

# Designing an Independent Regulatory Commission

by Sanford V. Berg, Ali Nawaz Memon, and Rama Skelton\*

## Abstract

*This paper provides general guidelines and recommendations for introducing or refining an independent regulatory commission (IRC). The principles identified here can help policymakers decide on the basic design and structure of the IRC, its jurisdiction (whether single- or multi-sector) and its key regulatory functions. A well-functioning agency needs adequate resources, an appropriate legal mandate, and clear agency values and operating procedures. Indeed, if any of these conditions is lacking, the IRC will be unable to function in a way that promotes strong sector performance. Focusing on the electric power sector, we recognize that the process of reform is still evolving and that an agency's structure must permit it to adapt effectively to changing technological and market conditions. Our recommendations reflect international experience and best practice developments in the past two decades.*

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\* The authors are, respectively, Director, Public Utility Research Center (University of Florida), Consultant (former Chairman of the Pakistan Electricity Regulatory Commission and World Bank analyst), and Consultant (former World Bank analyst). We have drawn on a number of studies and benefited from conversations with numerous individuals, including Warrick Smith, Praja Trivedi, Abdulrahman Al-Tuwejiri, Penelope Brook, and John Corlett. So we make no claim for originality. Rather, we have tried to draw together principles from our professional experiences, particularly with the *PURC/World Bank International Training Program on Utility Regulation and Strategy*. The views expressed here are solely those of the authors.

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## 1. Introduction

Many nations have established or are in the process of creating independent regulatory commissions (IRCs) for their infrastructure sectors. The purpose of this paper is to bring together the basic principles underlying the establishment of successful regulatory regimes. The focus here is on electricity regulation, but the principles apply across sectors.

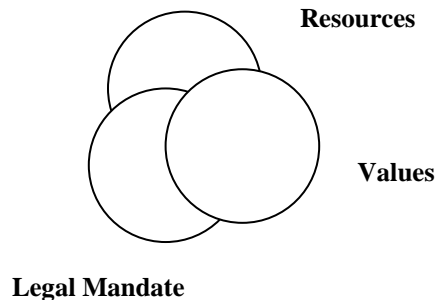
New government agencies face problems in obtaining appropriate legal mandates, garnering operating resources, and developing procedures and internal values that will make the agency both sustainable and successful. Just maintaining adequate budgets and preparing sensible reports will not guarantee success over any reasonable time horizon. “Success” requires that sector performance meet the objectives of key stakeholder groups. The purpose of an IRC is often seen as a “balancing” of interests, but unless benefits are created under the regulatory regime (i.e., sector performance improves), the system will not be sustainable.

Restructuring the power sector and the introduction of private participation generally require the creation of an IRC with three broad aims: (1) to protect consumers from abuse by firms with substantial market power, (2) to support investment by protecting investors from arbitrary governmental action and (3) to promote economic efficiency. An IRC faces several challenges in achieving these aims. The new commission must recognize that utility prices are politically sensitive to customers. Investors are also aware of political pressure and thus seek a credible commitment to regulatory rules that are applied on a consistent basis and provide an opportunity for reasonable returns on investments in the sector.

The long-term nature and large magnitude of required capital investment to develop the electricity sector depend on credible commitments; otherwise, the cost of capital will be high. International investors wait to see how new regulatory provisions will be implemented and to learn the ultimate scope of the IRC's responsibilities. Prolonged uncertainty will lead to investors' delaying construction of critically important new sector facilities (e.g., base-load generation capacity). If the IRC is not structured appropriately, and if the process used to put it in place is perceived as flawed, anticipated economic benefits will not be obtained.

The following figure is composed of three circles representing an agency's resources, values, and legal mandate. The intersection of the three circles encompasses the set of activities or functions that the IRC can expect to successfully perform. Outside the overlapping area, one of the three vital inputs is missing, which decreases the likelihood that functions will be successfully performed.

**Figure Representing Area of Effective Activities**



A number of questions arise in designing an IRC. In regard to *legal mandate*, should the regulatory entity have jurisdiction over one industry, one sector or several sectors? What will be the functions of the IRC and ministries? After the new agency is established, at what point should revisions be made to the law? As for *values*, if independence of the IRC is important, how can this be best achieved? What processes will promote transparency so stakeholders have confidence in the system? What types of information are required so that appropriate incentives can be established? Consideration of *resources* affects start-up strategy. What kind of leadership is required for the IRC? How does funding, the recruitment of professionals, and staff development affect the performance of the IRC and the sector for which it provides oversight?

While legal requirements and resources are fairly clear, a definition of the shared values so essential for success may be helpful. Another term that could be used is the *organization's culture*. Schein (1992, p. 12) offers the following definition of culture:

Culture is . . . a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

A new IRC presents a blank slate. Shared assumptions are have not developed and shared experiences are yet to come. So the process of creating the commission implicitly establishes expectations for the way the new organization will fulfill its functions. The process identifies key objectives to be sought and the values and principles the IRC will apply in the regulatory process. Accordingly, we draw on lessons from regulatory experience and identify the functions that need to be assigned to and implemented by the IRC. Implementation needs to proceed within a decision-making process that assures stakeholders of the requisite transparency, one of those values critical for success.

## 2. Reform Objectives and the Underlying Rationale for an Independent Regulatory Commission for Electricity

Power sector reform, including establishment of an IRC, is undertaken to constrain the exercise of monopoly power by incumbent suppliers, stop subsidies to the electricity sector and thereby reduce a drain on the Treasury, provide incentives for operating efficiency and quality of service, optimize the structure of the sector, promote least-cost system expansion (through incentives), promote competition and system expansion (with private capital invested in independent power producers - IPPs), and stimulate energy conservation and R&D (research and development).

The performance of the IRC should be judged against these objectives, which ought to be prioritized so that potential policies can be analyzed in terms of their effect on reform goals. Of course, without an appropriate legal mandate, sufficient resources, and clear agency values and operating procedures, sector performance is likely to fall short of meeting these objectives.

The objectives of sector reform listed above apply to most emerging nations. The first is important for nations engaged in privatization programs. The second, eliminating dependence on ministries of finance for subsidies, has been a major goal in Argentina, the United Kingdom and other countries. And explicit attention is given to creating better incentives for cost containment when and where IRCs are established.

State and federal commissions in the United States historically relied on *rate of return on investment*<sup>1</sup> regulation, using management audits to promote efficiency. Chile and the United Kingdom introduced forms of *price cap regulation*, which tended to create even greater incentives for cost reduction while increasing capital costs slightly (since more commercial risks are placed on investors rather than borne by taxpayers or consumers). Studies indicate that the global savings from privatization and improved regulatory incentives have been substantial as suppliers faced pressures to reduce costs and improve the quality of service provided.

As part of these reform efforts and where possible, nations have adopted market structure reforms that introduce competition. Louis Guth (1998) provides an overview of market power issues in the electricity industry. He underscores the importance of properly defining the relevant product at each stage of the process by modeling demand, supply, and other competitive interactions. One objective of reform is to optimize industry structure so regulators can focus on the natural monopoly segments of the market, leaving competitive pressures to operate where possible.

Private participation is seen as another way to reduce fiscal burdens on government and enhance operating efficiencies. One problem with state ownership and operation of electric utilities has been insufficient service expansion. Electricity shortages result in blackouts, brownouts, and low service penetration. Attracting private investors has been a key objective of reform initiatives. Because of the market power of incumbent firms,

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<sup>1</sup> Investment in a utility plant that is deemed to be “used and useful” in rendering service to consumers has been defined as the appropriate *rate base* for use in the rate-setting process.

national objectives have included expanding the number of firms in the industry through investments in new generation (IPPs, among others). Finally, energy conservation and R&D remain important objectives that can be fostered by the regulatory process.

In his catalog of ten key questions, Peter Navarro (1996) summarizes the issues facing the restructuring regulator. First on his list is whether the generation market is potentially competitive. The current levels of market concentration certainly affect the feasibility of a “hands off” approach, and the design of the transmission segment is another key point. Also pertinent is whether rate base regulation or performance-based (incentive) regulation should be utilized in the distribution market. Price discrimination is another issue, although differential pricing can often be justified in terms of cost differentials or options such as self-production available to large customers. Remaining issues involve the treatment of stranded costs (degree of recovery, calculation, and recovery mechanism), demand-side management and integrated resource planning to address concerns about pollution and diversity of national energy portfolios, as well as ratepayer assistance programs that target subsidies for the poor. This listing reinforces the importance of having the appropriate legal mandate, resources, and values to address each of these issues.

Good design of the IRC can balance the interests of stakeholders and improve sector performance, creating efficiency for the economy and system expansion, legitimacy for the customers and credibility for investors. However, available financial and human resources, agency values and legal authority must be consistent with the responsibilities associated with fulfilling the functions in this delicate balancing act.

### **3. International Experience: Design, Principles, Functions, and Structure**

The United States has had independent regulatory commissions for more than a hundred years, and Canada has had independent regulatory commissions for many decades. Since the 1980s, independent commissions have been established for sectors in nearly a hundred nations. Chile, the United Kingdom, and Argentina were among the first to introduce such agencies as part of sector reform and privatization initiatives.

On the basis of our review of international experience, we summarize a number of points related to lessons learned around the world. After noting basic design questions, we introduce the principles that represent best practice and identify typical functions of independent commissions. It should be noted that the review of tariffs and costs is central to protecting consumers, facilitating investment, and promoting efficiency. All the functions noted here have implications for the cost/tariff review process. We then consider the organizational structure required to support the functions.

#### 3.1. Design Questions and Principles

Bernard Tenenbaum (1996) outlines the basic IRC design questions as follows: Should the regulatory entity have jurisdiction over one industry, one sector or several sectors? How much authority should be given to the regulator? What are possible paths toward setting up a regulatory commission? What will be the functions of ministries in

comparison with those of the IRC? Why should an “independent” regulatory agency be established? What should be the start-up strategy? Should there be a single regulator or a commission? (I.e., what should be the decision-making structure within the organization?) How are the regulators and key personnel to be selected? How is the regulatory commission to be funded? What should be the appellate body and appeal procedures? Policy recommendations based on answers to these questions are provided in Section 5 of this paper.

Given the importance of establishing credibility with the investment community, legitimacy for consumers, and strong incentives for economic efficiency and capital formation, it is useful to review the best practice principles for regulatory commissions. The following characteristics have been identified with best practice around the world<sup>2</sup>:

*Communication*: Information should be made available to all stakeholders on a timely and accessible basis.

*Consultation*: Participation of stakeholders in meetings promotes the exchange of information and the education of those affected by regulatory decisions.

*Consistency*: The logic, data sources, and legal basis for decisions should be consistent across market participants and over time.

*Predictability*: A reputation for predictable decisions facilitates planning by suppliers and customers, and reduces risk as perceived by the investment community.

*Flexibility*: The agency should use appropriate instruments in response to changing conditions, balancing this regulatory discretion against the costs associated with uncertainty.

*Independence*: Autonomy implies freedom from undue stakeholder influence, which promotes public confidence in the regulatory system.

*Effectiveness and Efficiency*: Cost effectiveness should be emphasized in data collection and in the policies implemented by the regulator.

*Accountability*: Regulators should provide clearly defined processes and rationales for decisions. In addition, appeals procedures need to be specified to provide appropriate checks and balances.

*Transparency*: The openness of the process to stakeholders promotes legitimacy.

These principles (or cultural values) should be incorporated in the regulatory process for effective implementation of government policies. For example, the accountability component includes *appeals* procedures. The appellate body must be independent and can be a court, as in Pakistan and the United States, or a technical body. The Monopoly and Mergers Commission, the U.K. anti-trust agency, hears appeals relating to regulatory decisions (price changes). In Bolivia, a special superintendency rules on appeals. Note that legitimate ground for appeals is limited to errors of fact, law, or failure to follow required processes and does not consider the merit of IRC decisions. The appellate body should not substitute its own judgment for that of the IRC, since the latter has both the expertise and the legal mandate to make regulatory decisions.

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<sup>2</sup> Australian Regulatory Forum (1999), <http://www.accc.gov.au>

The IRC should ensure that both suppliers and consumers fulfill their obligations relating to commercial operations. The utility has the obligation (via licensing) to provide service under the approved tariffs and quality standards. Consumers have an obligation to pay for service to ensure the financial viability of the sector. Particular attention should be given to the customer interface to ensure that complaints are handled in a prompt and appropriate manner. International experience indicates that regulatory incentives that reward good performance improve customer satisfaction.

The IRC basically balances the interests of three stakeholder groups: the government, electricity service suppliers, and customers. Each of these has potentially conflicting interests. The government is subject to short-term political pressures from various constituencies. For investors to commit to long-term investments, the IRC must be free from undue influence. Suppliers want high returns, and an unchecked monopolist will charge too high a price. Today's customers, conversely, want reliable electricity at low prices.

The purpose of regulation is to ensure that price reflects the least cost of service, given mandated quality and reliability standards. The role of the IRC is to promote the long-term objectives established by the government, balancing the interests of all three stakeholder groups. The long-term sustainability of the sector depends on looking beyond the immediate interests of each of the groups. Future generations (our children and grandchildren), potential entrants, and tomorrow's customers all benefit from a properly functioning IRC.

### 3.2. Legal Mandate for Key Functions: Lessons from International Experience

A review of experience around the world indicates that the following are the key regulatory functions in the electric power sector:

- Issuing licenses related to regulatory functions,
- Setting performance standards,
- Monitoring the performance of regulated firms,
- Establishing the level and structure of tariffs,
- Establishing a Uniform Accounting System,
- Arbitrating disputes among stakeholders,
- Performing (usually via independent consultancy) management audits on regulated firms,
- Developing human resources for the IRC,
- Reporting sector and IRC activities to the appropriate government authority.

For each of these functions, the IRC needs sufficient legal authority to carry out its responsibilities. However, experience supports the least possible intrusion into private decision making. Micro-management and second-guessing utility management should be avoided. The emphasis should be on providing incentives for cost containment and system expansion and on introducing competitive elements where possible (Klein and

Gray, 1997). All of these functions, described in greater detail below, have implications for the central objectives of regulation: ensuring that costs and prices are as low as possible, conditional on continuing to attract needed capital investment for the sector.

Interrelationships among the functions affect costs and tariffs. Often rate re-balancing (to reduce cross-subsidies from particular customer groups) or rate increases (to bring prices up to costs) are objectives of reform, and the creation of an IRC clearly involves a review of costs and tariffs.

*Licensing specifies operating standards that have impacts on cost and tariffs.*

International experience shows that the electricity regulator has responsibility for issuing a “certificate of use” when a capital investment has been completed. Generally, existing capacity is issued a “certificate of use” stating the standards under which the facility is to be operated. For example, power quality problems with particular generating units will have cost implications for the entire system. Thus, operating standards are specified in advance of operation. This requires ongoing monitoring by the IRC. New plants (whether representing IPPs or system expansion by incumbent generators) that have been approved by appropriate authorities still require a license indicating compliance with IRC regulations.

*Performance standards on quality/reliability have cost/tariff implications since these involve resources.* Consumers are willing to pay for a defined standard of service quality; however, performance standards have implications for the cost of service. To protect consumers from excessive prices while ensuring that reliability and other performance standards are adhered to, the IRC will need to prescribe procedures and standards for companies’ investment programs. This includes criteria for least-cost expansion and competitive bidding. As independent power producers enter the industry, the IRC will need to develop and approve codes of conduct for generation, transmission and distribution companies, ensuring, *inter alia*, that market participants have access to information in a timely manner.

*Monitoring data on costs, revenues and performance is essential for tariff determination.* Although regulatory commissions need to avoid micro-management of firm activities, it is essential that the IRC be authorized to request information and receive appropriate responses thereto. And it is standard practice for regulated firms to prepare audited financial reports on an annual basis to facilitate regulatory review. The commission also needs the authority to penalize firms that do not comply with data requests. Similarly, the IRC should develop procedures for special issues, including non-payment of consumer bills and consumer complaints.

*Tariffs determine revenue sufficiency for operating and capital costs such as returns, assets values, deferred loans, etc.).* The rate level is based on revenues required for financial sustainability, including fair returns to invested shareholder capital. *Rate structure* refers to the use and rate designs that promote efficient use of scarce resources and fairness (e.g., time-of-use rates, block structures, interruptible rates, etc.).

How to determine the appropriate level of costs? The functions described here all affect whether suppliers are producing efficiently. In the United States, state commissions



(IRCs) establish the tariff on the basis of a proposal from the regulated firm (or firms). The IRC decision sets tariff structures and levels and other terms and conditions for the supply of electric power services by generation, transmission and distribution companies. In some countries, formal approval by a council of ministers or higher authority is also required. If another political body can easily overturn IRC decisions, then the IRC is not truly independent and its credibility is called into question. (Smith, 1997)

*Uniform accounting provides comparable cost data (generation, transmission, distribution) for tariffs.* Around the world, regulators have the function of determining a uniform system of accounts. In the case of electricity, it is important that these be separated into generation, transmission and distribution activities in order to review performance at each stage of supply to consumers. Furthermore, accounting separations according to functions facilitate benchmarking—so performance comparisons can be made across firms facing comparable production conditions.

*Arbitration between firms and consumers is necessary to resolve disputes.* Disputes may arise in a number of areas, including those concerning tariffs and competitive access. The IRC needs the authority to rule on matters within its jurisdiction.

*Management audits promote cost/tariff reductions.* Typically, the IRC reviews the organizational affairs of generation, transmission and distribution companies on a regular basis to ensure cost effectiveness and a continuous and efficient supply of services. On an agreed schedule, the IRC also reviews companies' performance effectiveness (achieved through incentive plans and management contracts) to reach acceptable efficiency benchmarks.

*Human resource policies have operating cost/tariff implications.* Recruitment and staff training warrant particular attention as part of regular managerial responsibilities, since the implementation of policies depends on the quality of the people conducting regulatory analyses. In addition, compensation policy needs to be flexible enough to recruit able staff and retain the expertise that is developed. In many countries, government salary structures are not competitive with those available in private industry. Since key staff evaluate companies as public policy is implemented, it is essential that their incomes be comparable to those in the private sector.

*Reports on costs and tariffs emphasize current and future performance and efficiency, both for individual firms and for the sector as a whole.* An IRC may submit reports regarding sector activities to a higher authority. Given the expertise assembled at an IRC, it is appropriate for it to provide information and advice to appropriate government departments. In addition, almost all IRCs prepare and distribute to the general public an annual report on regulatory activities and sector performance, which promotes transparency.

### 3.3. Organizational Structures to Support the Functions

The Appendix displays two models of organizational structure for multi-member commissions. Under Model A, the chairman and members concentrate on decision making, while the professional preparatory work and due-diligence effort is done under the supervision of an appointed executive director. Under Model B, individual members

have hands-on managerial roles, and head the individual functional departments. It is possible to combine these models through the use of Task Forces lead by individual commissioners.

In some cases, an external consultation committee could provide the viewpoints of ministries affected by IRC decisions and inform the ministries of sector developments. The chair of the committee might be the chairman of the IRC. However, independence is enhanced if reports go directly to the legislative and executive branches. Reduced independence of the IRC may be necessary during a two- or three-year transition period while permanent funding is established and other stakeholders learn about the processes used by the IRC.

Agreed regulatory functions largely determine the design of the IRC's organizational structure. Whether commission members are full- or part-time, their actual professional background, and their status in terms of seniority, age, etc. are additional factors. If members work full-time, Model B might be appropriate. Members who lack professional expertise or who are very senior may not want to head the relevant departments as required under model B.

While an odd number of commissioners, including the chairman, is useful to ensure decision making, the size of commissions, including chairman, can vary from one member (U.K.) to three (Orissa in India), five (FERC in the United States, Argentina, Mexico, New York, Pakistan) or seven members (Federal agency in Canada). On the basis of international experience, the IRC should not have more than seven members.

Terms of appointment can vary from five years (Argentina; Bolivia, U.S., U.K.) to six (California State Commission, New York) to seven (Canada). Most appointments are renewable for at least one additional term. To ensure continuity of decision making, staggered terms of four to five years are often appropriate. Commissioners' personal attributes should include the ability to consider multiple perspectives and resistance to improper influences and preoccupations. Training and experience in economics, finance, law, public administration or engineering are also useful.

In selecting staff, emphasis must be placed on skills as well as on personal integrity. Market-based salaries are desirable, and this may call for the exemption from restrictive civil service compensation rules to recruit and retain the qualified professionals needed.

Staffing head count is important. Understaffing prevents proper attention to required functions; overstaffing can dilute focus. Rather than attempt to recruit and maintain all expertise on a permanent basis, a commission can rely on expert consultants and fixed-term contracts, keeping the permanent commission staff as small as possible.

Depending on the size of the country, the IRC should contract out or outsource activities such as detailed analytical work and compliance audits of regulated firms. For example, U.K. regulators have tended to have relatively small professional staffs and to use consultants to assist with specific tasks.

## **4. Key Design Issues**

It is useful to outline in greater detail the strengths and limitations of alternative approaches to such key design elements as multiple vs. single-sector IRCs, the division of responsibilities between the ministry and the IRC, and the sequence and timing of IRC creation and implementation.

### 4.1. Multiple- vs. Single-Sector Agencies

The advantages of multi-industry regulatory agencies are their ability to share resources (office space and facilities as well as professionals like economists and financial analysts) and their facilitation of learning with transfer of insights across sectors and industries. Each industry has unique features; however, the main issues in economic regulation are similar: Administering tariff adjustment; managing the introduction of competition into traditionally monopolistic industries; managing relationships with stakeholders; reducing the risk that either industry or political authorities will have an undue influence over the regulator.

Regulation also reduces the risk of economic distortions. Since all utilities compete for investment capital, inconsistent application of rules or approaches to tariff setting can create economic distortions. This becomes especially important as industry boundaries blur. Gas companies are entering the power business, and in some countries, gas, power and water companies are entering the telecommunications sector.

The main disadvantages of multi-industry agencies are a possible lack of sufficient industry-specific expertise or focus and the danger of “putting all eggs in one basket” so that regulatory failure has a much broader impact on the economy. Also, number of sector-specific IRCs allows for experimentation with different approaches (rate of return in one sector, price caps in another, etc.).

Some have argued that a multi-industry regulatory agency are suitable only for small economies, as in Jamaica, for example. On this basis alone, a separate IRC for electricity might be called for, especially when capital must be raised to fund expansion. When the complexity and challenges associated with introducing new power sector reforms and a new regulatory authority are included, then the choice of a separate IRC for electricity is more clearly justified.

### 4.2. Division of Responsibilities Between IRCs and Ministries

Ministries will continue to have a very large and important role. In terms of policy making, they will continue to translate general government policy into sector policy by encouraging public investment, setting the pace of privatization, shaping the legislative framework, and overseeing intergovernmental relations and sector restructuring.

The government must provide start-up funding for the IRC, and it must be adequate to cover all start-up areas, including staff and consultant compensation, office space, furniture and equipment. Funding must be made available on time and when needed. Government funding must continue until sources of funds from consumers become available, an estimated two to three years. Then regular funding from consumers may be obtained through a levy on billings to meet the approved budget. According to international experience, sources of funding for the IRC may emanate from:

- Consumer bills— as low as one-tenth of 1% of unit charges
- License fees
- Penalties
- Special fees for hearings

The government may limit levies to ensure that overall spending by the IRC on its own internal administration is cost-effective and that excessive operating expense is not incurred. A spending limit based on the operating experience of the IRC can be determined in due course. The funding of an IRC for the power sector is justified if it is expected to lead to increased operating efficiency by regulated firms in terms of operating standards and the firms' own cost controls. In addition, properly executed, the IRC can facilitate private sector participation at a lower cost of capital than possible without the IRC. These savings are passed on to consumers via lower bills than would be usual in the absence of effective regulation.

#### 4.3. Importance of Sequencing and Timing of Implementation Actions

To assure that anticipated economic benefits from sector reform are realized, it is important that delay in implementing the IRC be avoided. This said, there is often a limited planning window. Proceeding on an expeditious basis rather than on a crash program is thus called for. During the critical stage of institution building, it is important that the IRC's independence be assured to the extent possible in order to build the necessary credibility with all stakeholders.

Primary implementation actions include prioritizing the objectives of the reform initiatives and selection of the core implementation team. A decision on an appropriate set of regulatory functions and instruments for the IRC is also needed. Appeal procedures must be determined, along with agreement on funding level and sources. Appointment of the IRC chairman follows creation of the procedure for selection. Subsequent actions include drafting appropriate legislation and preparation of detailed terms of reference for support services and recruitment of specialist consultants. Once remaining members of the commission and senior staff are appointed, the regulators can be trained at home or abroad. An office must be established and human resource policies developed, with necessary expertise acquired via consultancy contracts. Public information and discussion will familiarize investors, consumers and the regulated firms with the IRC's mandated functions.

## 5. Recommendations for Creating and Sustaining IRCs

The main recommendations supported by this paper are summarized as follows. The process for creating the IRCs should be transparent, involving consultation with stakeholders and educating them about the objectives and functions of the new institution while establishing precedents for transparency and participation. The government might move directly toward establishing an independent regulatory commission, avoiding temporary organizations. The regulatory entity could have jurisdiction over electricity alone. If in subsequent years, administrative economies of scale or other factors warrant it, more sectors may be added.

The roles of ministries and the regulator should be clearly defined, enabling the IRC to fulfill the key regulatory functions identified here. An independent regulatory agency can build investor confidence, lower the cost of capital for system expansion, establish incentives for efficiency, and ensure fair prices for customers.

The commission should be established and headed by a high-level appointed regulator, who should have a civil service level above that of deputy minister. The regulator and members of the commission must be selected on the basis of personal competence, integrity and independence.

The government must fund the regulatory commission until adequate funding becomes available through consumer billings, license fees, etc. Decisions of the IRC should be subject to appeal to a suitably high-level appellate body, with the basis of overrule limited to errors of factual data and whether the law was appropriately followed.

Creating a new institution requires some groups to give up power. However, if current ownership and oversight arrangements are not promoting strong sector performance, the stakeholders need to agree on the design of an IRC. In the process, participants should take steps to avoid inter-ministerial power struggles. A ministry may both operate in the industry and provide oversight, but staff cannot simultaneously work for the regulator and the regulated company.

Institution building is a complex and arduous process. Current stakeholders must be educated regarding the objectives and procedures of the IRC. The scope and functions identified here must be reviewed and incorporated into the responsibilities of the IRC. As a nation gains experience with the IRC, modifications in the law may be required. Alternatively, changes in procedures or regulatory instruments may be consistent with a broad legal mandate.

Best practice principles emphasize consultation and transparency, which should be core values in the IRC design process. Stakeholder input can be obtained via workshops and position papers. Note that “light-handed” regulation that emphasizes incentives is likely to be more successful than trying to micro-manage the activities of service providers (Sappington, 1994). The fundamental information asymmetry between suppliers and the regulators gives the agency an inherent disadvantage. However, benchmarking can be used as part of yardstick regulation. This involves setting incentives based on best practice as achieved by other firms.

Although many of these points are fairly basic, it often is helpful to step back and view the entire system of regulation, gauging whether necessary factors are indeed present to a sufficient degree. Sometimes that which is *obvious* goes unnoticed. By identifying functions that must be performed by an IRC and the three factors (mandate, resources, and values) that must support regulatory activities, we hope that readers will gain some fresh perspectives on the design of effective regulatory commissions.

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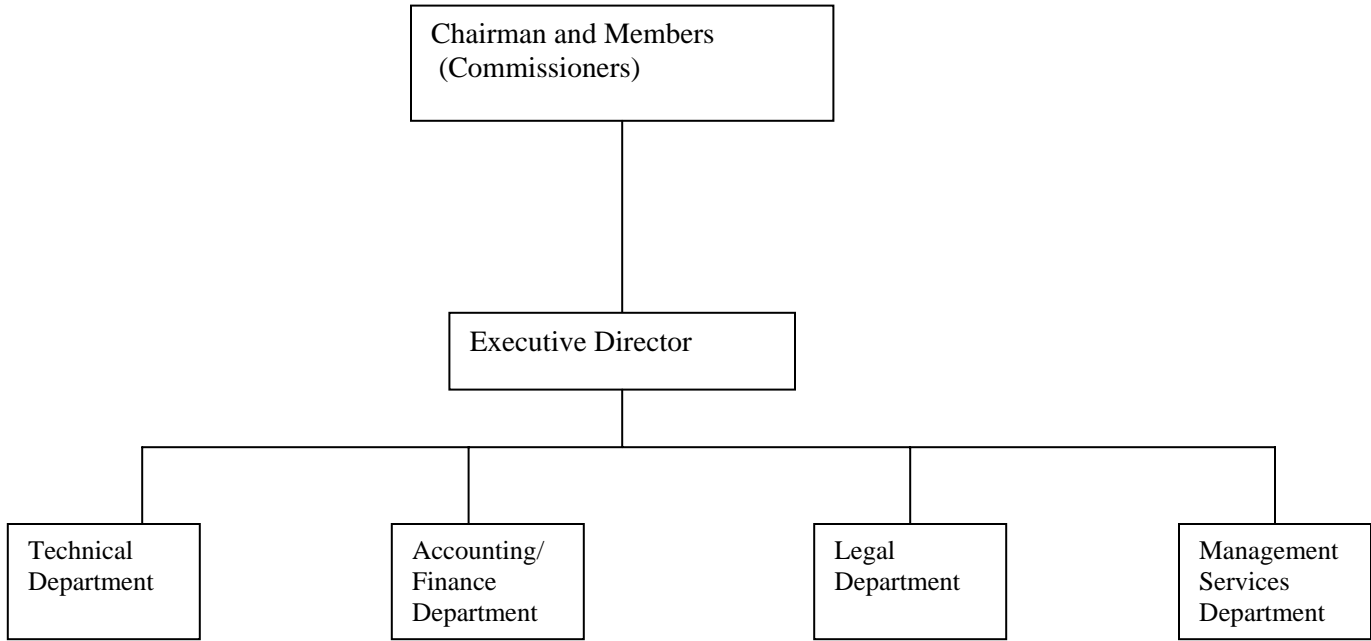
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**Appendix**

**Organizational Chart Model A  
(Multi-Member Commission)**



**Organizational Chart Model B  
(Specialized Responsibilities)**

