, this overlap often undermined regulatory authority, such as when government would hold back subsidy payments as an instrument of performance enforcement, and simultaneously order utilities to ignore regulators' directive to fill the gap by increasing agricultural tariffs. In other cases, this overlap rendered regulatory directives superfluous, such as with loss reduction targets or investment directives.

KERC particularly struggled with its autonomy in investment review. A recent Appellate Tribunal decision quashed its authority over investment review. This landmark decision throws wide open the interpretation of tariff regulation, and will likely foreclose any future review of investments until further judicial review of the matter.

By weakening KERC's legitimacy, government also reduced KERC's ability to enforce directives. With limited political support of the regulator, it came as no surprise that utilities regularly challenged KERC's orders in court. This, coupled with the culture of an authoritative and consumer-oriented Commission strained relations between KERC and the utilities and reduced cooperation, making their task more difficult.

Regulation in Practice: Self-Imposed Constraints and Limited Exercise of Powers

KERC's self-perception of their practical powers fell short of their legal powers. They were against imposing punitive penalties on utilities. Enforceable instruments of discipline were also not carried out. KERC threatened to withhold rate increases, but despite persistent non-compliance they never followed through. They carried out agricultural estimation and directive monitoring in an adjudicatory and arms-length manner, without exercising their search and seize powers or conducting hands-on field investigations, which resulted in limited success but greater frustration with utilities' obfuscatory tactics.

KERC, like most regulators in India, do not have the capacity or expertise for such extensive hands-on investigative research, but do have the option of outsourcing these activities. They conducted few such studies, but only recently on a wide scale. The KERC developed a culture of self-reliance and hired consultants on occasion, which speaks to their competence and proactiveness, but was also suited to a hands-off style of regulation. That the KERC comprises almost entirely of staff either on deputation from or with

histories in utilities, contributed to a mindset of deference to government on areas of overlapping oversight.

Role of Stakeholders: Underutilised Instrument of Accountability

KERC's commitment to its mandated governance style of transparency and participatory process was commendable and pioneering. KERC's Office of Consumer Advocacy served as a communication bridge between consumers and the regulator. KERC maintained and provided information proactively, both on their web site and upon request. They conducted hearings, solicited public comments and circulated discussion papers for rule-making consistently.

However, stakeholders took limited advantage of this process. Their participation evolved, from one dominated by widespread outrage against tariff increases and customer segmentation in early years, to more substantive interventions in later years. Farmers and farmer groups have consistently been the most active interveners, relying on an apparently successful strategy of inundating the regulator with thousands of duplicate comments. Filtering this out, though, reveals a stakeholder set with significant regional disparity, and dominance by industry and a few consumers and consumer representatives. Rural and semi-urban areas outnumber urban interveners by a large margin.

Stakeholders' and regulators' mutual perceptions of each other are that the process has so far been useful only in tariff setting, not in policy issues (such as open access). The format of the process also lacks interactive debate and engagement between interveners and utilities and regulators.

Notes

1. The companies included KPCL (Genco), Bangalore, Mangalore, Hubli and Gulbarga Electric Supply companies (BESCOM, MESCOM, HESCOM, GESCOM). In 2006 KERC carved out a new sixth Distribution Company in Chamundeshwari.
2. Centre for Infrastructure Management, *Restructuring of the Electricity Industry in Karnataka* and *Regulatory Framework for Karnataka Power Sector*, ASCI, 1997.
3. Interview with former Regulator, corroborated by staff, 30 January 2006.
4. Memorandum of Understanding between the Ministry of Power, Government of India and Government of Karnataka on 12 February 2000.
5. Government Order No. DE 36 PSR 2002, issued 18 November 2002.
6. KERC's comments on the Proposed Amendments to the KER Act for Introduction of Multi-Year Tariff.
7. Financial Restructuring Plan, Government of Karnataka, 2001.

8. Interview with consultant to KPTCL, corroborated by KPTCL staff, 17 February 2006.
9. Interview with senior regulatory official, 14 October 2005.
10. The KERC was formed and the Chairman appointed in the closing days of the J H Patil Government, but started operation under the S M Krishna Government.
11. Interview with first Chairperson, 13 October 2005.
12. Interview with first Chairperson, 13 October 2005.
13. Interview with KPTCL staff, corroborated by utility consultant, 12 April 2006.
14. Interview with consultant to the KPTCL, 14 February 2006.
15. Interview with regulatory Affairs Staff, KPTCL, 14 February 2006; and consultants, 17 February 2006.
16. Interview with first Chairperson, 13 October 2005.
17. Selection Committee consists of a retired High Court or Supreme Court Chief Justice (Chair), the Chief Secretary of the GoK, and the Chairperson of the Central Electricity Authority (CEA) or Chairman of the SEB holding the post for longer than three years. The Committee is convened by the Energy Secretary of GoK, Karnataka Electricity Reforms Act 1999.
18. Interview with regulatory Member, 13 October 2005.
19. The First Chairperson did not accept government recommendation, Interview with Chairperson, 30 January 2006.
20. Interview with senior regulatory official, 9 May 2006.
21. Interview with senior regulatory official, 9 May 2006.
22. Interview with regulatory staff member, 29 January 2006.
23. Interview with first Chairperson, 30 January 2006.
24. Interview with regulatory staff, 14 October 2005.
25. Interview with regulatory staff, 14 October 2005.
26. Interview with senior regulatory official, 9 May 2006.
27. Interview with regulatory staff, 14 October 2005.
28. Interview with technical staff, KERC, 29 January 2006.
29. Interview with technical staff, KERC, 14 October 2005.
30. Interview with first Chairperson, 14 October 2005.
31. Interview with second Chairperson, 10 April 2006.
32. Interview with senior regulatory official, KERC, 10 April 2006.
33. Interview with regulatory staff, 14 October 2005.
34. Interviews with regulatory affairs staff, KPTCL, 14 February 2006 and utility consultant, 17 February 2006.
35. Interview with regulatory affairs staff, KPTCL, 14 October 2005.
36. Interview with senior government bureaucrat, 16 February 2006.
37. Consumer Focus Group, 22 March 2006.
38. Interview with KPTCL senior official, 14 February 2006.
39. Interview with regulatory staff, 20 April 2006; and utility officials, 14 February 2006.
40. Interview with senior utility official, 14 February 2006; and senior bureaucrat, 16 February 2006.

41. The Commission had ordered the metering in its Letter No. I/11/02/1830, 11 July 2002, but continued to pursue the matter through next Tariff Order (2003).
42. See Annex 2, Tariff Order 2002.
43. Interview with Chairperson, 10 April 2006.
44. Interview with senior utility official, 14 June 2006; and senior bureaucrat, 16 February 2006.
45. Interview with senior KERC official, 13 October 2005.
46. Consumer Focus Group, 22 March 2006.
47. Interview with first Chairperson, 10 April 2006; and Bharati Kisan Sangh Consumer Focus Group, 22 March 2006.
48. Interview with BESCOM official, 13 February 2006.
49. A utility staff claimed that the consultant was 'doing nothing'. Interview with KPTCL staff member, 9 June 2006. The KERC staff maintain that the utility was providing data for only select feeders that had no pump sets on them. Interview with regulatory staff, 20 April 2006. Other senior officials appeared unconcerned about the consultant's possible use of data provided by the ESCOM. Interview with second Chairperson, KERC, 10 April 2006.
50. Interview with senior Karnataka bureaucrat, 16 February 2006.
51. 'Transmission & Distribution (T&D) Losses', Tariff Order, 2000.
52. Interview with Director, KERC, 14 October 2005.
53. Interview with senior official, 14 June 2006.
54. Distribution Loss & Energy Audit for each ESCOM, Tariff Order, 2005.
55. Interview with senior official, 14 June 2006.
56. Tariff Order, 2005, Chapter 1, Page 30.
57. Letter from KERC to Energy Secretary, GoK, 21 February 2005, Annex 2.9, Annual Report 2004-5.
58. Interview with first Chairman, KERC, 13 October 2006.
59. Interview with first Chairman, KERC, 13 October 2006.
60. See Annex 1, Tariff Order, 2005.
61. Interview with second Chairperson, KERC, 14 October 2005.
62. Interview with first Chairperson, 30 January 2005.
63. 5 crore is also the limit above which KPTCL is required to seek government approval for a guarantee to back financing.
64. Interview with first Chairperson, 30 January 2005.
65. Interview with first Chairperson, 30 January 2005.
66. Interview with KPTCL official, 14 February 2006.
67. Interview with first Chairperson, 30 January 2005.
68. Interview with regulator, 30 January 2006.
69. The Own-Your-Transformer (OYT) scheme proposed investments of 4,900 crore, KPTCL's assets in FY 2001 were worth about 5,000 crore.
70. Karnataka Government Order No. DE 59 PSR 2003, Bangalore, 21 October 2003.
71. Government officials claim that they themselves abandoned the scheme after finding the results of the pilot unsatisfactory.

72. Project was called Rural Load Management Scheme (RLMS).
73. Letter from KERC to BESCOM on 17 November 2004, No. X/02/4/1924.
74. Letter from BESCOM to KERC on 22 June 2005, No. BESCOM/MD/PS/BC1/T1/2005-6.
75. Letter from KERC to BESCOM on 19 July 2005, No. X/02/4/1059.
76. Interview with senior regulatory official, 10 April 2006.
77. Interview with senior regulatory official, 10 April 2006.
78. Drawn from discussions with Expert Committee Chair, June 2005.
79. Perceptions of interveners in the hearing process expressed in Consumer Focus Group, March 2006.
80. Appeal No. 84, August 2006.
81. 'Power Tariff Hike Deceptive: BJP', *Times of India*, 9 May 2002.
82. Consumer Focus Group, 22 March 2006.
83. Tariff Order, 2005, p. 323.
84. Interview with CMD, KPTCL, 14 June 2006.
85. Chapter 9, Tariff Order, 2005.
86. Interview with second Chairperson, 10 April 2006.
87. Consolidated ERC of ESCOMs, Annex 11, Tariff Order, 2005.
88. The former Chairperson pointed out that in retrospect power purchase represents the area where the Commission has had the least impact. We don't assess this aspect because uncontrollable aspects of purchase costs (e.g. fuel) drive purchase costs to a large degree. The controllable elements (e.g. quantity of purchase) fall in the technical realm, and offer less insight into process and decision-making than does KERC's review of IPPs.
89. KERC Tariff Amendment Order, para 11.3, p. 7.
90. Tariff Order, 2003. Note that taxpayers would pay for these costs anyway. KERC only dealt with the matter of passing it to electricity consumers directly.
91. Interview with senior regulatory official, 9 May 2006.
92. Mutual consent referred to as consensus ad idem, Tariff Amendment Order 2003, para 11.18, p. 17.
93. Review Petition filed by the following in the matter of tariff determined by the Commission in respect of Non-conventional Energy Sources, 20 July 2005.
94. Andhra Pradesh and Tamil Nadu NCE Orders.
95. Order on Determination of Tariff in respect of Renewable Sources of Energy, issued 18 January 2005.
96. Interviews with Former KPTCL officials, 14 February 2006; and Consumer Focus Group, 22 March 2006.
97. Annex 2, 'Order on the Matter of Determination of Tariff in Respect of Renewable Sources of Energy', January 2005.
98. Interview with senior officials, 13 October 2005 and 9 May 2006.
99. Surcharges are exit 'fees' imposed on customers opting for open access to mitigate the loss of the cross-subsidies they provided, which were to be phased out as tariffs were rationalised.
100. Interviews with Directors, KERC, 14 October 2005 and 30 January 2006.
101. Availability based Tariff, a method of inducing grid discipline and settling imbalances.

102. KERC Order on transmission charges, wheeling charges, and cross-subsidy charges, 9 June 2005.
103. Interview with KPTCL engineer, 9 June 2006.
104. Discussion paper on Intra-state ABT issued on 26 December 2005 following CERC's presentation on 24 November 2005 to Forum of Indian Regulators (FOIR).
105. See KERC Comments on the Proposed Amendments to KER Act for Proposed Multi-Year Tariff, 2003.
106. Interview with senior regulatory official, 9 May 2006.
107. This was confirmed by one instigating group in a Consumer Focus Group meeting, March 2006.
108. KERC used the category 'IP Set/Domestic', which probably refers to groups that represents interests of rural consumers at large, and not just IP set owners, KERC Tariff Order 2002, p. 17.
109. Consumer groups indicate that even in MESCOM objections come primarily from rural and semi-urban coastal areas, Consumer Focus Group, March 2006.
110. FKCCI representative, KERC Consumer Forum, March 2006.
111. KPTCL Regulatory Affairs, February 2006.
112. Bharat Kisan Sangh representative, Consumer Focus Group, March 2006.
113. Tariff Order, 2002, p. 136; Tariff Amendment Order 2003, p. 43.
114. Opinion of FKCCI representative, Consumer Focus Group, March 2006.
115. Consumer Focus Group, March 2006.
116. Such as the capitalisation of consumer deposits, and unjustified increase in A&G expenses, FKCCI and farmer representatives, Consumer Focus Group, March 2006.
117. Interview with KERC Consumer Advocate, 22 March 2006.
118. Interviews with Former Chairperson, KERC, and Delhi regulator, 30 January and 24 March 2006.
119. Karnataka Consumer Focus Group, March 2006.
120. Interaction with regulatory staff, February 2006.

CHAPTER 3

Delhi

Regulation in the Shadow of Privatisation

Introduction

The Delhi Electricity Regulatory Commission (DERC) operates as a critical component of arguably the most high-profile electricity sector reform effort in the country. That the operation of the DERC is instrumental to the success of a high-stakes privatisation effort - only the second such in India after Orissa - makes it an important case for further study. Moreover, that the DERC is regulating private rather than public entities also makes it worth examining closely.

The DERC was established in March 1999, and passed three orders in January 2001, May 2001 and February 2002, relevant to setting the stage for the subsequent reform. The Delhi Vidyut Board was unbundled, with the resultant three distribution companies privatised in a joint venture structure in July 2002. The governing framework for the five year reform period was enshrined in a Delhi Government policy directive, which set certain parameters of sector operation, and left others to the DERC. Since 2002, the DERC has issued five sets of tariff orders, although these have not always been on a timely basis. The DERC began operation with a single Member,

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This chapter draws on information obtained through interviews and documentary evidence. All interviews were conducted on a not-for-attribution basis. Consequently, while specific points obtained in interviews are referenced in a note, interviewees are only identified by their broad institutional affiliation.

whose term ran until 2004. Subsequently, a three person Commission, consistent with the pattern in other states, was appointed.

Summary of Performance

While this chapter is focused on the DERC and how it operates rather than the larger evolution of the electricity sector in Delhi, this section provides a brief snapshot of performance in the sector to set the stage for the discussion that follows. The Delhi reform story has been a rocky one. Midway through the five year initial phase of reforms, public unrest grew over charges of poor performance, particularly by two of the three companies, BRPL and BYPL.[1] In 2005-6 there were public agitations and unrest over a tariff increase to consumers despite a perception of poor performance. However, performance appears to have improved toward the end of the five year period.

Table 1 summarises some relevant data, from which a few observations immediately become apparent. First, one of the Discoms, NDPL, has substantially over-achieved their loss reduction target (Aggregate Technical and Commercial losses or ATC targets), to the tune of nearly 9 per cent by 2005-6. This overachievement has contributed substantially to bringing the sector as a whole to a position of revenue surplus by 2006-7. The other two companies have met their target in almost all years (BYPL in 2002-3 is an exception) but have not substantially overachieved. Second, collection of past arrears has contributed substantially to the financial turn-around. Third, by

Table 1: Performance Statistics for Three Private Discoms in Delhi

		2002-3	*2003-4*	*2004-5*	*2005-6*	*2006-7*
AT&C Loss Achieved % (target)	BRPL	47.40 (47.55)	45.06 (46.00)	40.64 (42.70)	35.53 (36.70)	(31.10)
	BYPL	61.90 (56.45)	54.30 (54.70)	50.12 (50.70)	43.89 (45.05)	(40.20)
	NDPL	47.80 (47.60)	44.87 (45.35)	33.79 (40.85)	26.52 (35.35)	(31.10)
Revenue Gap at Existing Tariff (cr)		1,185	1,735	1,862	520	(195.42)*
Tariff Increase (%)		0	5.02	9.80	6.66	0
Revenue from Tariff Increase (cr)		0	103	379	319	0
DVB Arrears Collected (cr)		–	210	103	55	0
Government Support (cr)		1,364	1,260	690**	138	0

* Projected surplus, includes DVB arrears collected.

** In 2004-5 a regulatory asset of 697 cr was also created.

Source: Data taken from DERC documents.

2006-7, all three companies had done sufficiently well for the sector to generate a surplus and require no additional government support.

While the overall picture is one of considerable reform achievement in financial terms and savings to the public exchequer, continued reports of consumer discontent over service quality from Delhi's citizens, unanswered questions about the performance of some of the companies raised by independent organisations and a larger sense that the DERC lacks credibility with the public, all of which are discussed further below, temper the overall sense of achievement.

Reform Context

A bold and ambitious privatisation-led reform effort provides the overarching context within which any understanding of the DERC necessarily rests. Our focus here is not on an assessment of the privatisation – whether design or implementation – but on the implications for the regulatory process. We first discuss the motivation for and basic timetable of reform, then turn to the antagonistic interaction between regulator and government over key design elements, then examine the final governance framework, and finally discuss the impact on the regulator.

Motivation for Reform and Reform Timeline

As with many other State Electricity Boards, the performance of the Delhi Vidyut Board had been on a sharp downward trend through the 1990s. Reported Aggregate Technical and Commercial (AT&C) loss levels had jumped from the range of 20–25 per cent in the early 1990s to nearly 50 per cent by 1998. According to senior officials responsible for framing the reforms, public confidence in the utility was also extremely low, culminating in agitations and even riots against a poor and deteriorating power situation in the summer of 1998.[2] For a new government elected in December 1998, the power sector therefore became a top political priority; developing and initiating power sector reforms became an early and high profile aim of the political leadership.

Two external factors strongly shaped the reform decision.[3] First, reformers were driven by a perception that there was only a narrow window of political opportunity to implement reforms and realise results before a new election. As a result, they decided not to involve the World Bank or other external agents, which, it was suggested, would slow down the process. Second, the Orissa experience with reform and privatisation was coming unstuck at around the same time as Delhi reformers were planning their reforms. Hence, they were acutely aware of the need to avoid Orissa's pitfalls. However, at no point did the Orissa example translate to a rethinking of

privatisation as the central plank of reform, but only to efforts to design a different approach to privatisation.

Creation of an independent regulator in March 1999 was a key part, and indeed, the first step, in the reform process. The DERC was initially established with limited powers, notably no control over licensing. By October 2000, full powers were conferred on the DERC as part of a Delhi Electricity Reforms Ordinance, which was passed in November 2000 and came into force as an Act in March 2001. The bidding and privatisation process unfolded during 2001 and 2002, with the regulator playing an important role, as discussed further below, in determining and establishing key parameters. As this chronology suggests, the DERC was a nascent and inexperienced body at the time of key privatisation and reform decisions. This inexperience compounded the already problematic situation of having to walk a line between asserting its independence and providing support for the overarching reform programme.

Early Antagonism between Regulator and Government

Two important early episodes illustrate the tension placed upon the regulator by the reform context: rejection of a government request for multi-year tariffs and the regulator's struggle against the larger policy directive framing the reform process. In the first case, the DERC decided against a multi-year tariff, while in the second, it had to accept the Government's authority. Both cases, however, illustrate the pitfalls of what was only partial regulatory autonomy in the service of structural reforms.

For reform designers within the DVB, drawing from the lessons of other countries and earlier efforts as in Orissa reducing regulatory uncertainty was critical for success of the reforms.[4] Accordingly, they proposed a tariff setting formula which locked into a fixed trajectory all the critical parameters for tariff setting, such as the loss reduction trajectory, and the capital expenditure for each year. In reply, the regulator said that although the idea merits consideration, 'it is not the mature stage' for fixing multi-year tariffs. Specific problems anticipated included an adequate information base in the absence of relevant information systems, the practicality of uniform loss targets for all companies, the challenge of sensible long-term investment plans given the lack of information about fixed assets then held, the lack of specificity on efficiency improvements and quality of service in the DVB proposal.[5] Interestingly, the regulator also noted the unanimous public objection to long-term tariffs: 'No member of the public supported DVB's request for a five year formula for setting tariffs'.[6] Moreover, he suggested the public perceives the proposal as a 'product of the concern for creating a privatisation enabling environment rather than serving the consumer'.[7]

In interviews, an official involved in the reform held a view that the

regulator was merely taking the safe way out and sought to avoid responsibility and accountability for necessary tough decisions.[8] However, there were several representations made before the regulator during hearings that such a multi-year approach was not justified at the time, a position that stakeholders from all sectors reaffirmed in interviews conducted for this study. Whether or not these views were informed or appropriate, the Government did not feel it could move ahead, and particularly could not impose a loss reduction target without regulatory concurrence. The way out was to make the loss reductions themselves the basis for bidding, thereby removing this key parameter from regulatory discretion, but indirectly rather than directly. However, approval of capital expenditure, repair and maintenance and other critical variables remained with the regulator. In these cases, the regulator appeared to be signaling autonomy to defend what he saw as the public interests, above being a team player in a larger government-led reform scheme.

A second battle occurred over the Government's Policy Directive, which laid out the framework for the reform. Here the regulator challenged the legality of the directions themselves, arguing that they are 'not in the nature of policy directions in the public interest within the meaning of the [Delhi Electricity Reform] Act'.[9] This position also found favour with stakeholders, who argued that the Government 'cannot rewrite the Act in the name of issuing policy directions'.[10] Whatever the merits of the argument, which turn on how the term 'public interest' is decided, since the Act named the Government itself as the final arbiter of any dispute, the matter was quickly settled in favour of the Government.[11] While accepting this decision, the DERC did make a point of reinforcing their autonomy, reiterating that within the scope of the Policy Directive they retain control on allowable costs and revenues for the purpose of future tariff determination.[12]

These episodes suggest a regulator determined to send public signals regarding autonomy, and also one that either recognised the validity of stakeholder perspective, or used them strategically, or both. At the same time, the fight over the Policy Directive, in particular, was somewhat quixotic, given the legal cards were entirely stacked in favour of the Government. Perhaps the clearest message that occurs from these two episodes is that early actions are shaped by the regulator's perceived need to establish early credibility with the larger public.

Restricting the Regulator: The Governance Framework for Privatisation

Just as the regulator was forced to play a balancing act, so too was the government. Having established the DERC as an independent body, it then found itself in a position of limiting regulatory risk even while avoiding

charges that it was limiting regulatory independence. Once the effort to get the regulator to agree to a multi-year tariff failed, the proposed way forward – locking in loss reduction through the bidding process – was only a partial solution. The result was divided control – in that some parameters were under the regulators control and others were established up front by the government – between the government and the regulator. A World Bank study of the Delhi reform reaches a similar conclusion, and indeed recommends that curtailing regulatory discretion in the early years of reform may be a necessary evil.[13]

The Delhi Government's Policy Directive established the loss reduction trajectory (indirectly through the bidding process), a method for bulk supply costs on a multi-year basis, automatic pass through of these costs, and specified a 16 per cent rate of return on the capital base. The DERC retained control over scrutiny of operating expenses and capital expenses without being bound to any specific formula, and based on balancing the results of this scrutiny against the revenue requirement, the eventual tariff. Given expectations of continued losses for at least a few years, the Government also pre-specified a transition loan amount for the five year transition period (which it revised upwards shortly before the handover). It is certainly possible that knowledge of the available subsidy was a factor in the regulator's subsequent decision-making.

The impact of this divided control was exacerbated by divided motivations. For the Delhi Government, ensuring a successful privatisation was the overarching goal, in the expectation that privatisation would lead to loss reduction and quality of service improvements in the medium to long term. While the DERC saw itself as 'facilitator of the overall reform process'[14] as a new public entity it also had to build public credibility in the very short term. This dynamic between differing perceptions of the public interest, and the resultant back and forth between the Government and the DERC, come to the fore in some examples of the DERC's early actions.

Prior to privatisation, the DVB petitioned for a 35 per cent tariff increase in 2001 on the grounds that there had not been a tariff hike since 1997. From the DVB's point of view, this hike would have decreased pressure for subsequent hikes during the privatisation period, limiting any public association between privatisation and tariff increases. However, given credibility concerns, as a new regulator seeking to build public confidence, the DERC balked at a 35 per cent tariff hike based on an uncertain future promise of gains to consumers. As a result, the DERC allowed only a 15 per cent hike, much to the annoyance of senior DVB officials, one of whom accused the DERC of 'spoiling the opening position for privatisation'.[15] Notably, it is not at all clear whether the Government and the DVB were on one mind on this point, and therefore whether the DERC was taking this stance against or with the Government's view.

A second example illustrates that the element of bargaining was exacerbated by the information vacuum in the sector. According to the privatisation process, the DERC was to set the base levels of Aggregate Technical and Commercial losses (ATC) that future gains would be measured against. A high base level would make achievement of targets easier and privatisation more attractive, while a low level would make privatisation less attractive but ensure consumers earlier gains. While in theory this should be a single figure objectively obtained through data analysis, in practice the lack of basic technical information about the sector meant that it involved considerable guess work. The DERC estimates were probed and challenged by the Government. Participants describe a scene where the principals on both sides supported by their consultants argued over various figures.[16] The DERC ultimately developed eight separate and alternative estimates that were discussed with the Government, of which the highest starting level was finally selected as the base ATC level.

The DERC's actual tariff decisions over the five year initial period provide the third example of how divided control and differing motivations combined to hamstring the reform. For the Government to set the parameters under its control, it had to make assumptions about the DERC's future decisions regarding tariffs. It assumed annual percentage increases of 10-10-10-5-3, over the five years of the transition period as detailed in a cabinet note on the basis of which the privatisation was approved.[17] In practice, the regulator has set far lower cumulative tariff increases, based on its own analysis of the specific requirements on a year to year basis.[18] In the first year there was no filing, and in the second year the DERC set a 5.5 per cent increase. In 2004-5, the regulator refused to set a tariff increase to meet the entire revenue gap, instead raising tariffs 10 per cent and creating a regulatory asset to meet the gap. In 2005-6, the increase was 6.6 per cent. Having set up an independent regulator, the Delhi Government could not credibly force higher tariff increases. Moreover, sensitivity to public unrest over tariff hikes was not the concern of the regulator alone but also a concern for the government itself.

In sum, the combination of divided control and differing motivations – privatisation first for the government and public credibility first for the regulator – was deeply problematic.[19] By attempting to balance the contradictory objectives of limiting regulatory uncertainty to investors and achieving regulatory credibility with the public, neither objective was substantially met.

Impact on Regulator: Greater Politicisation and Heightened Scrutiny

Establishment of a regulator coterminous with initiation of a major restructuring and privatisation as was attempted in Delhi placed the regulator

in the midst of a high stakes game, but with a few parameters removed from its control. The DERC faced a fixed five year timeline for the initial phase of privatisation, predetermined desired outcome (certain loss reductions and revenue neutral and a Discom performance), but without full control over regulatory levers, notably the efficiency gains. There are certainly arguments to consider on whether the regulator was too timid with tariff increases and sufficiently bold in it is monitoring and scrutiny role, issues we consider later in this chapter. However, separate from whether the DERC made the best use of the cards it was dealt, there is little doubt that the privatisation context forced it to operate in a high stakes situation, and before it had an opportunity to establish credibility with the public.

Over the five year period, the Delhi electricity sector has been subject to a review by the Comptroller and Auditor General of India, as well as to review by the Public Accounts Committee (PAC) of the Delhi Legislative Assembly. This context is an important part of understanding the DERC's early performance. A high profile reform inevitably places political pressure on all actors involved, and the regulator is no exception. Thus, ironically, while establishment of an independent regulator is meant to depoliticise decision making, the DERC was required, from its inception, to operate in a heightened atmosphere. To do so would, at minimum, requires an established credibility, which as a body just a year old when the privatisation arrangements were put in place, a problem compounded by a slow start, the DERC did not have. The DERC experience suggests the need for establishing credibility of a nascent regulatory authority before linking the success of a major restructuring and reform to its performance. It also highlights the risk to regulatory credibility of policy instruments aimed to partially by-pass the regulator.

Institutional Structure and Capacity

A Slow Start

The DERC was hampered in its early phase by a lack of understanding of and support for a regulator within the larger bureaucratic establishment. Within Delhi's bureaucratic and hierarchical culture, there was little understanding of where to place the regulator.[20] While the regulator had a high position in the hierarchy according to the statutes bureaucrats within the government did not accord the DERC position much respect. A typical view was that the regulatory role was simply an arithmetical one, and one that two clerks used to perform in the erstwhile DVB.[21] This lack of respect is relevant both for cooperation with the extended government machinery and for the perceived ability of the regulator to enforce his orders.

The DERC also started very slowly with minimal staff and capacity, and only incrementally built up its ability to take on the daunting task of regulating a sector undergoing privatisation. For the first three quarters after establishment, the DERC operated with only the Chairperson, the Secretary, and two support staff, and operated out of a DVB apartment. This time was spent developing basic procedural regulations, such as on conduct of business, human resources and so on, and a concept paper on tariff setting philosophy.[22]

There was no external technical help available to the DERC during this period. As a result, the regulations were simply adapted from templates downloaded from web sites of other previously existing regulators, including the Central Electricity Regulatory Commission. In some cases, based on previous experience, certain sections were drafted from scratch, one example being the regulations on public hearings in the tariff regulations.[23] While there is nothing wrong in principle with drawing on an existing model, there are two reasons to be concerned about this somewhat ad hoc process. First, there are no indications that any assessment was, in fact, conducted to examine whether regulations lifted from elsewhere were adequate. Second, without internal deliberation, the letter of the approach may have been transplanted, but an understanding of the significance of various procedures to the regulatory process - notably stakeholder consultation - may have received short shrift.

The only training available to DERC was through a 'twinning' programme with American regulators that involved exchange visits. The DERC was matched with counterparts at Maryland and Pennsylvania in the US. According to some in DERC, this experience seems to have led to and perhaps strengthened an emphasis on transparent process at DERC.[24] However, according to others, the US system was sufficiently different, particularly in its judicial orientation, to make the experience somewhat irrelevant to the DERC.[25]

This slow start to the DERC, based on limited internal staff capacity and no external assistance is particularly problematic given the enormous demands that would be placed on the DERC within a year or so of its existence.

Commissioner Selection

The individual selected to be the first regulator can have an enormous influence on the institution, since he is responsible for shaping procedures and informal understandings and practices. In the case of the DERC, the selection was particularly important since despite provision in the statutes for a three person Commission, for several years there was but a single Commissioner.

The Commissioner brought a background as an engineer from the Central Electricity Authority. At the time of appointment, he was considered to have the technical skills to do the job, and no there were no suggestions of any improprieties in the selection process. Although his background as a technocrat was somewhat of an anomaly against the prevalence of senior IAS officers as Chairpersons of regulatory commissions in most states, his appointment is the exception that proves the rule. Some internal DERC views suggest that senior IAS officers were peeved at the Chairperson's appointment as they expected the regulator should have come from their ranks, and that this ill feeling came in the way of cooperation with the regulator.[26] Since his appointment, IAS officers have been front-runners to replace him. Most of the front-runners have also been insiders and indeed heads of various key institutions in the sector. Notable candidates include a former Chief Secretary, a former Chairman of the DVB, a former Energy Secretary of Delhi, and the head of the Delhi Transco. Thus, while the Chairperson was not an IAS member, selection process for his successor does provide grounds to reinforce the widespread perception that IAS members and those close to the sector are typically appointed regulators.

There are also anecdotal hints that politicians continue to play a central role in regulatory selection. The formal process of nominating candidates from which a regulator is selected is supposed to be in the hands of an independent selection committee. However, in Delhi differences between the Chief Minister and the Lieutenant Governor of Delhi, who favoured different candidates, have played a role in the selection process.[27] That politicians feel empowered to signal encouragement to one or other potential aspirant suggests that continued political control over the selection process is treated as unexceptional.

Differences between the Chief Minister and the Lieutenant Governor of Delhi are also responsible for the initial failure to appoint a three person Commission. [28] As a result, despite legal provision for a Chairperson and two Commissioners, the DERC made do with a single regulator for its first five years. There are mixed opinions about Chairperson's own preference on this score. A significant number of close DERC observers from within and outside suggest that while he formally supported adding two members, he preferred having full control over the DERC, and consequently did little to realise this objective.[29] This failure to appoint additional Commissioners is significant, whatever the reason, as having three Commissioners is an important part of the institutional design for checks and balances, as well as for breadth in expertise.

The Delhi case also shows how regulators' actions - both professional and personal - are subject to intense scrutiny with implications for public perceptions. Over the first regulator's tenure, there were two related incidents

that were repeatedly mentioned in interviews as having somewhat dented public perceptions of his credibility. During the first regulator's tenure, a newspaper reported a dispute with a DERC employee who accused the regulator of wrongfully firing her after she raised issues of accounting improprieties, while he maintained she was released for poor performance.[30] As part of the accusations traded, the staff member also alleged that the regulator's son improperly took on a position as a management trainee at one of the privatised distribution licensees, only to subsequently resign when his appointment became public knowledge.[31] In both cases, the charges did not hold in a court of law, but the episodes illustrate that regulators face an extremely high threshold in maintaining public credibility.

Following the first regulator's retirement, two Members joined the DERC early in 2005. The first brought a technical background developed at the Central Electricity Authority and the Central Electricity Regulatory Commission, and second is a finance expert from the Power Finance Corporation. The DERC functioned with two members but no Chairperson for a year until the appointment in early 2006 of a new Chairperson, who brought a background in law and tax policy. This extended and punctuated timeline suggests unexplained delays in appointing a full three member commission.

In sum, the DERC's credibility, and perhaps effectiveness as well, were called into question due to the persistence of a single person regulator, the failure to appoint additional Members due to differences between the Chief Minister and Lieutenant Governor, and arguably by perceptions of flawed actions by the regulator himself. That it took nearly a full seven years for a complete three person regulatory commission to be appointed and start operating suggests both unlucky circumstances, and weak political commitment to effective and credible regulation in Delhi.

Staff Selection and Capacity

Attracting and retaining competent staff is a considerable challenge for the DERC. It has become normal practice for key posts to be vacant for long periods. For example, the Director of Law and Director of Tariffs positions were both vacant for almost a year.[32] Previously, the Director Engineering had to double up as the Director Tariffs for a two year period, because the DERC could not find a suitable person.[33] Surprisingly, given high housing prices in Delhi, a significant obstacle to hiring staff is the lack of staff housing available for the DERC to offer aspiring staff. Table 2 provides some summary information on the staff profile of DERC.

The preferred route to hiring staff is through deputation from other government departments. In the case of DERC, not only the utility but also the Central Electricity Authority was a source for appointments. Fresh

Table 2: Staff Profile of DERC

Category	*2000-1*	*2001-2*	*2002-3*	*2003-4*	*2004-5*	*2005-6*
Sanctioned Staff (Officers)	–	25 (19)	47 (19)	46 (19)	70 (27)	75 (27)
Total Staff		4	28	28	26	32
Officers		3	15	16	13	14
Officers with Background from Delhi Utilities			2	1		
Officers with Background from any Other Public Electricity Utility					1	1
Officers on Deputation from Delhi Utilities			2	1		
Budget (Rs Lakh)	54	225	175	225	250	350
Amount Spent on Consultants (Rs Lakh) (% of total)	0 (0)	9 (4%)	7 (4%)	39 (17%)	23 (9%)	90 (26%)

Source: Information in this table was provided by DERC.

graduates from technical or business programmes tend not to be attracted to regulators in part because they have better job prospects elsewhere, particularly consulting, since the DERC is bound by government salary scales. This leaves staff at other power sector utilities or the Central Electricity Authority. Based on the guidelines provided by Government, the DERC first seeks employees on deputation and only after failing to find staff through this route, seeks to hire employees on contracts. If the regulator is risk averse, so are potential employees, who are unwilling to risk a permanent move to an unknown agency. For example, a senior staff member joined DERC because his expected promotion at his home department had not come through. Once his promotion was approved, he returned to his original organisation.[34] However, there may be some early indications that this mutual wariness may be changing, as regulation is increasingly viewed as a growing area. However, to the extent this is true, regulatory bodies are seen as a stepping stone to more lucrative careers elsewhere.

In the opinion of some employees, the transience of regulatory staff, due both to reliance on deputation and rapid turnover, has had a cost on the institutional memory within DERC.[35] It has also had an impact on building a specialised cadre who understand the requirements of a regulatory role, and which takes consistent practice and training. For example, one staff member who was formerly with the Central Electricity Authority said that when he first joined DERC he was 'behaving like a planner' and training and on the job experience is absolutely necessary to inculcate a regulatory approach.[36]

Under these conditions, the DERC relies heavily on consultants to provide necessary skills and expertise. There is little evidence that consultants have transferred skills over time to DERC staff. For example, from its

inception, the DERC relies on consultants to prepare all its tariff orders, a situation that has not changed even after preparation of four tariff orders in the post-privatisation period. Indeed, it appears that consultants have been hired as a surrogate for staff. In the first few years, a preference was given to consultants with past experience with DERC.[37] As the first Chairperson put it, he wanted people who 'understand my thought process'.[38]

More recently, there are signs that the DERC is explicitly trying to enhance its self reliance. For example, the review order for the last two years has been prepared by the DERC without any consulting assistance.[39]

In sum, the DERC has been faced with a daunting challenge in building adequate capacity. Perhaps most worrying, despite some efforts, the DERC has not established itself as a new, high profile, and prestigious place to work, thereby neither attracting entrants from outside the government, nor the most talented staff available within government agencies, a problem exacerbated by high turnover. As a result, the DERC relies on external consultants for core functions, notably the ARR process.

Tariff Review Process

Internal Process

Although the DERC relied heavily on external consultants for the Annual Revenue Requirement (ARR) process and preparation of the tariff order, consultants worked closely with staff and under the overall control of the Chairperson. In the ARR process, staff and consultants would both review the ARR documents, and then bring up issues for discussion. Consultants would then make a series of presentations to the regulator and staff, which would form the basis for discussion, and for queries to the licensees. In general, the division of labour was that consultants would produce the desk analysis and be responsible for preparation of the final order in all its dimensions, while staff would undertake any field visits, and coordinate communication with the licensee.[40] In addition, the Chairperson would use consultants as a brain trust, giving them a list of issues and asking them to prepare material on the listed subjects.[41]

From the consultants' perspective, staff did participate fully in internal meetings, had the capacity to engage on issues, and manage the interaction with licensees. Staff do remain substantively engaged in the ARR process, on occasion differing from consultants and winning acceptance for their views. One such example is an early DERC decision on treatment of depreciation.[42] However, through their role in framing debates through their initial analysis, and their responsibility for writing and delivering the final order, consultants appear to have a more substantial role.

From a staff perspective, consultants were seen as 'basically modellers' who were able to swiftly and competently build necessary models, a skill that was lacking within the DERC staff.[43] However, staff felt that they retained overall control over the regulatory direction, since they provided the principles around which the models were to be built. Staff also felt that consultants, most of whom come with a business background or training, tend to be sympathetic to the licensees, and so the regulator and staff had to scrutinise and verify consultants' input. Moreover, consultants were 'overbooked' and that the time of senior consultants was particular difficult to assure, leading to efforts to specify the number of hours of senior consultants time in the contract.[44] Consultants themselves noted that a team of 5-6 consultants would typically prepare 4-5 tariff orders in a year.[45]

The picture that emerges is of some measure of differing cultures and perspective between DERC staff seasoned in public power entities and technically skilled consultants with a business background. While staff do play a non-trivial role, the external perception from, for example, the regulatory affairs department of a licensee, is that consultants do the bulk of the work on tariff orders.[46] The failure to develop a strategy for training and passing over responsibility, and the challenge of hiring a full complement of trained staff implies that this situation is likely to continue into the future.

Performance Review

The process of reviewing performance in Delhi is somewhat different from other states because of the governance framework for privatisation. Since loss reduction targets were written into the privatisation agreement, the regulator cannot directly control this key parameter. However, the regulator continues to have an important role with regard to both monitoring and enforcement, and can also use various techniques to urge loss reductions over and above the targeted levels. In this section, we explore the actions taken by the DERC related to loss reduction performance, and scrutinise the DERC's efforts at steering the companies using directives and the extent of compliance with those directives.

As suggested earlier (see Table 1), while the overall picture by the end of the five year period is a reassuring one, there are a number of confounding factors. According to a report by an independent research and advocacy organisation, Prayas Energy Group, there are various anomalies in the data reported by some of the companies, which in turn call into question the effectiveness of the DERC.[47] While we cannot verify this analysis, the careful nature of the study, and the failure of either the companies or the DERC to refute the content of the study, suggests these issues are worth considering.

The Prayas study finds that in the early years, BRPL and BYPL met their AT&C targets largely through gains in collection of arrears, rather than through loss reduction. This is problematic, since it suggests that the gains are one time, and that the companies have not managed to bring down the key parameter of losses. Second, they found anomalies in the Average Billing Rate for BRPL and BYPL, in particular, a dip for a couple of years even though one would expect a steady increase in the ABR. This is significant, since for the same overall realisation rate, a lower ABR makes the AT&C loss levels appear lower than they are, but this anomaly was not discovered or discussed by DERC. While the study does not explicitly say so, the implication of this finding is that loss reductions were produced through data manipulation rather than real gains on the ground. Finally, BRPL and BYPL report that consumption figures for all major commercial and industrial categories decreases in the year 2003-4. This unexplained decrease, to the tune of about 10 per cent and 17 per cent of commercial and industrial consumption for BRPL and BYPL respectively with obvious implications for revenue requirement, was not initially picked up by DERC, although they have since looked in the issue.

Regulatory Proactiveness or Reactiveness

In this section, we draw on interviews to develop a picture of the DERC's engagement at the micro level, to understand whether and how it corresponds to the macro picture. In particular, was the DERC relatively irrelevant to sectoral performance, which was dictated by individual company drivers and the overall incentive framework, or did the DERC play a proactive role in sector performance?

To begin with, the iterative, often informal, and non-transparent nature of interaction between DERC and the licensees in the course of scrutinising the ARRs and filling data gaps makes an assessment of the DERC's scrutiny somewhat challenging to carry out. Following submission of the ARR, the DERC submits deficiency notes to the petitioners, and follows up with meetings to review material and discuss questions of fact or interpretation. Some of these meetings may be minuted, while others are informal meetings. As in the other states studied, these 'technical validation' meetings are neither publicly announced nor are they open meetings. Therefore it is hard to establish whether the DERC is fully diligent, and how they negotiate the line between reasonable scrutiny and micro-management.

A scrutiny of minutes of meetings held prior to the 2004-5 tariff order, and deficiency notes sent by the DERC for the 2005-6 orders, and, both obtained from DERC, shed some light on the nature of the DERC's scrutiny.[48] The DERC queries are largely of a gap filling nature. A recurrent theme is requests for scheme-wise capital expenditure details and execution

of these works, a topic which we examine in the next section. Other queries focused on obtaining quarterly sales and revenue figures, and other financial revenue figures such as details of loans, cash and bank balances, and tax returns. These documents provide at best a partial picture and a single snapshot of what is a long series of interactions. The absence of further probing in these documents by no means proves that DERC did not conduct such probing, both because the documents are partial and because deeper investigations may not have been written. However, it does suggest the need for a clear and cogent publicly available paper trail on DERC investigations that the public can access, which is not currently available.

More instructive on the DERC's approach to scrutiny are interviews with the regulator and senior DERC staff. The first Chairperson suggested that the regulator 'must give some flexibility' to the companies, otherwise the regulator risks becoming a micro-manager.[49] As he stated, 'I am not a policeman, I am not an auditor, I am a regulator'. An example of this regulatory style was the creation of a regulatory asset, which the first regulator viewed as a measure to simultaneously manage a tariff shock and trigger efficiency gains. These comments seem to suggest a regulatory approach that rested on surveying the big picture, and perhaps benchmarking, but not delving into the details, particularly in the early years when the companies were finding their feet. This message certainly came through to DERC staff who suggested their work 'should not be seen as an investigation'.[50]

This self-imposed check on scrutiny appears to have slowed or stifled various DERC initiatives. For example, there was internal discussion within DERC of imposing a bidding requirement for contracts beyond a certain amount.[51] This effort was motivated by an internal perception that some of the licensees may be inflating costs of equipment and services sourced from sister companies. Interestingly, this perception was also shared by consumer groups.[52] However, in the view of the Chairperson, this requirement would be unduly restrictive on the freedom of the companies to seek their own avenues for best performance.

In another example, DERC staff proposed measures to better understand the billing and payment system.[53] One measure would have required all bills for more than Rs 4,000 to be paid by cheque rather than cash, but was rejected by the regulator on the basis that small consumers without a bank account may be disadvantaged. This measure was subsequently introduced in 2005-6 under a new set of regulators, triggered by new income tax policies that set Rs 4,000 as a threshold for tax scrutiny.[54] In addition, DERC finance staff sought to look more carefully into the revenue stream of Discoms to understand how bill payments were tracked and processed. Once again, this measure was not approved.[55] However, in 2005 the DERC did start sample checks of licensee books to follow the cash trail in order

to better understand AT&C losses.[56] These early failed efforts at greater scrutiny take on particular significance given the evidence of anomalies in ABRs that emerge from a scrutiny of tariff filings.

In other cases, the DERC failed to investigate issues that were raised by stakeholders. For example, Delhi Transco had raised the issue that per unit realisation was not as expected.[57] Delhi Transco also noted that domestic consumption was growing and commercial and industrial consumption was lower than expected, despite load growth over the same period.[58] The failure to explore these issues is particularly problematic given that they were drawn to the attention of DERC by stakeholders. Once again, more recently, the DERC has followed up on these issues.[59]

While there is a legitimate case that regulatory scrutiny can be over-intrusive, in the light of credible investigations that show uninvestigated anomalies in billing rates and consumption levels, these examples suggest that DERC could certainly have been more proactive in its early years. Perhaps most problematic is the failure to explore specific issues raised by stakeholders. It appears that DERC staff sought to dig deeper in some areas, presumably based on information that suggested a need for further investigation, but were held back by the hands-off regulatory approach. More recently, the DERC has adopted a more proactive approach, revisiting and introducing some of the measures it had considered but failed to implement earlier.

Directives Compliance and Use of Penalties

One important way in which DERC attempts to steer and guide the Discoms is to issue directives with every tariff order. This section we examine the types of directives issued, the follow-up actions of the DERC in case of non-compliance, and the use of the DERC's statutory authority to issue penalties to enforce compliance with its directives or orders.[60]

In the early years, the DERC used directives to fill in the weakened information base, requiring development of a Management Information System, introduction of computerised billing and preparation of fixed asset registers.[61] Other important directives included adherence with the DERC's performance standards regulations, submission of a Detailed Project Report (DPR) for all capital investment schemes and obtaining approval for a subset of them, and provide district level data on AT&C losses. Many directives require the Discoms to seek prior approval before committing expenses, such as for increases in repair and maintenance expenses.

Compliance with these directives and DERC follow-up was mixed. For example, while preparation of fixed asset registers and details of capital works in progress was directed in February 2002, by October 2003 all three Discoms had only produced partial information, claiming that they

needed further information from the Government to fully comply. By June 2004, this information had not been received, and there is no further follow up action by DERC. In the important example of adherence with DERC's Performance Standards Regulations issued in June 2003, all three Discoms report in June 2004 that they are in the process of implementing these regulations, but DERC notes continued consumer complaints. However, there is no further follow up by DERC.

Other directives were more thoroughly followed up. For example, a June 2003 directive to submit full DPRs for capital investment schemes was followed up for the three subsequent years after only partial compliance. A directive requiring installation of meters at the periphery of districts in order to compute district wise AT&C losses was not complied with a year later, but after further follow up in 2004, was fully complied with by 2005. An important 2005 directive to provide more transparent reporting on energy input, sold, billed and revenue realised was complied with by all companies, although the DERC noted that there was a delay in submission, and urged more timely future submission. A second directive requiring that payment of more than Rs 4,000 be paid by cheque was not complied with, with all companies reporting that the software was not available for this task. The DERC ordered that the software be modified and the directive complied with within a month.

From a transparency and accountability perspective, the DERC's approach of clear and distinct reporting on directives, at least in the subsequent year after a directive is issued, is creditworthy. Directive compliance is reported in a separate section of each tariff order, in a manner that allows stakeholders to rapidly and easily gauge compliance.

Figure 1 provides a moving snapshot of DERC reporting on compliance with directives, organised by the start year in which directives are issued. The two BSES companies are clubbed together for convenience. This figure allows us to examine both the rigour with which DERC follows up its directives, and the extent of compliance. Thus, the first cluster of bars, which represents year by year reporting on directives issued in 2001-2 shows that after just the second year, the DERC fails to follow up with compliance on its directives, with most directives going unreported upon for both sets of companies. In another example, of the 15 directives issued in 2003, by 2006 ten are complied with but five remain unreported upon for the BSES companies, with a similar picture for NDPL. For directives issued in 2005, DERC fails to report on four of seventeen directives to BSES companies in the following year, and three of sixteen NDPL directives, although compliance rates are higher than in the early years.

Another tool available to the regulator to steer the licensees are its powers to issue penalties. Under the Delhi Electricity Reform Act, 2000, Section 33(1) the DERC is empowered to impose fines up to one lakh

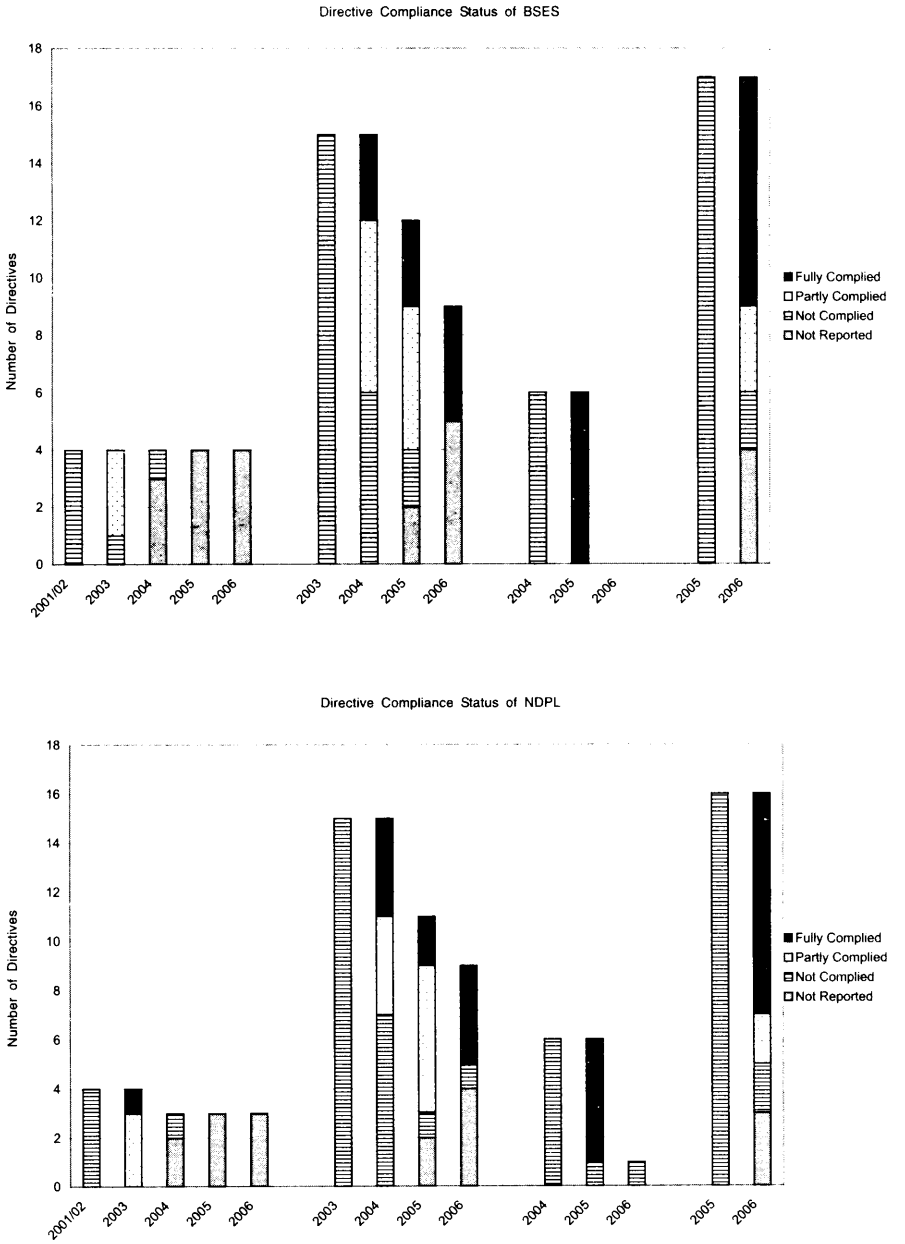

Figure 1: Compliance with DERC Directives, 2001-2 to 2006

Note: Each cluster of bars tracks compliance and reporting status – fully complied, partly complied, not complied and not reported – for directives issued in the first year of the cluster. Thus, the first cluster of bars tracks and reports on directives issued in FY 2001, the second covers those issued in 2003, and so on. The data are drawn from successive years of DERC tariff orders.

rupees for non-compliance with its directives or orders plus rupees six thousand for each additional day of non-compliance. An identical fine is allowed for under Section 142 of the Electricity Act 2003. How were these provisions used by the DERC?

The DERC's most high profile use of a penalty occurred in 2004-5 in response to under-achievement of capital investment by both BYPL and BRPL. The DERC imposed a 'token penalty' of Rs 1 crore on both companies while estimating the ARR for that year, particularly against the under-investment but also in the context of broader non-compliance.[62] Notably, there had been considerable stakeholder pressure for imposition of penalties against non-compliance.[63] The penalty was applied against a total approved revenue requirement of Rs 250 crore for BYPL (reduced from a petitioned amount of Rs 570 crore), which suggests that a Rs 1 crore penalty is indeed, only a token amount. Nonetheless, against a backdrop of regulatory commissions that are reluctant to impose penalties, it is noteworthy that the DERC sought to signal that non-compliance with its directives would be penalised.

With regard to penalties imposed on the distribution companies pertaining to consumer grievances, a very strong pattern emerges of extremely limited use of the penalty provision upto 2004, and considerably greater use of the penalty provision from 2005 onward. Notably, this shift has occurred at roughly the time of transition from the first regulator to the second set of regulators. Prior to 2005, the DERC imposed only one penalty on BYPL of Rs 1,000 for failing to comply with a DERC order to rectify an incorrect bill, and for not acting to correct its error despite having had ample time in which to do so.[64] By contrast, from September 2005 to December 2006, the DERC has imposed 30 penalties, ranging from a low of Rs 500 to a high of Rs 1,00,000, with most cases clustering between Rs 5,000 and Rs 10,000.[65]

Prior to 2005, there do appear to be cases where penalties were justified but not imposed. For example, in one case, BRPL sought to wrongfully collect revised connection charges of Rs 1,350 per KW versus the actually applicable charge of Rs 100 per KW amounting to a substantial difference of Rs 10.5 lakh. By dint of BRPL's failure to submit to the DERC and have approved its schedule of charges before applying revised charges, BRPL was charged with violating the DERC's Performance Standard Regulations. While finding this to be so, the DERC asked BRPL to make a submission in this regard, but did not follow up the case and impose a penalty.[66]

There may be multiple explanations for the shift in the number of penalties starting in 2005. Prominent among them is the establishment of the Consumer Grievance Redressal Forum in late 2004 and the possibility that more cases have been referred to the DERC in recent years. A full examination would require obtaining information about the number of cases placed before the DERC in the two time periods. However, based on the information available, it seems highly likely that there has been a shift in

regulatory style toward greater willingness to impose penalties on the licensees for consumer complaints after 2005.

In sum, the DERC stands out among regulatory commissions for having imposed a substantial penalty on a licensee for performance, here for under-achievement of investment. It also penalised behaviour that was anti-consumer, but the approach to doing so shifted dramatically in late 2005, with a new set of regulators using the penalty power far more freely than the first regulator appeared willing to do. Prior to this period, the DERC appeared at pains not to be perceived as an aggressive and intrusive enforcer, especially in the start up phase of electricity reforms in the state.

Investment Scrutiny

In the high pressure reform environment of Delhi, the DERC faced the job of balancing the need for rapid and large investment as a way of improving performance and reducing losses, against the well known incentive to 'gold plate' under cost plus regulation, and the willingness of consumers to bear tariff hikes driven by high investment. In this context, what was the DERC's approach to scrutiny of investments made by the Discoms?

The Commission did take several steps toward careful scrutiny of investment plans. In particular, the DERC reduced the expenditure allowed well below that submitted by the Discoms on a number of occasions, introduced a requirement for scheme by scheme scrutiny, undertook site visits to verify investment, and substantially censured what was, in practice considerable underinvestment against the approved amount by some of the companies, even imposing a fine on one occasion. Some of these efforts become clear from a quick review of various DERC orders.

In the first year post-privatisation (2002-3), all three Discoms invested far less than claimed in the petition, giving the argument that the short-term need was repair and maintenance work to strengthen the existing system. The DERC stated that it 'understands and accepts the compulsions' of the Discoms, but suggests that capital expenditure has to be undertaken on a priority basis.[67] As part of its scrutiny the DERC sought information on the status of the actual expenditure for 2002-3, and the preparedness to execute investments in 2003-4. This information was analysed and, in addition, DERC conducted sample checks starting with the procurement process through to certification of completion. Based on this scrutiny, the DERC directed the petitioners to submit scheme-wise reports and to obtain its approval for all future capital investment schemes.[68]

For the second year (2003-4), the DERC found that capital investments were far lower than projected for the two BSES companies – 27 per cent of claimed investment for BRPL and 26 per cent for BYPL – which was explained by the lack of updated field information and failure to obtain

land.[69] By contrast, NDPL had invested 85 per cent of its petitioned amount. In addition to criticism for these low investment rates, the DERC took the two BSES companies to task on a number of counts, noting that the BSES companies had only partly complied with its directives to submit scheme-wise reports, and had failed to submit a key network optimisation study which provides evidence of its preparedness to undertake capital expenditure. As a result, for the following FY 2004-5 year, the DERC approved only an amount equal to 46 per cent of the petitioned amount for BRPL and 36 per cent for BYPL while allowing 100 per cent for NDPL. It also directed all the petitioners to submit the complete DPR and cost-benefit analysis for schemes of more than Rs 2 crore to obtain scheme-wise approval.

By 2004-5, the BSES companies claimed investments well in excess of the approved amounts.[70] However, the DERC was unconvinced, and spelled out quite clearly the reasons why it did not feel it prudent to allow the full investment. For example, for BRPL it argued that the expenditure did not correspond to the scheme-wise approval of the DERC, that capital costs were higher than that approved by them, and that the company had failed to submit scheme-wise actual expenditure. Moreover, they found indications – such as a substantial increase in inventories – to suggest that while BRPL had purchased equipment this had yet to be utilised in works. Finally, BRPL had failed to submit scheme-wise details of actual expenditure. Based on these reasons, DERC only considered expenditures equivalent to the amount approved in the previous order for the purpose of the ARR, but stated that these expenditures would have to be approved on a scheme-wise basis. In 2005-5, as noted earlier, the DERC fined by BRPL and BYPL a 'token' penalty of Rs 1 crore off the ARR due to the under-achievement of investment by the two companies.

For the following year (2005-6), the DERC found the submitted expenditure of Rs 1,400 crore too high (by comparison NDPL had submitted Rs 303 crore, although for a smaller area). Instead, it approved investments at a 'normative' level, based on actual investments over three years, amounts invested, and loss reductions claimed as a result. This worked out to 34 per cent of the petitioned amount for BRPL and 36 per cent for BYPL, while NDPL's full submitted amount was approved. Any amount in excess of this normative amount would be subject to a cost benefit calculation. Finally, the DERC directed submissions of DPRs for schemes in excess of Rs 2 crore as before, but also schemes less than Rs 2 crore but that aggregated to Rs 20 crore.

Thus, the DERC did reduce petitioned investment amounts considerably, often by more than half in the case of the two BSES companies. In its review in the succeeding year, the Commission also frequently disallowed substantial components of claimed investment, again

to a greater extent for the BSES companies. This scrutiny undoubtedly saved the consumer considerable expenditure. However, even after these efforts, judgements on what is an appropriate scale of investment in a rapidly changing sector are contested and may vary. According to the study by Prayas Energy Group, the DERC approved investments that were five to seven times higher than the levels estimated by the pre-privatisation consultant, and about three times higher than investments made per MW by another rapidly reforming state, Andhra Pradesh.[71] Given that these are widely different numbers, the DERC would have been well served to carefully argue and publicise the basis for its investment review and approvals.

Use of Site Visits

Not all the evidence available to the DERC is documented in the orders, which is the basis for the discussion above. The 2004 and 2005 orders do make mention of site visits conducted by DERC staff, but do not report on those visits. Based on interviews, however, these site visits do appear to have uncovered evidence of inflation of capital expenditure.[72] In one example, old equipment with 1970s identification plates were installed, although the petitioner had claimed new and much more expensive equipment had been installed. This finding was backed by photographic evidence. As a result of this investigation, the approved value of the works in question was reduced dramatically, to 3 per cent of the submitted amount. However, this finding was not documented in the order, nor was it publicised, nor was any penalty imposed on the licensee.

Among stakeholders, there was certainly a perception that the DERC could have done more, particularly on the concern of inflated costs. These concerns were expressed formally, notably by Delhi Transco and the PHD Chamber of Commerce and Industry.[73] In the opinion of observers from Delhi Transco, for example, more could have been done to bring costs down through competitive bidding, board scrutiny and benchmarking.[74]

Finally, it is not fully clear whether DERC sufficiently carefully assessed whether proposed investments were matched to the priorities of the reform effort. Delhi Transco, in particular, has questioned whether the consumer should be asked to pay the costs of corporate offices, and high technology automation projects, which are arguably not central to the primary goal of loss reduction.[75] In response, the DERC has merely stated that it has examined scheme-wise investments before determining the ARR, but does not comment on the substance of the objections.[76] In more recent tariff orders, however, the DERC does appear to be moving in the direction of greater explicit consideration of relative costs and benefits, with explicit mention made of seeking least-cost options.[77]

In sum, while the DERC has exercised considerable control over the investment costs, and taken the rare step of site visits, there remain some gaps. These include no transparency on the site visits, and a failure to adequately scrutinise, or at least explain, how it assesses whether and how investment schemes meet priority needs.

These limitations are consistent with the approach of the first regulator, for whom it was important to provide flexibility to the companies. Indeed, the approach taken was that it is the 'responsibility of the company to prove prudency' rather than the task of a proactive regulator.[78] However, given the DERC's own scepticism of the investment plans of some of the companies, as evidenced by its decision to drastically reduce investment amounts, and concerns raised by knowledgeable stakeholders, there is a case to be made for a more proactive attitude to investment scrutiny.

Tariff Decision

The annual tariff decision, politically charged at the best of times, was perhaps even more so in Delhi. On the one hand, the DERC faced the looming deadline of a five year transition period after which the sector was meant to be financially self sustaining, increasing the pressure for tariff hikes. On the other hand, the regulator faced a highly mobilised and politically vocal public in India's capital city, who vocally resisted increases. Moreover, the DERC had to contend with an anxious government that had staked much of its political credibility on successful electricity reform. In this section, we examine how the DERC dealt with these pressures.

Informal Communication with the Government

The overwhelming impression among stakeholders from all segments was that the DERC communicates closely with the government on its tariff decisions. For some, the perception was that the Chairperson of the DERC held discussions with senior politicians prior to tariff decisions in order to seek advice on the political acceptability of tariff decisions, and to coordinate on a final decision.[79] For others, the impression was of even less independence, that the government predetermines the acceptable tariff decision and the regulator conforms to the government's diktat on political acceptability.[80] As one interviewee put it, the government 'assumed a superior role over the regulator and the regulator was not able to say "this [tariff setting] is my role"'.[81] None of the stakeholders interviewed for this study expressed a view that over the first five years the regulator had established a track record of independent decision-making, particularly on tariff setting.

These perceptions by no means confirm that the regulator was, in fact directed by the government. However, they do point to a very considerable

problem of credibility for the DERC. If the public perception is that regulatory decisions remain under the control of the government, then faith in the regulatory system can rapidly erode. Indeed, as we discuss later, the choice of the Delhi public to make representations directly to the government rather than to the regulator may well be driven by a public perception that despite the establishment of a regulator, decision-making power continues to rest with the government.

A Conciliatory Approach to Regulation

In its decision-making, the DERC had to balance its demands on consumers, the Discoms, and the government. To balance the books, it either had to increase tariffs, request greater subsidy, or squeeze Discom revenue requirements. While the DERC took some steps in all these directions, based on a scrutiny of its regulatory decisions, the early years of the DERC are characterised by a reluctance to take any of these difficult steps sufficiently far to ensure the future financial health of the sector. While balancing interests is a key part of a regulator's job, the DERC has operated through a form of regulatory triangulation, seeking to limit its demands on all three key constituents.

With regard to demands on the public, the DERC's orders are peppered with references to the need to be sensitive to public sensitivities, and its tariff increases have been limited. For example, in 2003 the DERC noted that it is aware that tariffs for the domestic category increased by 22 per cent in the previous year against an overall increase of 15 per cent, so chooses to limit the increase in 2003 to 5 per cent.[82] Similarly, in its 2004 order, the DERC notes that given that the quality of supply has not improved 'to any great extent. . . it will not be fair to inflict a sharp increase in the tariffs on them [the consumer]'.[83] As a result the DERC raised tariffs 10 per cent and created a regulatory asset to meet the remaining revenue gap, as discussed further below.

If the public was let off lightly, what of the Discoms? The argument that the public should not be asked to pay for the sins of ill-performing companies certainly have merit. It is the case that the DERC did take some measures to bring down costs, notably through revising downward investment plans, and on one occasion imposed a penalty on two firms for underinvestment. However, as the sections above on performance and investment conclude, on the whole the DERC adopted a hands-off regulatory style. This light-handed approach persisted despite calls from various stakeholders to investigate specific issues, and perceptions within the DERC itself that the situation called for more aggressive scrutiny.

With regard to the government, if the perceptions about informal communication between the DERC and the government are correct, then

the DERC was mirroring government judgements on the political acceptability of tariff increases. The Government did also raise the subsidy level midway through the five year transition period, which gave the DERC a little more breathing room.

In brief, in its early years the DERC seems to have adopted what one stakeholder called a 'don't rock the boat' and another referred to as a 'conciliatory' regulatory style.[84] This approach rests on taking a soft option that appeals to the largest possible number of stakeholders, but at the cost of a limited time horizon. This approach contrasts with the motivation behind establishment of an independent regulator, that such a body would be less prey to short-term political pressures. Instead, the DERC seems to have substantially internalised government political pressures. The larger question is whether the DERC could have done a better job of insulating itself, or whether the assumption that a regulatory agency can operate in this insulated manner is itself questionable.

Creative Adjustments

In the first three or four years of the transition period, this approach of regulatory triangulation with a short horizon left the regulator with large revenue gaps. The DERC took various steps that they justified as rational and defensible, but which were seen by many stakeholders as a way of avoiding having to push any of the three key groups – consumers, Discoms and Government – to agree to challenging regulatory steps. Here we briefly discuss two of these measures – accounting of arrears collection from the DVB era, and the establishment of a regulatory asset in 2004.

According to the transfer scheme of the Delhi Government, collection of any arrears owed to the former DVB were to be shared between the Holding Company created as part of the transfer scheme and the Discoms in the ratio of 80 : 20. However, in its very first order post-privatisation, the DERC argued that the 80 per cent allotted to the Holding Company, which the Government intended to use to pay down past liabilities, represented revenues that should not leave the sector and should go to Transco. The benefit, of course, is that the revenue gap would shrink by an equivalent amount. Consequently, the DERC treated arrears as accounted to Transco and requested the Government to revisit the matter and suitably amend the transfer scheme. There followed a lengthy and repetitive set of exchanges between DERC and the Delhi Government. The Government refused to amend the transfer scheme, whereupon in its 2004 tariff orders the DERC once again made the case for amendment and resubmitted to the Government, only to have it rejected again. Despite being rejected twice, the DERC stuck to its guns and retained the same approach – considering

80 per cent of arrears collection as Transco revenue – in its 2005 and 2006 orders.[85]

The contribution of the arrears collection to limiting the need for a tariff hike is considerable. At its high point in FY 2003-4, the arrears collection stood at Rs 210 crore, approximately twice the Rs 103 crore that the sector earned from the tariff increase of 5 per cent.[86] The DERC itself estimated that the arrears collection had added Rs 330 crore in the first three years, and absent this amount the tariff would have had to go up another 9 per cent in 2004.[87] Substantively, the DERC based its case on the argument that in all its prior calculations, such as setting the base levels of AT&C losses, no distinction is made between collection of past receivables and current outstanding dues. Indeed, the confusion arises from the division of responsibilities between the Government and the DERC in setting up the governance framework for privatisation, with insufficient coordination between the two. That the government has allowed the DERC to repeatedly flout the transfer scheme is surely explained by the Government's own interest in limiting tariff hikes, even at the expense of failing to pay down past liabilities. As one former bureaucrat put it, the Government objected at the bureaucratic level, but not at the political level.[88]

In a second example, the DERC created a regulatory asset to meet a substantial revenue gap that would otherwise have required a 30 per cent hike in tariffs.[89] In subsequent discussions, the regulator suggested the regulatory asset was a clever piece of regulation that triggered efforts at efficiency gains from all the Discoms and Delhi Transco, in order to minimise the amount of time they had to carry it on their books.[90] However, it is noteworthy that the regulatory asset was effectively apportioned between the three Discoms and the Transco based on various measures of the sise of each company and had little to do with structuring incentives for performance.

The decision to create a regulatory asset was controversial, and was disputed before the Appellate Tribunal by the three Discoms. In its decision, the Tribunal did not accept the rationale offered by the DERC, suggesting that 'pre-judging . . . the issue with a notion to avoid tariff increase . . . itself constitutes sufficient cause for interference on the ground of bias'.[91] In essence, the Tribunal argued that the DERC had side-stepped the intent of the Government's policy directive, and should have instead steadily increased tariffs 'though it may lead to a hue and cry among a section of consumers, who fail or refuse to acknowledge realities'. One does not have to agree with the specific solution of the Tribunal – an alternative would have been greater scrutiny of Discoms leading to reduced revenue requirements and enhanced performance – to agree with the larger judgement that the DERC

has sought to avoid confronting difficult decisions in the sector. Both examples discussed here are consistent with a conciliatory approach to regulation aimed at judging and staying within limits of acceptability, and instead finding creative solutions to balancing the books, even at potential long-term cost to the sector.

Change in Regulator: Did it Bring a Shift in Style?

The discussion above has focused almost exclusively on the DERC as it operated under the first Chairperson.[92] Based on the limited evidence available so far, the new leadership of the DERC is less concerned with managing political realities and more direct in their approach. For example, in their 2005 tariff order, the DERC increased tariffs by an average of 6.7 per cent but in keeping with the overarching policy direction provided by the Electricity Act, increased the tariff of subsidised categories, notably domestic, by 10 per cent.[93] By contrast, in his order of 2004, the previous Chairperson had decided that given public irritation with metering and billing problems and low quality power, he would not take steps to remove cross subsidies, and pegged the domestic tariff hike at the level of the average.[94]

The more direct approach of the new DERC leadership sparked considerable consumer protests, and forced a political crisis. Faced by growing public protests, the Delhi Government had to ultimately step in and defuse the situation by agreeing to pay half the tariff increase and requiring the Discoms to pick up the other half.[95] Various stakeholders, not only from consumer organisations, but also from industry and Discoms, were critical of the by-the-book approach of the new regulators, and felt that the DERC should have anticipated the public outcry.[96]

The new leadership has also adopted a more proactive approach backed by a greater willingness to investigate. Examples of this approach include sample checks of licensee books, greater willingness to levy penalties, and more aggressive examination of issues raised by stakeholders.

The DERC thus presents two examples of regulatory style, one based on politically astute triangulation with potentially problematic long-term consequences, and another based on a more proactive regulatory style and forthright decisions without an eye to political niceties, which result in short term problems. In a politically charged context like Delhi, where the regulator has to steward rapid change without alienating powerful constituencies, effective regulation would appear to require some political astuteness. At the same time, if difficult decisions are not to be deferred to the indefinite future, effective regulation would also appear to require a firmer hand at the tiller, and more detailed oversight of a rapidly changing sector.

Quality of Service

Public unrest over quality of service for Delhi's consumers has been a critical issue, affecting both the public perceptions of the Delhi electricity reform and the credibility and competence of the regulator. Public complaints against perceptions of over-inflated bills, inadequate grievance procedures, lack of responsiveness from the Discoms and the like have simmered since the early days of the reform.[97] From the perspective of this study, the important question is the extent to which and proactiveness with which DERC sought to intervene on this important subject.

The DERC did pass a Performance Standards (Metering and Billing) regulation in mid 2002, which laid down standards of service quality on important issues such as how complaints were to be handled, metering procedures, disconnection and pilferage and so on. These regulations were drawn largely from available regulations, notably those in Orissa, and modified through an internal process of revision.[98] Although there was a public process of comment, these comments were not closely scrutinised nor used by the DERC due to lack of available staff and expertise. In 2004, these regulations were supplemented by additional regulations for establishment of a Forum for redressal of consumer grievances, and establishment of an ombudsman.

However, after passing these regulations, both staff within the DERC and close observers note that the Commission did not devote much time and attention to following up and reporting against the performance standards.[99] As with the regulations themselves, the lack of staff and capacity were cited as a reason for a muted follow up. Moreover, the DERC, at the request of the Discoms that pleaded the need for more time to put in place systems, had postponed the enforceability of the penal clauses in the regulations.[100] The lack of attention is reflected in the DERC orders, where in response to consumer complaints about billing and metering, the DERC simply refers to the 2002 Performance standards, and exhorts the Discoms to improve performance. These comments are made in response to consumer statements, but there is no systematic section in the tariff order that provides information on and discusses progress in quality of service. Perhaps most problematic, the DERC does not appear to have made a systematic effort to request information on quality of service parameters such as quantity and type of complaints, status of redressal, functioning of the grievance redressal forum and other such information on a regular and sustained basis.[101]

The public perception continued to be that the DERC had not taken sufficient steps to address quality of service issues. This unrest bubbled over into public protest, particularly after a tariff hike in 2005. Resident Welfare Associations, in particular, organised public meetings and rallies in August, November and December 2005 protesting what they perceived as inflated

bills, forcible changing of meters.[102] They also saw the tariff hike as particularly unjustified given perceptions of bad service quality. The DERC was not exempt from this criticism and described as a 'mute spectator'.[103]

However, the DERC had not been entirely inactive. In 2004 it conducted suo moto proceedings on metering and billing in response to consumer complaints. Noting that it was dissatisfied with the performance and the delay in putting systems in place, the Commission once again issued directions, which as it noted, were already in the existing regulations, but it did not take any further follow-up measures, and notably established no system of data collection on service quality. The DERC also sought to engage the public through advertisements in newspapers providing information and awareness on issues relating to metering. As a follow-up step, the DERC led a meter testing drive, which did not show many faulty meters, but did show faulty wiring.[104] The DERC also commissioned two studies of billing systems, once in November 2004, and one in January 2006. However, the results of these studies have not been made public. Finally, the DERC returned to a comprehensive review and revision of its Performance Regulations, which it had initiated in 2003, soon after the initial regulations were framed. While this revision process had been ongoing in the background, the process accelerated in 2005, with a draft set of regulations put out for public comments in October 2005.

From this brief review, the DERC appears to have got its formal structures for quality of service – the regulations – in place early. Even here, however, the initial regulations suffered from procedural problems. The revised regulation has been subject to much more thorough review, but the preparation process has taken three years due in part to delays resulting from situations beyond the DERC's control, such as a public interest litigation and a stay on the release of the regulations. Where the DERC is most vulnerable to criticism that it did not take adequate proactive measures on quality of service lies in its failure to systematically gather data from the Discoms using internationally recognised performance standards and, as a result, in its very restricted follow up with regard to enforcement of regulations. While it made public comments in support of consumer perspectives, the lack of enforcement failed to convince the public that the DERC was a trustworthy recourse for its quality of service concerns, which led to open public unrest.

Rule-Making

The DERC has been somewhat reticent in its rule-making function, particularly with regard to market-framing regulations. After an initial flurry of regulations required to set up the regulator, the DERC had a period of

relative quiet, punctuated only by consumer redressal related regulations. In 2005, however, the DERC did approve regulations on trading activity and open access regulations. In this section, we examine how the DERC went about its regulation-framing tasks, with a particular emphasis on the procedural dimensions and the role of stakeholder inputs.

The establishment of open access rules as mandated by the Electricity Act 2003, has the potential to entirely transform the sector, and is, therefore, a significant piece of regulation. In Delhi, however, the actions of both the DERC and stakeholders suggest a far more lack-lustre process than the issue deserves. Notably, the DERC has so far only tackled the open access regulation itself, and not the associated and more politically charged question of cross-subsidy surcharge. It remains to be seen if the surcharge issue arouses more debate and deliberation.

According to DERC personnel, the rules were drafted drawing on the experience with other states.[105] The draft regulations allow for phased introduction of open access over a year for customers with connected load of one MW and above. According to the DERC, there are about 200 or 250 consumers that meet this profile in Delhi.

The draft regulation was posted on the DERC web site and a notice seeking comment was published in several newspapers in mid 2004. In response, only four responses were received: one from an individual, one from the PHD Chamber of Commerce and Industry, and two from the distribution licensees.[106] The content for the first two is identical, probably because the individual has worked as a consultant for the Chamber. Hence there are only 3 distinct substantive comments. Given the small number of comments, the DERC decided to forego a hearing on this issue. However, the Commission did issue an order discussing and explaining its responses to the various stakeholder views, and providing reasoning for its final decisions. Production of an order accompanying regulation is a positive step, since it provides stakeholders a basis to understand whether and how their comments have been used and incorporated into the final order.[107]

The comments by the individual and the Chamber asked for clarity on the methodology for pricing and energy accounting. The DERC decided to defer these issues to a later date. In addition to procedural suggestions, both licensees try to suggest greater rights for themselves in the rules. NDPL suggests giving the licensees themselves the right to sanction new load. BRPL/BYPL suggests that existing licensees should be the last in curtailment priority in the event of capacity shortage. The DERC rejected both views and instead handed over these decisions to separate nodal agencies. The DERC did, however, accept certain procedural suggestions and suggestions on dates by which open access would be phased in following from the comments.

In sum, the open access regulation has been subject to little discussion, particularly given its importance, because of a failure to use due process to

stimulate engagement. This sparse debate speaks to the challenge the regulator faces in stimulating real discussion on 'upstream' policy issues that have great significance for consumers, but are technical and remote. Part of the responsibility surely lies with consumers and consumer groups, including industry associations who could, perhaps, have done more to organise discussion around this important issue. However, the question arises as to whether a more proactive DERC could have made more effort to educate and stimulate debate on this issue, perhaps by issuing a discussion paper pointing out the implications of different forms the rules could take. In particular, that the DERC decided not to hold a hearing at all rather than stimulating more participation speaks to a somewhat fatalistic rather than proactive approach to regulation.

The lack of internal DERC capacity is one reason cited for the limited success at engaging the broader public in the rule-making process.[108] For example, while issuing discussion papers is a potentially effective means of engaging the public, the DERC has typically failed to produce such discussion papers. It is notable that on this score, as well, there appears to be a shift toward greater public engagement, with the 2006 publication of a discussion paper on multi-year tariffs. This is a welcome development, and perhaps indicates a greater attention within the DERC to proactive engagement with stakeholders in the rule-making process.

Stakeholder Engagement in Practice

The DERC had in place procedures for transparency and public engagement that are broadly consistent with those of other regulators. In this section we examine how these procedures were operationalised. With the high visibility of the reforms, and the deeply political nature of the Delhi public, having structured and institutionalised means of public engagement were very important since the likely alternative is political mobilisation. In Delhi, as we discuss below, the DERC's credibility with the public did suffer over the course of the reform process, leading to pressures for the Government to step back in. Here we examine stakeholder engagement in practice using the categories of transparency, participation and accountability.

Transparency

The DERC's Conduct of Business regulations state that records of the DERC's proceedings shall be open to inspection by the public, unless the DERC specifies certain parts confidential or privileged.[109] During the course of this project, the DERC was accessible and cooperative with release of information. At the same time, there were considerable weaknesses

in the organisation and user-friendliness of the DERC's information systems.

While the DERC established a web site early, the clarity and the organisation of the web site compares poorly to some other Commissions. For example, only a small sub-set of total DERC regulations were available, all the tariff orders were not available on the web site, and links to specific orders, such as the suo moto order on redressal of consumer grievances did not work.[110] Moreover, there is no schedule of past and future hearings, nor is there a dedicated section for consumers. By late 2006, many of these errors had, however, been rectified.

While the DERC is open in principle to providing documentation, in practice it is a challenge for a stakeholder to identify the document required and access it. The Commission does not have an index of available documents for stakeholders to consult. There is a room set aside for a library, but as yet the materials present do not constitute a library in any meaningful sense; neither DERC documents nor external relevant documents are placed in the room in an organised and accessible format. Finally, on occasion, the DERC staff were unable to retrieve key documents, such as the letter of 18 December 2001 from the first Chairperson to the Delhi Government objecting to the Government's policy directive. The rapid staff turnover, as well as failure to institutionalise robust document retrieval systems may have contributed to this weakness.

DERC's relationship with the media is one of mutual mistrust. While the first Chairperson began with intensive media outreach and was seen as doing a good job placing the DERC on the media map,[111] over time DERC has become less engaged with the media. From a media perspective, hearings are perceived as not being open to the media, and little effort is made at media outreach, for example, through media releases.[112] From the DERC perspective, the Delhi media has played an irresponsible role in fanning public sentiment on the basis of incomplete information, by, for example, focusing on metering issues without the benefit of full information on the technical details. In one example, the State Consumer Disputes Redressal Forum had taken suo moto cognisance of a news article on electronic meters, and passed an order restricting their installation. From the DERC perspective, this decision was based on partial and biased reporting, that spread misinformation about the reliability of electronic meters. In an interview, a senior DERC official approvingly cited a High Court order staying the Consumer Forum's decision, which stated that the court 'would like to place on record its anguish regarding the manner in which the news items [related to electronic meters] were published'. The judge concludes by 'hoping for the press to exercise self restraint'.[113]

The media and the DERC have been locked into an unproductive

relationship with negative results for both consumer education and the public perception of the DERC. While the media has kept debate about the Delhi reforms on the front page through detailed reporting, some of the more vocal segments are candid that they voice the view of middle and upper class consumers since this is their main market.[114] As a result, reports are filed without interviewing industry representatives, employees unions, slum dwellers and other relevant Delhi citizens, which can lead to one sided reporting that does not contribute to an honest debate. Certainly, insiders within the DERC and the government feel strongly that a sub-section of the media has been counter-productive rather than constructive in stimulating an effective public debate. At the same time, as the focal point for interface with the public, the DERC could and should have had a more proactive outreach strategy with the media, including inviting media to hearings and holding briefings in order to use the media as an avenue for consumer education. The DERC's stated attitude toward the media – that they are 'neither invited nor rejected' – does not support a regulatory body's task of engaging the public.[115]

Participation: Who Participates and How?

The same set of parties consistently intervenes in all three company filings. In absolute numbers, about 80 objections have been filed for each company, barring the first year where about 520 objections were filed for DVB as a whole. The number and composition shows no change over time. The breadth of interveners in 2001-2 was distinctly greater than that of the remaining years. This larger number could have been due to early interest in the DERC as a new body, but the substantial decrease after the privatisation is not easy to fully explain.

Industry and resident associations dominate the interventions in Delhi, in approximately equal proportion. All industry and consumer representatives, including individuals, civil society organisations, consumers and industry representatives have consistently comprised over 90 per cent of objections since 2001-2. Representatives from slums and *juggis* are conspicuous by their absence. The remaining are comprised of unions, public utilities, and other institutions, but only 1–3 of each in any given year. However, public utilities (such as Delhi Jal Board and Delhi Metro Railways) raise a wide range of issues, and so their influence is not accurately reflected by the small number of objections.

Consistent with the discussion above, interventions in Delhi focus more on grievances related to billing and assigned tariff categories than in other states. These make up about a quarter of the concerns raised in 2004-5. These objections also may not reflect grievances raised directly with utilities by people who may not have chosen to participate in the regulatory process.

Stakeholder Capacity

An examination of the capacities that stakeholders bring to the participation process shows that there is surprisingly weak capacity within Delhi to engage in the regulatory process. The most vocal group of Resident Welfare Associations (RWA) operates as a united 'Joint Front' and works to mobilise individual RWAs to participate in hearings. However, their joint representations are prepared in an *ad hoc* fashion, drawing on news reports, occasional analyses by NGOs and so on. There is no division of labour among the RWAs to scrutinise the vast quantities of information, nor any effort to mobilise resources to hire consultants or other expertise.[116] RWAs note that their own resources are too meager to enable them to hire experts. While they do consult with NGOs, the resources available to these NGOs are also limited.

Surprisingly, industry groups also bring relatively little coordinated effort to the DERC process. For example, the PHD Chamber of Commerce and Industry (PHDCCI), with 1,600 members and 100 associations as members, has not been able to persuade its broader membership to engage in the regulatory process. While the PHDCCI hired a consultant to help draft its representations for the first several years, members have typically taken little interest in commenting or participating in this process.[117]

Perhaps the most capable and engaged participant in the DERC so far has been the Delhi Transco itself. Since its finances are directly affected by the acts of the Discoms and the decisions of the regulator, it has been active and vocal in DERC hearings processes. In part, this activity may be driven by the unique terms of the policy directive, which inextricably link the finances of the Transco and the Discoms. Under different arrangements, the Transco may be less motivated to play such an active role.

Perceptions of Effectiveness of Stakeholder Participation

Within the DERC, the overarching impression of stakeholder comments is that they have proved to be of limited utility.[118] Comments tend to cluster around a few issues that focus attention, and tend to raise issues related to personal grievance rather than substantive issues. Perhaps unsurprisingly, rate increases, rather than the issues that lie behind them, occupy consumer attention. Many consumers are uninformed on the regulatory process, with the notable exception of a few well informed and constructive NGOs. This disappointment with consumer comments also spills over to industry, which are also perceived, as a group, to have not provided very useful comments.

As a qualification to this blanket view, consultants associated with DERC noted that stakeholders do provide useful ideas on issues that directly pertain to them. For example, the consultants drew on stakeholder comments for

ideas on tariff rationalisation, removal of monthly minimum charges, misuse conditions and so on.[119] However, when it came to the larger issues in the ARR process, there were few new ideas from consumers. Even if consumers occasionally raise substantive points, the DERC and their consultants suggested that they had normally thought of these issues as well.

Within stakeholders, perspectives of the DERC ranged from entirely ineffective to moderately effective under the conditions obtaining in Delhi. Consumers, particularly from Delhi's powerful Residents Welfare Associations (RWAs), were the most skeptical of the DERC.[120] In their view, the DERC had failed to establish a track record of independent decision-making from the government; as a media person put it the government and regulator are not separate in the eyes of the consumer.[121] The Government was seen as intentionally keeping the regulator weak by keeping posts vacant, notably by not nominating Members for a number of years. As with Government, there was a similar perception of lack of independence from licensees; coordination between the two was seen as occurring through contact between their respective consultants. Moreover, that the Chairperson of the DERC would have lunch with the heads of the licensees during hearings created the impression of a nexus between them, and, at minimum, was an example of insensitivity to the important of building consumer trust. Consumer groups also felt that the DERC had intentionally failed to build stakeholder capacity, which should be the 'first duty of regulators', because they did not want strong representation against utilities. When asked about decisions that appear independent and pro-consumer, such as the rejection of the Government's proposal for multi-year tariffs, these were dismissed as a necessary cover for other, more significant decisions that either followed the Government line, or supported the Discoms. The picture that emerges is a near-complete breakdown of trust between this important group of consumers and the DERC. Indeed, this breakdown contributed to the decision by RWAs to politically mobilise against the tariff hike of 2005, which eventually led to an effective tariff rollback by the Delhi Government.

Another consumer perspective from an NGO also holds that the DERC has been ineffective, and in particular has failed to follow up on suggestions from consumers.[122] However, the blame for this is placed at the door of the Delhi Government. While the Chairperson was systematic and knew his job, he was unduly bound by the Government policy. As a result, credibility in the DERC process has fallen, as consumers increasingly do not see it as the most useful avenue through which to raise their objections.

The industry perspective is similar, but somewhat more charitable to the DERC.[123] The DERC is seen as having done a 'fairly good' job compared to the past and given the generally poor state of governance. This view is a pragmatic one, which evaluates the DERC within a larger expectation of

incremental change at best: '. . . have to look at realities . . . independence of pulls and pressures is asking too much'.

Finally, there is little doubt that ongoing and simmering resentment against the BRPL and BYPL's customer interface has taken a heavy toll. The persistent perception of over-billing, ill-functioning meters, and heavy-handed tactics, whether justified as consumers argue, or falsely whipped up by the media as the licensees suggest, and the failure of the DERC to deal decisively with this growing perception, has eroded the DERC's credibility in the eyes of the public. As one informed observer put it, the DERC 'failed to present the Commission as the consumers' friend'.[124]

Despite this larger credibility deficit, there was a uniform perception that the introduction of transparency, and to a lesser extent, some measure of participation, was a gain from establishment of the DERC. With its establishment, 'information is in the public domain' and 'everything [is] open to question' while previously everything was 'shrouded in mystery'.[125] Moreover, a sense that the 'public has been heard' was seen as a positive even if there were difference of opinion on whether the ability to have a voice could make a difference.[126]

Substantive gains from public participation are difficult to conclusively demonstrate. However, from the tariff orders there are indications of stakeholder influence, but only on details that pertain to consumers. For example, in the early days of the DERC, stakeholders argued against an arbitrary definition of connected load based on counting one tenth of the plug points in a residence, and suggested instead the definition should be based on statistical analysis. Industry similarly objected to a methodology of computing load based on idle capacity. Both these cases, where the DERC took on board consumer objections, suggest that consumer feedback does play a role in providing a check on what would otherwise have been arbitrary decisions.[127] While both these are examples of intervention that directly benefits the intervener, there are also a few cases of intervention in the broader public interest. For example, one stakeholder objected to raising the permissible load on tubewell use, noting that many plots on which tubewells were located were used for residential or commercial and not agricultural purposes. The Commission agreed and rejected the proposal.

However, there are instances, as discussed in the relevant sections above, where larger-scale issues have been raised and not taken cognisance of by the DERC. The most egregious case in this regard is Delhi Transco's observation about possible problems in billing, on which the DERC failed to follow up.[128] Another case in which the DERC did less than they could have is the call by the PHD Chamber of Commerce and Industry for the DERC to follow up on its own directive of 2003 requiring compliance with its Performance Standards regulation, by requiring licensees to make public

data on consumer complaints and their redressal.[129] By the time of the Prayas study in May 2006, these data were still not available.[130] Finally, while consumer unrest led the DERC to take suo moto action on metering and billing, there was very little and inadequate follow up action.

The picture that emerges is of an embattled Commission facing a threat to its external credibility. The combination of a high profile reform, a deeply politicised consumer base, a problematic consumer interface in the case of some companies, and a low capacity regulator seen as insufficiently proactive, have all contributed to this situation.

Accountability

A necessary complement to stakeholder participation is ongoing feedback on how the DERC is conducting its business and in particular, how it is utilizing external inputs. In this regard, the DERC tariff orders are commendable for their clarity in two important dimensions. First, the orders clearly state which stakeholder comments they are considering and provide a discussion of the Commission's reactions. Second, the orders have a distinct section on directives, which states clearly the degree of compliance with each directive, and any follow up action. However, on this latter point, the order for 2006-7 fails to completely follow up on the directives for 2005-6, suggesting a drop in standards. There remain further grounds for improvement in reporting compliance with directives, notably by providing a unique reference number to directives to enable compliance to be tracked over multiple years.

The DERC has failed to produce annual reports, which are not only important for the public, but also are intended to provide a snapshot of the Commission's activities to the legislature. Although it has been in existence seven years, the DERC has only produced one annual report, covering the period December 1999 to March 2003.

Stakeholder Engagement: Concluding Reflections

Stakeholder interview suggest that there has been a steady slide in consumer confidence in DERC. For its part, DERC's investment in stakeholder engagement has had some gaps. Its transparency provisions, while formally adequate, are highly inadequate in practice. While participation in hearings is substantial, and reporting on this participation is complete, the DERC has failed to convince stakeholders it has their interests at heart. The history of unresolved consumer grievances and the failure to rapidly resolve quality of service issues is an important part of this lack of credibility. A failure to deliberately use the media as a form of outreach is another shortfall. The perception that the Government continues to call the shots has also weakened the DERC.

For their part, stakeholders in Delhi's heated political environment have been perhaps too quick to devalue the role of the DERC. The debate has been dominated by 'middle class' RWAs, to the exclusion of other stakeholders, including low income groups, industrial workers and the like. As a result, the Delhi reforms process has been consumed by consumer grievance issues such as metering and billing, which are important as part of a larger story, but have become nearly all-encompassing.

As a result, the avenue for expression of views and opinions has quickly shifted away from the DERC, as debate has swung back to the arena of organised politics, in what one DERC official dubbed 'forum shopping' by Delhi's consumers.[131]

This shift is exemplified by the consumer agitation of 2005 and the subsequent roll-back of the DERC's tariff hike. Much of this history relates to the five year transition period of the reform, and the limits on the regulator and the political scrutiny and pressures that accompanied that period. With the end of the five year transition period in 2007, the DERC has new opportunities to demonstrate its ability to work for all types of consumers. Indications of a new, and more engaged, regulatory style by the second set of regulators also affords a potential opportunity for positive change.

Conclusion

The DERC was confronted with the challenging task of regulating a rapidly transforming sector, under the constraints of a Government-led reform scheme and under intense scrutiny. The picture that emerges is of a regulator with relatively weak capacity struggling to find its feet. In the process, it has served the public interest in some important dimensions, notably by bringing down approved levels of investment by Discoms, and by introducing a measure of transparency that comes with the regulatory process. At the same time, the DERC's credibility as institution capable of safeguarding the public interest has not emerged unscathed. In addition to specific shortfalls, such as a failure to proactively deal with growing consumer complaints, the DERC has not established itself as suitable independent from Government control. These overarching points are elaborated in this concluding section.

Institutional and Political Context: Regulation in the Shadow of Reform

The DERC was faced with being a steward of reform under a challenging set of conditions. Any reform context calls for rapid change, and therefore for bold measures, whether in terms of investment, tariff hikes, or continuous

monitoring and course correction to ensure that reform milestones are met. However, a new regulator is faced with the additional challenge of building credibility. The DERC was forced to operate in a high stakes situation before it had established the necessary credibility, either with licensees or the public. In addition, it operated within the Delhi Government's framework for reforms, which divided control between the regulator and a pre-established set of parameters, notably for loss of reduction performance. Thus the regulator was neither entirely subjugated to a larger reform design, nor was the agency free to shape reform of the sector in a flexible manner based on an ongoing assessment of the situation. Instead, there were implicit pressures operating on the regulator due to the Government's framework. For example, the Government assumed a certain tariff increase trajectory in its design calculations. The DERC was not tied to these numbers, but if it did not match them, it was open to the accusation of undermining reforms, while if it did, it was open to the charge of lacking independence. The Delhi experience suggests that dividing control and placing implicit pressures on the regulator risks stunting its credibility with the public from the start.

Faced with this situation of balancing reform supporting decisions and building credibility, the DERC followed an approach that has been described as 'conciliatory'. In Delhi's political context, it rapidly became clear that tariff hikes, especially against a backdrop of consumer unrest with quality of service, was a politically explosive, and potentially politically costly issue. From a public perspective, the DERC under its first Chairperson appears to have internalised this stance. The DERC was widely seen as being in communication with the Government on the political sensitivity of tariff hikes, and modulating its positions accordingly. In order to meet the revenue requirement, the DERC took several steps that sometimes were justified in other ways, but to external perception seemed to be ways of avoiding a tariff hike. These included the manner in which depreciation was calculated, creation of a regulatory asset and a change in the manner in which collection of arrears were distributed within the sector.

Regulation in Practice: Hands-off Regulatory Style

The DERC was not equipped, at the start, to deal with the substantial burden of regulating and overseeing a large and high profile privatisation and reform effort. By working with only one Commissioner for its first five years, the DERC's style of operating was tied very closely to the perspective and approach of a single regulator. With regard to staff, the DERC has struggled to attract and retain qualified individuals. Part of the reason for this failing is structural constraints, such as the shortfall of qualified people who are able and willing to shift jobs. However, even within these constraints, the

DERC has failed to establish itself as an attractive place to work compared to other opportunities in the sector.

The staff capacity shortfall has considerably shaped the functioning of DERC. Most immediately, it has led to a continued and ongoing reliance on consultants for the ARR process, with little transfer of skills and experience to staff along the way. Consultants certainly brought skills that otherwise were lacking at DERC. However, a reliance on consultants combined with difficulties attracting and retaining staff have taken a toll on building an institutional memory. Limited staff capacity has also contributed to a failure to produce discussion papers to stimulate discussion in the rule making process (although this practice has recently been initiated), inadequate monitoring of key issues such as quality of service, and unsatisfactory internal procedures to ensure transparent functioning.

In the absence of formal guidance or previously established norms of operation, the regulatory style of the DERC appeared to be driven by the approach of the individual regulator. During the first regulator's tenure, which consisted of the bulk of the period covered by this study, the DERC erred on the side of a 'hands-off' and non-intrusive approach. Notably, conviction in the wisdom of this approach was not always shared by staff, who in several instances sought approval for more investigative scrutiny. This approach shifted under the leadership of the regulators that followed, in a direction toward more direct investigations.

The pattern that emerges is one of a regulatory agency that follows procedure but stops short of proactive intervention. For example, the DERC failed to look more carefully at the billing and revenue management practices of the Discoms although there were suggestions from within staff to do so. The DERC also did not explore stakeholder comments that suggested the pattern of consumption across consumer categories was counter-intuitive. In the area of investments, the DERC's scrutiny of prudency did lead to considerable consumer gains through reductions in petitioned investment and decisions to disallow substantial components of investment. In this case, the regulator did go the extra step and conduct site visits of particular investments, but chose not to report and follow up on the results of these visits.

Finally, the ability of the DERC to steer Discoms through directives is uneven at best. While the DERC has evolved a clear reporting format on directives, in many instances it fails to follow up on its directives and ensure compliance. As with other regulatory commissions, the DERC has shown a reluctance to use its penal powers in case of non-compliance. However, it has issued a 'token penalty' to two Discoms for underachievement of investment.

In the context of reforms and therefore rapid changes, there is arguably a case for a proactive regulatory approach. Because of a mix of capacity constraints and a hands-off regulatory style, the DERC has evolved an

approach of setting parameters but stopping short of a more proactive approach.

Role of Stakeholders: A Decline in Stakeholder Confidence

For various reasons both internal and external, the DERC has not fully established itself as a credible avenue for representation of stakeholder, and particularly consumer interests. Much of this has to do with the politicised context of Delhi, heightened by a high profile and high stakes reform arrangement. Within this context, as described earlier, the DERC had to play a balancing act between building credibility with stakeholders and supporting reform decisions.

However, several aspects of DERC functioning that are within its control have also contributed to a decline in stakeholder confidence. The DERC's practice of transparency does not match its procedures, and in particular, the DERC lacks institutional mechanisms to make it practical and convenient for stakeholders to obtain documents. On a related topic, the DERC has allowed its relationship with the media, which would otherwise be a good mechanism for transparency, to deteriorate.

At the same time, the available mechanisms for public participation have only been used in limited ways by stakeholders. There is a predominance of grievance related concerns, and participation is concentrated in industrial users and resident welfare associations. Low income groups are conspicuous by their absence. Moreover, the capacity of stakeholders to participate is limited, and no stakeholder group has sought to devote or raise resources to enhance the standard of intervention.

Perhaps unsurprisingly, the DERC perceives stakeholder comments as useful only to the extent that they provide a snapshot of consumer issues on the ground, but not at all useful when it comes to larger substantive regulatory questions. For their part, stakeholders, especially from the politically powerful resident welfare associations, were sceptical of the DERC's ability to make decisions independent of the Government, leading them to downgrade their involvement in the DERC process and upgrade their political actions. For its part, the Government has done little to signal a belief in regulatory autonomy. Particularly damaging has been consumer outrage against perceived unfair practices by two of the Discoms and the failure of the DERC to put a halt to these practices.

Under these circumstances, the ability of the DERC to provide a channel for depoliticisation of the sector is limited. To do so will require fixing not only flaws in the interface with stakeholders, but also the perception that the DERC is reactive rather than proactive, and that it is far too closely bound by the Government's own motivations. With electricity so closely intertwined with electoral fortunes, it is hard to imagine the Government

relinquishing control. To shift toward depoliticisation of the sector will require stakeholders embracing and working with the regulator, and the regulator proving itself worthy of that trust.

Notes

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25. Interview with former DERC official, 16 February 2006.
26. Interview with former DERC official, 14 December 2005.
27. Interview with former Delhi Government official, 30 January 2006, former DERC official, 16 February 2006, Delhi Government official, 22 February 2006, former DERC official, 24 March 2006.

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31. *Times of India*, 5 November 2003. Also mentioned in interview with former Delhi Government official, 30 January.
32. Interview with Secretary, DERC, 7 December 2006
33. Interview with former DERC staff, 16 February 2006.
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35. Interview with former DERC staff, 16 February 2006.
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37. Interview with former DERC staff, 14 December 2005.
38. Interview with first Chairperson of DERC, 24 March 2006
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40. Interview with DERC staff 16 February 2006 and DERC consultant, 27 January 2006.
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53. Interview with former DERC staff, 16 February 2006.
54. Interview with senior DERC official, 7 February 2007.
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80. Interview with senior Delhi Transco official, 23 March 2006, consumer representative, 20 January 2006 and NGO representative, 1 February 2006.
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Appendix

Analysis of Public Participation in the Regulatory Process

Participatory governance is one defining characteristic of independent regulation that sets it apart from Government. In India, consumers' capacity to understand and participate in the complex power sector is questioned by stakeholders. This potentially undermines the efficacy of the regulatory institution, since accountability and transparency hinge on public participation.

Study Methodology

We conducted a study of public objections to utility Expected Recovery of Costs (ERC) filings between FY 2002 and FY 2006. The purpose of this study was to determine –

(a) The total number;
(b) Composition; and
(c) Substance

of public objections, and their evolution over time. The first two reflect the extent of participation, while the third reflects capacity.

We obtained data on the number and composition of objections from the tariff orders. To assess the substantive content of objections, we reviewed the content of the objections (as discussed in tariff orders) in two years (FY 2002 and FY 2005) to extract two aspects:

(a) total number of issues raised in an objection.
(b) separation of these issues into substantive and grievance issues. The latter refer to issues raised out of their specific interest without a critique of substantive aspects of the filing. The former reflects some analysis of the substance of utilities' filings, which, we assume, is one indication of an attention to the larger good.

The number of issues by customer category provides more insight into the contribution brought to the regulatory process than just the number of objections. Second, the characterisation as substantive and grievance and its trend over time allow us to assess capacity, as well as the objectives of the participants in filing objections. We had intended to do a quantitative comparison across two periods, for tariff orders issued in FY 2002 and FY 2005 in each state (or the closest period to them). However, we were able to do only a qualitative assessment of FY 2002 orders, because the regulators at that stage discussed objections in summary form, without attribution to specific objections.

Due to scope constraints, we assessed the content of public objections 'second-hand', as reflected in the Commissions' discussions in the Tariff Orders.[1] In the case of AP, we were also unable to translate objections in APSPDCL (Southern Power Distribution Company). We expect that due to this limitation we reviewed ~ 70–80 per cent of objections for APERC. Based on interviews, we feel our analysis accurately represents the number and composition of participation. We buttressed our quantitative analysis with our judgment based on interviews, specifically with regard to farmer objections.

Total Number of Objections

Table 1 shows a trend of generally reducing or constant number of objections after a steep increase in the 2001-02 timeframe. In KA and AP, participation in the first year or two of the Commission is minimal, after which participation rises steeply, then steadies or drops. The increase follows sharp tariff increases in the first tariff orders in both states. In Delhi the first tariff order itself saw the highest ever participation, after which the number of objections is virtually constant thereafter.

Participants, specifically farmer groups, mostly in KA but in one year in AP (2002) relied on a strategy of inundating the Commission with duplicate objections on behalf of independent farmers and groups across the state. After filtering duplicates, in KA in FY 2005, we estimate based on the Commission's account of objections that 109 of the 5,170 objections were 'unique'. In AP, the Commission

Table 1: Number of Objections Filed

	2000	*2001*	*2002*	*2003*	*2004*	*2005*
KERC	110		8455	6133		5170
APERC	78	89	585	119	424	302
DERC		521		78	70	81

Notes: (1) For KERC, non-duplicate objections number in the range of 100–400. Farmer groups arranged for representatives statewide to send in duplicate objections

(2) KERC also had an amendment Order related to power purchase, for which 162 objections were filed. KERC also had 122 objections in 2000 rejected for lacking affidavits.

(3) For APERC, the 2002 nonduplicate objections number 135 – rest were submitted in duplicate, similar to KERC Objections in 2003, 2004, 2005 include 45, 329, 117 respectively directed to TransCO.

(4) For DERC, all companies receive the same number of objections, as indicated, from the same parties.

estimates that 135 out of the 585 were 'unique. This indicates that outside of this strategic intervention by farmer groups, participation in KA has been steady at around 100–200 every tariff order, while in AP there is an increase in participation, but this increase consists almost entirely of objections directed at Transco. This most likely represents interventions related to generation projects.

Thus, two key insights emerge from total trends: non-farmer objections have been relatively steady over time, and in the range of a hundred in Delhi and Karnataka, and a few hundred in AP; second, farmer groups have resorted to a strategy of inundation to gain attention. Both consumer groups and the Commission indicate that this did get the Commissions' attention.

Compositions of Objections by Consumer Category

Individuals/Consumer Groups

We reviewed objections by consumer category for two years, 2001-2 and 2004-5, to determine the composition of objectors and their participation over time (Table 2). The most striking observation is the number of consumers who file

Table 2: Composition of Objections Filed

2001-2	*KERC*	*APERC*	*DERC*
Category			
Industry	117	24 (41%)	153 (29%)
Consumer Groups		9 (15%)	51 (10%)
Individuals	247	11 (19%)	274 (53%)
Public Utilities		3	
Farmer Representatives	8,037	3	2
Political Parties/Politicians		2	3
Others	54	7	38
Total	8,455	59	521
2004-5	*KERC*	*APERC*	*DERC 2004*
Industry	47 (43%)	15 (10%)	12 (17%)
Consumer Groups	11 (10%)	16 (11%)	21 (30%)
Individuals	19 (17%)	35 (24%)	23 (33%)
Public Utilities	18 (17%)	19 (13%)	3
Farmer Representatives	7*	36 (25%)	0
Political Parties/Politicians	7	5	7
Others	0	18 (13%)	4
Total Reviewed	109	144	70
Actual Total	5,170	302	70

Notes: (1) APERC totals discrepancy in 2004-5 reflects 45 not discussed in tariff order and 117 directed to Transco

*(2) KERC total in 2005 reflects those discussed in the tariff order Rest mostly duplicates from farmers

objections individually, without affiliation to specific consumer groups or organisations. Not counting farmer representatives, individuals contributed anywhere from 17 per cent to 33 per cent of total objections in all three states, in both years. In addition, thousands of farmers in Karnataka (and hundreds in AP in 2002) filed objections, albeit mostly duplicates and in orchestrated fashion. Consumer groups file about 10-15 per cent of objections. In Delhi, their share is higher, mainly because of the involvement of Resident Welfare Associations (RWAs), who we included in this category. Further, many consumer organisations, particularly farmer groups, when probed, are in effect represented by single individuals, particular with regard to electricity matters. Thus, the data show that among consumer/farmer organisations, more than half operate individually, without institutional support.

The numbers belie the contribution of these consumer groups. In Karnataka and AP, regulatory staff indicate that a few (2-4) consumer groups and individuals tend to be the most consistent participants in, and with the most substantive contribution to, regulatory proceedings.

Industry Participation

Industry participation is highest in Karnataka, at over 40 per cent of objections, but far less (10–17 per cent) in Delhi and Andhra Pradesh. Objectors include industry associations, Chamber of Commerce (CoC), and contractors representatives. However, participation is not widespread across industry. In Karnataka, FKCCI[2] publishes and circulates information booklets to raise awareness of the power sector issues. An FKCCI representative in KA indicated that out of over 3,000 members, only 25 or so attend their energy summits, of which only a few small-scale industry representatives actively contribute to tariff filings. Large industries do not participate at all. Similarly, in Andhra Pradesh, only 4-5 out of approximately 2,500 members of FAPCCI participate actively in regulatory affairs. The head of the Energy Committee stated that their issues are narrow, and therefore their involvement limited. Their main issue is power quality, and market development.[3]

Regional Variation

The demographic breakdown of consumer/farmer representatives in KERC shows stark regional disparities. Gulbarga has only two consumer representatives. Most objections here are filed by industry. MESCOM, which includes densely developed areas along the Karnataka coast (for e.g. Udupi), has the widest breadth and largest number of consumer representative objectors (>40 out of the 109). In interviews, consumer groups indicate that even in MESCOM objections come primarily from rural and semi-urban coastal areas. Consumers contributed over half of the issues raised in MESCOM, but only a quarter in BESCOM. Hubli, not surprisingly – being a predominantly rural region – has the largest number of farmer representatives, but closely followed by Mangalore.

In Andhra Pradesh, among objections filed to the distribution companies, the Southern region (APSPDCL)[4] contributes the highest number of objections, comprising mostly farmer representatives. Their share of objections was over 30 per

cent in 2002, and increased to over 60 per cent by 2006. The Central region, comprising mostly Hyderabad and surrounding areas, contributes most of the remaining non-farmer objections, including consumer groups, industry and public utilities.

Urban vs *Rural*

It appears, therefore, that most objections (particularly individuals) are filed from semi-urban and rural areas. Conspicuously, urban consumer participation is minimal in Karnataka and Andhra Pradesh. The few objections from urban areas come from consumer groups, industry and public utilities. Interviews with consumer groups in Karnataka reveal that urban residents, in general, either find the burden of electricity bills insufficient to bother with reforms, or have little faith in the regulatory system or in reform.[5]

In Delhi, a predominantly urban area, residents, both individually and as part of RWAs, contribute significantly to the regulatory process.

Public Capacity and Its Evolution

As explained earlier, we identified and counted issues raised in objections, as discussed by the regulators in their tariff orders (Table 3), and categorised them into substantive and grievance-related issues (Table 4).

Table 3 above shows the issues raised by each consumer category (in total) against the number of objections filed in FY 2005. Clearly in all cases objectors raised multiple issues, on average 2-3 per objection. For the most part, in only a few cases did groups raise issues disproportionate to the number of their filed objections. In Delhi, individuals raised few, typically grievance-related, issues, even though they contributed 33 per cent of objections. On the other hand, industry representatives

Table 3: Comparison of Share of Objections and Issues Raised

2004-05	*KERC*		*APERC*		*DERC*	
	Objections	*Issues Raised*	*Objections*	*Issues Raised*	*Objections*	*Issues Raised*
Industry	43%	42%	10%	11%	17%	39%
Consumer Groups	10%	19%	11%	13%	30%	37%
Individuals	17%	13%	24%	32%	33%	5%
Public Utilities	17%	11%	13%	9%	4%	9%
Farmers/Farmer Groups	6%	9%	25%	NA	0%	0
Political Parties/Politicians	6%	2%	3%	13%	10%	5%
Others	0%	0%	13%	NA	6%	5%
Total (In number)	109	294	144	328	70	232

Note: AP analysis excludes objections filed for one DISCOM (APSPDCL) and for <10 per cent of objections in the other states due to translation difficulties (mostly from farmer groups).

in Delhi appeared more sophisticated than in Karnataka and Delhi, judged by the number of issues raised.

Looking at the evolution of substantive and grievance objections (Table 4), we found that the share and absolute number of grievances was larger in FY 2002 in Andhra Pradesh and Karnataka than in FY 2005, even though the number of participants did not change. The Commission presented data in summary form in Karnataka, and data on DERC were not available for FY 2002, so we make this observation based on qualitative judgment of the Commission's summaries and interviews with consumer groups and utility staff in AP and KA.

Table 4: Share of Substantive and Grievance-related Issues Raised in Objections

2004-05 *Type of Issues*	*KERC*	*APERC*	*DERC*
Substantive	250	302	177
Grievance	44	28	55
Total	294	328	232
2001-02 *Type of Issues*	*KERC*	*APERC*	*DERC*
Substantive	<60%	232	NA
Grievance	>40%	42	NA
Total	NA	274	NA

Note: APERC data exclude APSPDCL, and <10 per cent of farmer objections due to translation difficulties. From other farmer objections, we expect a large share of these were grievance-related.

KERC objections available only in summary form – percentages reflect authors' judgment.

The large number of grievances, particularly from farmer groups in FY 2002, is likely explained by the fact that rates increased far more in AP and KA in FY 2002 than in FY 2005.

The grievances in both periods revolved around tariff levels and categories. A large share of objections, particularly in Karnataka, focused on the injustice of high tariffs to farmers, and burdening consumers with utilities' inefficiencies. In FY 2005 in contrast, over 75 per cent of issues raised were substantive in all states, with Delhi having the least at 75 per cent, and AP having the most at 92 per cent. The range of issues to which substantive objections have been made in FY 2005 also appear to have increased, some delving into depths of cash flows statements, quality of service, inconsistencies in filings, excess expenditures, T&D losses, and others. This has been observed of comments from industry, utilities and consumer groups.

This observation of increased sophistication is preliminary and merits further investigation. The increase in substantive issues raised may reflect increases in substantive contributions by the same objectors, or growing numbers of sophisticated objectors. In order to test this inference, one would have to track the content of

objections of specific groups and individuals over time, a task that was beyond the scope of this study. However, in Karnataka, utility and regulatory staff corroborated this observation. They claim that they have been forced to pay closer attention to their filings, as objectors find mistakes. They also feel the number of competent submissions has increased. They point to a handful of regular objectors, whose objections they now look out for, or pay particular attention to.[6]

Mutual Perceptions of the Public and Regulators

Consumers' and regulators' perceptions of each other are similar: they lack capacity, focus mostly on rate issues, but are critical for reforming the sector in the long run.

The regulators' perception, corroborated by staff, is that public participation is not particularly 'enlightened'.[7] They do not understand the broader context of reform, and therefore cannot appreciate the time and complexity in improving the sector. Consumers' own experiences bear out this perception. Some consumers in Karnataka feel disrespected by regulators, based on their interaction in public hearings and personal meetings. In Delhi, consumer groups feel bitter that the regulator has neglected their grievances with respect to metering, power quality and billing issues.

Nevertheless, regulators encourage and support consumer participation, but contingent on their increasing their awareness and capacity. When questioned as to whose responsibility capacity building should be, no unified position emerged. Key officials in KERC, including the first Secretary, felt strongly that the regulator must represent the consumer, and formally fund consumer capacity building. It is no coincidence that KERC is the only regulator to have set up an office of Consumer Advocacy.

Consumers, particularly those that have elevated themselves above rate issues, feel the regulator is not proactive, and avoids tackling fundamental reforms in the sector. These consumers felt they have brought to the attention of the regulator several substantive irregularities in utility filings, which the regulator has neglected to pursue.[8] Yet, they express faith in the regulatory system (as discussed further below), and feel optimistic of their role therein.

Impact of Public Participation

From a policy perspective, public participation is an instrument of accountability. How effective has it been in this regard? On the one hand, regulators and regulatory staff claim to not gain significantly in their analysis from consumer participation. However, as mentioned earlier, their opinion has grown favorably, with regard to a handful of active interveners, in both AP and KA. On several occasions in tariff orders, regulators cited and agreed with consumer objections in articulating their position on many issues. Often the Commission relies on consumers' objections to explain or defend a position.

Despite the increased sophistication of objections, interviews with regulators and consumer groups reveal that tariffs remain the primary entry point for consumers into the regulatory process. Consumers' growing capacity and regulators' increasing reliance on consumer objections fall primarily in the domain of cost recovery and

reduction, not policy. The glaring lack of public participation in the open access discussions in AP and KA stand as clear evidence of this. Perhaps consumers as yet have insufficient capacity, exposure or the time to understand or comment on tariff filings from this larger policy context (barring few exceptions).

A few 'sophisticated' consumers with a good perspective on reforms indicate that they have learned that *regulators*, and not just consumers, focus more on tariff-related issues and avoid fundamental reforms. They indicate regulators could easily conduct more field visits, estimate IP set consumption, understand consumer grievances and track implementation of their own regulations and directives.

Notes

1. This raised two issues: first, whether regulators characterised objections appropriately and completely; second, whether regulators discussed all filed objections. Regulators' description of objections evolved over time. In 2001-2 regulators discussed substantive aspects of objections only in summary form. For 2004-5, however, we found that regulators (in all states) detailed objector's issues thoroughly, and in most cases with attribution to objections, or at least the participant category. Based on cursory checks, we expect that the Commissions did not reference 10-20 per cent of objections.
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5. FKCCI representative, KERC Consumer Forum, March 2006.
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7. Interviews with former Chairpersons, Karnataka and Delhi, January 2006.
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The Practice and Politics of Regulation

Regulatory Governance in Indian Electricity

Independent regulators are a nascent institution in India. This volume examines how Indian electricity regulators in three states - Andhra Pradesh, Karnataka and Delhi - function in practice. The goal is to contribute to debates on the role of regulators in electricity reform and on the institution of regulation in India. Drawing on extensive interviews with regulators, government and stakeholders, the authors explore the regulatory decision-making process. They develop insights into the influence of politics, public participation, and the reform context on outcomes, and the implications of each for future evolution of regulatory institutions in India. This book will be useful to policy-makers in utility sectors, electricity experts, regulators from a range of sectors and academics and NGOs interested in delivery of public services.

Salient features

- Opens the black box of Indian electricity regulation
- Presents detailed analysis of how key regulatory decisions are made
- Examines how regulators deal with and manage political pressures
- Analyses public involvement in the regulatory process
- Offers detailed recommendations on improving regulatory procedures and performance in the electricity sector

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