

Appendix A

A Model Electricity Regulatory Commission: Its Functions, Administrative Procedures and Organizational Structure

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A-1. INTRODUCTION

An effective regulatory agency is an essential requirement for a modern electricity sector to be efficient and responsive to the needs of electricity users and of society at large. This is especially true as electric sectors worldwide are being reformed and restructured to introduce or increase competitive market forces acting in the sector. This report summarizes the functions, processes and organizational structure of regulatory agencies, especially as they relate to competitive power markets.

What follows briefly describes the functions of such a regulatory agency, what administrative and legal processes it typically engages in, and how its organization can be structured to maximize its effectiveness. Throughout the report we refer to an electricity sector commission generically as a Commission or Electric Regulatory Commission (ERC).

A-1.1 The challenge of introducing competitive market forces

The creation of a competitive market in a sector that has historically been served by a vertically integrated monopoly is a daunting challenge. The antimonopoly (or – in the U.S. – “antitrust”) provisions of the laws that protect competition in competitive markets are not sufficient when one entity already has both a 100% or highly dominant market share and also owns an essential “bottleneck” facility, such as transmission, to which its competitors must have complete, open and equal access. The challenge is even greater when the vertically integrated monopoly has been government-owned, since the same government that will be making the new market rules will also be the dominant competitor. Under such circumstances, persuading new “competitors” to invest capital whose returns are dependent on market success will be difficult until the newcomers are confident that their rights will be controlled and respected by an entity that has the power, commitment, stature, and competence to ensure fair treatment. An Electricity Regulatory Commission faces the challenge of building this

confidence.

To be truly successful, the Commission must build a market that is characterized by true competition. Characteristics of such a market include:

- A sufficient number of actual competitors, no one of whom is in a position to control pricing in any market sector;
- Ease of entry and of exit; equal access to all essential facilities;
- Equal access to market information in connection with the use of essential facilities,
- An opportunity for load response and other demand-side initiatives to compete on fair and equal terms;
- Recognition of the unique advantages of some renewable resources and equal environmental standards (with appropriate phase-in periods).

Experience shows that to avoid the exercise of market power by suppliers, a market may need the participation of many competitors. The creation of these conditions requires a regulatory agency with a clear mandate to do so, for opposition from existing entities may at times be intense. Furthermore, the regulatory agency needs the power and the skills to implement structural market reforms such as separation of generation from transmission and divestiture of generation in markets with excessive concentration. The agency cannot rely entirely on behavioral solutions (such as codes of conduct) or on after-the-fact enforcement to bring about an effective market. Rather, the regulatory agency must be able to fashion structural solutions to address market design problems.

The first task of an Electricity Regulatory Commission is usually to oversee development of the generation markets. To accomplish this, the Commission needs exclusive authority for review and approval of all rules

and regulations necessary to implement and maintain fully competitive wholesale generation markets, including all matters pertaining to access and operation of the transmission system. This task will initially require promulgation of principles that must be included in designing and operating the generation market, followed by a period of review and approval of specific plans. These principles will need to encompass the ownership and structure of the generating companies, transmission access and pricing rules, rules encouraging entry of new participants, co-generation, the need for protections from cross-subsidies between regulated and non-regulated activities, and the assurance of protections for residential and small commercial customers.

A-2. MARKET RELATED FUNCTIONS

Competitive power markets require the constant oversight of an independent and professional regulatory body for at least four reasons:

First, competitive generation markets must be carefully designed, monitored, and improved to prevent any participant or group of participants from unduly influencing the market (that is, exercising so-called “market power”).

Second, competitive power markets require continuous access to large amounts of capital. Such access is possible only when investors have confidence that electric sector decision-making and enforcement is being carried out in a professional and an impartial manner, separated from excessive political influence and free of corruption.

Third, the transmission and distribution portions of the power sector will often remain a monopoly industry responsible for delivery of an essential service. If this is the case, regulatory oversight will be needed to assure that the transmission and distribution industry that supports the competitive generation market also serves customers reliably, safely, and efficiently. Thus licensing, tariff setting and enforcement of fair trading practices will be crucial parts of the Commission’s mission.

Fourth, the very size of the power sector, its vital role in the economy, and the large environmental consequences of the industry mean that continuing governmental oversight is needed. The transitions inherent in restructuring can have negative economic, social and environmental impacts, which need to be anticipated and shaped from the outset. Providing this oversight is the job of the ERC.

For these reasons, an Electricity Regulatory Commission is typically charged with a variety of functions, some market related and some not market related. We will discuss first market-related functions. These include:

- Separating generation from the grid
- Reforming existing contracts

- Managing risk
- Designing market code
- Eliminating market power
- Maintaining financial viability
- Accounting and auditing
- Dealing with public benefit programs.

A-2.1 Separating generation from the grid

The Commission oversees basic market structure questions, such as separating existing generation interests from the owners and operators of the grid. Separation of generation interests from control of the grid is an essential step in creating a competitive generation market. THE ERC must assure that the generating sector is unable to manipulate the transmission and distribution sectors.

Separation is a financial, accounting, and organizational process. A key issue will be to accomplish full separation in a way that is fair and, efficient without raising, consumer prices. If generation prices are above generation costs and transmission and distribution prices are below costs, separation may well produce price increases for the monopoly wires services. Unless these are offset by decreases in generation costs that are passed through to customers, electricity costs could rise, thereby undermining the case for reforms.

Separation also raises other risks and opportunities. For example:

- Separation of generation into groups of plants must be done with care in order to avoid local market power problems or potential problems in specialized markets such as a negative impact on standby capacity.
- Separation of generation into groups with similar fuel characteristics may increase market power problems and make environmental reforms more

difficult.

- The goal of consistent application of environmental requirements on all generators will be accomplished more effectively if each newly separated generation company has similar average mission levels.

A-2.2 Reforming existing contracts

Reforming existing contracts that are inconsistent with a competitive market is a necessary step toward an efficient power market. Existing contracts often have at least two types of problems. First, in some cases the prices of existing contracts may be well above market prices and the contracts include minimum take provisions. Second, many contracts include fixed and variable costs combined in a single “energy” price. Dispatching based on the high “energy” price is inefficient and expensive. Reforming existing contracts in ways that promote efficient use and dispatch is typically a high priority task for the Commission.

A-2.3 Managing risk

The Commission sets standards governing consumer exposure to market risk. Regulators should determine how much of a supplier’s electricity needs must be hedged through a variety of financial or physical contracts. One of the important lessons from the California crisis is the need for a balance of long and short-term generation commitments. The design of competitive power markets provides many options to assure that efficient dispatch and investment decisions are made without undue financial exposure to spot energy prices.

A-2.4 Designing the market and market code

The Commission needs to be responsible for developing, reviewing, amending and approving all market rules or codes. Such codes apply to all aspects of the power market including market design, bidding and dispatch rules, transmission pricing and access terms, financial settlement procedures and governance.

Exercising authority over the market codes is an ERC’s primary approach to regulating the power markets. While an independent Market System Operator (MSO), sometimes called an Independent System Operator (ISO), may be responsible for the day-to-day administration of the market code, oversight of the market codes will be an ongoing responsibility for the ERC. Experience shows that, once market rules are set, market participants will seek, and find, every opportunity to gain a competitive advantage, often using those rules to their advantage. The actions of the market participants will expose weaknesses in the market rules, which, if left uncorrected, will have undesirable effects. This means the ERC should have an active ongoing role in monitoring the operation of the markets to assure long-term efficient operation.

Market codes are comprehensive and cover at least the following: system reliability, transmission issues, market services, power supply planning and procurement, capacity and system planning, end-use efficiency, distributed resources, renewable energy and environmental improvement.

System reliability, safety, and adequacy. As the power system moves from a government monopoly into a complex of privately owned companies, responsibility for setting forth reliability standards, assuring that they are met efficiently and assessing their costs according to sound economic principles, will remain governmental tasks. Private entities acting in their own self-interest will not perform this function well. Ultimately, the ERC will need to determine the level of reliability that constitutes a reasonable national standard, although local differences, both as to the level and the tariff principles, can be tolerated. Emergency planning to deal with outages from events such as storms should be a provincial

matter, though the ERC may require that such plans be in place and that they meet certain minimum standards.

Transmission pricing, access, planning, and expansion. Whether the transmission grid is operated as a national entity or as a set of regional grids, the governing principles will have to be set at a national level. Determining that the transmission system is to be operated on a basis that gives equal access to all market participants should be part of the basic restructuring policy established by the government, but the implementation and the enforcement of this policy will be an important function of the regulatory commission.

Providing for transmission planning and expansion is, in part, a matter of establishing economically sound tariffs. When such tariffs are in place, they will indicate which parts of the system are facing congestion and how that congestion can best be relieved. However, ERC rules must also make clear who is responsible for undertaking the necessary planning and construction and indicating the principles that will assure that it is paid for. These guidelines should include full inclusion of demand-side and distributed generation options to insure that least-cost solutions for transmission expansion are implemented. The guidelines should also seek to assure that uplift charges are applied only to measures bringing widespread benefits and do not result in charging costs to all customers of measures that benefit only a few.

Market services. Many of the services necessary to support electric power markets can be provided competitively. However, these markets may be especially susceptible to abuse because they can be quite local and therefore highly concentrated. Whether these services are provided through regulated prices or competitively will have to be decided through careful review of the specific circumstances involved. For regional markets, such reviews are likely to be done by the Commission. For provincial markets, they can be done locally or pursuant to ERC guidelines.

Power supply planning procurement. In a competitive generation market, the fundamental responsibility for power supply planning and procurement should reside with the entity responsible for serving customers. If retail

customer choice is allowed, then power supply planning also becomes the responsibility of those end use customers who choose to assume that function. However, recent experience in California and elsewhere has shown that the government must still exercise a review function to assure that important public values are maintained during this process. For example, ERC guidelines should assure that customers are protected from excessive price volatility and that diversity of fuel supply and energy sources is maintained.

The ERC should establish guidelines for the use of competitive bidding processes for the procurement of power generation. Such guidelines should include consideration of market power as well as recognizing the real value of different sources. Such guidelines should also allow considerable leeway for local and regional experimentation, for this is an area where much can be learned from experimentation with different approaches. Deciding which approach is used requires a careful balancing of efficiency considerations and market power concerns.

Capacity and system planning. The recent California experience shows that even with a competitive wholesale market there remains the need to assess energy demand and plan for needed capacity additions and transmission and distribution expansion. This is especially true for large systems that are experiencing significant growth.

The Commission should set guidelines for comprehensive system reliability assessments and expansion plans. The results of the planning should be publicly available and should be submitted to other relevant government agencies engaged in other planning and investment decisions. These guidelines should include review of the need for new generation transmission and generation facilities.

End-use efficiency. A recent study of United States markets by the U.S. Federal Energy Regulatory Commission showed that the benefits of fully incorporating demand-side management in power markets were five times larger than the benefits of expanding regional markets. Because the potential for cost-effective end use efficiency is so large, and because

end-use efficiency can contribute greatly to environmental and sustainability goals, the Commission should have a mandate to implement greater efficiency in the power markets under its jurisdiction. However, because effective implementation of many end-use efficiency programs requires extensive contact with customers, implementation may be most effectively carried out at the provincial and/or local level. The ERC should adopt guidelines for load management, conservation, and energy efficiency in the transmission, distribution and sale of electricity. This authority should also adopt guidelines for end-use energy efficiency incentives.

Distributed resources. Distribution technologies are the fastest growing part of the utility industry. New and small sources of generation such as micro turbines and fuel cells are rapidly changing the nature of the grid. As cost and performance (including environmental performance) improves, these resources are increasingly providing the low-cost solution to consumer energy needs. The Commission can assure that market barriers for these technologies are reduced or eliminated and that technical standards are implemented by the industry to facilitate their use.

Renewable energy. Renewable energy resources such as wind, geothermal, and solar can often provide cost-effective sources of power with far less environmental risk than conventional sources. The special technical and operating characteristics of renewables should be taken into account when designing markets, approving market rules, and adopting transmission pricing and access rules.

Environmental improvement. The Commission should be involved in the formulation of environmental standards as they affect the power industry and should assure that generators do not gain any competitive advantage through an ability to emit pollutants to a disproportionate degree. Any ERC bidding guidelines and guidelines covering system dispatch should also reflect the jurisdiction's environmental goals and standards.

A-2.5 Market power

Enforcement of competitive rules. As indicated previously, introducing competition to an industry that has consisted of a vertically integrated and government-owned monopoly is a very difficult task. Unless potential competitors are convinced that the government is truly committed to this course, buyers of existing power plants and investors in new ones will not be easy to find. Market creation and market monitoring are likely to be two of the Commission's most important functions. The ERC's rules should delineate the basic parameters of competitive markets and should require strong market monitoring capabilities. The ERC itself should have the power to investigate and punish anticompetitive power market practices, perhaps in conjunction with the agencies that have general responsibility for preventing anticompetitive practices throughout the economy.

Mergers and acquisitions. The ability to constrain market power necessarily includes the power to review and to approve mergers and acquisitions in all sectors of the electric power industry and to make such approvals subject to any necessary conditions. Mergers can be a desirable way of increasing the efficiency of the industry structure. However, they can also lead to elimination of real or potential competition as well as to the creation of unwise ties between competitive segments of the industry and bottleneck monopoly transport infrastructure to which all competitors must have equal access. Mergers and other corporate reorganizations can also be used to create corporate structures designed to thwart regulation or to move assets beyond the review of regulators. Consequently, the Commission should review all transactions involving the disposal of assets by a monopoly licensee.

Mergers and acquisitions should be approved only if they further the public interest. The Commission should develop merger guidelines indicating the characteristics of desirable mergers. Mergers that clearly meet these guidelines should be assured of expeditious and favorable treatment.

Transactions between corporate affiliates.

Transactions between affiliates of the same corporation have a mixed history in the field of utility regulation. While such transactions can be a source of efficiencies, they are often used to give a preference to a corporate affiliate in transactions with a monopoly whose customers have no choice if their service costs increase or if their quality declines as a result of inferior performance by the affiliate. Regulators need the power to review and reject, or attach, conditions to – the creation of corporate affiliates of monopoly licensees. Regulators need also to establish “codes of conduct” that assure that such transactions are fair both to captive customers and to competitors. Finally, regulators can exclude the costs of such transactions from regulated rates if the prices or other conditions appear excessive or if the selection process shows that competitors’ services did not receive fair consideration.

A-2.6 Financial viability

If power sector reform is successful, all sectors of the industry will be financially viable and the efficiency benefits of restructuring will benefit consumers and the industry. The role of regulators is not to guarantee financial success of the industry at the expense of consumers. Their role includes protecting consumers from the excessive cost of inefficient suppliers or from suppliers’ exercise of market power.

Financial viability of each sub sector of the industry is important for its own reasons. Financial viability of the generating sub sector is important to attract needed capital at reasonable terms. The financial viability of the generating utilities depends on the design and operation of the generation market, the dependence of generation on revenues from the market as well as long-term contracts with purchasers, and on financial strength of the purchasing distribution utilities.

The financial viability of the transmission and distribution utilities will depend upon their efficient operation and on the level of end-user prices.

The financial viability of the industry rests on being allowed to charge prices that recover reasonably incurred

costs. Consumer benefits are realized if regulation is successful in assuring that the only costs that are included in end-user prices are those of an efficient and competitive industry.

A-2.7 Accounting and auditing

Accurate information is the lifeblood of the regulatory process. It is also essential to investor confidence and to effective public review of energy sector activities. Because the sector is so vast, the principal responsibility for providing accurate information must rest with the licensees. However, the regulators must have broad powers to develop reporting requirements and formats, to verify through inspection and audit the accuracy of the information, and to penalize those who provide incorrect information. Accounting irregularities have recently been involved in the collapse of several large U.S. corporations (including several regulated entities). These collapses have cost investors billions of dollars and have dramatically affected public and investor confidence in the U.S. They have also lowered the values and the ability to raise capital of many companies who have not been involved in accounting irregularities.

One of an ERC’s earliest responsibilities will be the development of a uniform system of accounts and financial reporting requirements for the energy sector. The basic financial reporting requirements should be uniform across the government to allow for fair comparisons of the financial performance of different companies. The standards should meet the country’s generally accepted standards or international financial reporting norms, whichever are more rigorous, in order to assure that firms can compete successfully in international capital markets.

The accounting rules should be designed to accurately report costs and allow the Commission to establish reasonable prices for regulated services. The accounting rules should be designed to reveal the costs of each service provided and each customer group served.

Enforcement and remedial powers. No regulatory process can succeed without adequate powers and resources for effective enforcement. The financial stakes

in electricity regulation are so large that violations are inevitable. Unless violators are caught and punished, such conduct will soon undermine regulation.

The necessary enforcement authority must be set out in the documents or the legislation establishing the ERC. Otherwise, those against whom the ERC seeks sanctions will certainly argue that such sanctions are beyond the Commissions powers. The necessary powers include prompt and complete access to all relevant information, the power to impose substantial fines, the power to penalize through tariff reductions, and the power to suspend and revoke licenses.

The tasks of enforcement and remediation are more difficult when the government owns the regulated entities. This is because the incentives – in the form of enhanced or diminished profitability – that can be brought to bear on privately owned firms are much less effective against government entities, which are often not expected to turn a profit. In the case of government-owned entities, the necessary powers may include the power to order the entity to place some of its functions under a management contract and, conceivably, the power to penalize senior individuals who perform poorly.

The ERC should ensure that all enforcement proceedings are transparent, and that no penalties are imposed without the accused violator having a chance to review the evidence and to make a thorough defense. In the event that the markets are not functioning well through the improper exercise of market power, the penalties might also include orders to pay damages to injured parties. Other remedial actions might include divestiture, revision of market rules, imposition of price caps and orders prohibiting specific acts and practices.

Dispute resolution. Commercial disputes are inevitable during any utility industry restructuring. Often the disputes involve genuine differences of law and policy, but occasions will also arise in which an entity will seek to use delay to its advantage. The integrity of the competitive marketplace requires that such disputes be resolved fairly, with a minimum of delay and expense. The ERC's expertise can be of great importance in

bringing about such resolution.

At the same time, such disputes have the potential to consume immense amounts of the regulator's time and attention, distracting from the resolution of other matters of national importance. Consequently, the decision of which types of disputes are to be resolved by the ERC and which types belong in other forums (such as the courts) is a very important one.

Disputes involving issues fundamental to the functioning of the market or to the regulation of monopoly utilities are likely to be best resolved before the Commission or the appropriate provincial regulator. Examples of such issues might include disputes over open access, anticompetitive practices, or the dispatching of particular power plants. However, the ERC should be careful not to get drawn into the broad range of commercial and other disputes that can arise that have little or no importance for the basic regulatory mission.

The Commission will need to have personnel trained in the use of informal dispute resolution techniques, which are quicker and less expensive than more formal processes. Disputants should have the option of using these less formal processes, and the ERC should have the power to require their use.

When disputes cannot be resolved informally, the ERC will need to employ processes that distinguish between matters of interest only to the parties involved and matters of broader importance. As to matters of broader importance, the Commission may want to involve relevant parts of its own staff or take other measures to be sure that all interests are properly evaluated. As with other regulatory decisions, review by courts should be limited to assuring that the ERC followed the necessary procedures and did not act beyond its scope of legal authority.

Licensing of competitive generators. Permitting requirements generally include reviewing financial and technical capabilities, verifying the existence of any necessary environmental or other permits, and ensuring compliance with market interconnection rules. In situations in which other governmental approvals are

required, the Commission may usefully be able to act as a coordinator and scheduler for the issuance of the necessary approvals. Since prices for competitive generators are to be set by the market, licensing and regulation do not include setting prices.

Information publication. To function well, electricity markets require three basic types of transparency: financial, commercial, and operational. The California crisis involved significant failures in all three. Other examples of excessively volatile electric markets have probably involved failures in at least commercial and operational transparency.

Financial transparency involves providing accurate accounting information about corporations whose shares are publicly traded. While it is primarily a responsibility of the securities regulators, the Commission should assure that energy sector companies comply with these requirements and those necessary for effective price regulation. Commercial transparency involves maximizing access to information relating to the workings of the market itself. Regulators are often asked to make confidential most — even historic — information relating to bids, prices and market share. Doing so can put customers, policymakers and the public at a disadvantage relative to market participants in understanding market developments and monitoring potential abuse. Operational transparency pertains to the workings of the electric system itself — for example, which units are being dispatched when and for what periods of time.

The Commission should establish a strong presumption in favor of full transparency, permitting the withholding of information in its possession only when it is convinced that specific harm is the probable result of disclosure and that the harm will outweigh the public benefit that transparency brings.

A-2.8 Dealing with stranded expectations and programs of public benefit

Restructuring the electric power industry inevitably brings disadvantages to some groups that have benefited from the existing system. When the existing

benefits are left stranded by changes regulators are often called upon to play a role in determining how to respond. In particular, when the rates to all classes of customers are brought into line with actual costs of service, programs that have depended on subsidies are threatened. The beneficiaries of such programs have strong incentive to resist the changes, no matter their value to the society as a whole. At least four responses to such groups are possible: 1) Their expectations can be ignored, and they can be told to accept the change; 2) The restructuring can be designed so that they receive some offsetting benefit that is more useful to the entire society¹; 3) These expectations can be bought out²; 4) The expectations can continue to be met in the restructured system.

The fourth option is often chosen with respect to programs that have particular social benefits — such as assuring electric service to all customers, funding research and development or providing service from renewable energy sources. Some countries choose to fund such programs through tax revenue, which allows electricity prices to be accurate indicators to customers of actual system costs. Other countries choose to include funds for such programs within the electric system. In the United States, when the costs of such programs are treated as a surcharge on the remaining monopoly parts of the electric system, they are commonly called system benefit charges. In the case of renewable energy, some systems require that a percentage of the electricity supplied to customers be from renewable or non-fossil-fueled energy³. While the extent of such programs is normally a policy choice for the government, the specific administration is often left to regulators.

¹ For example, an efficient industrial customer who has received special subsidies can be given access to energy efficiency programs that will enable it to receive a lower bill even if its rate is no longer subsidized.

² For example, U.S. utility investors who feared that their money in older plants would be lost if customers were free to choose to buy from newer, less expensive units were safeguarded against such losses through “transition surcharges” on the use of the transmission and distribution systems.

³ In the U.S. such programs have been called “renewable portfolio standards.” In the U.K. a similar requirement was called the “non-fossil fuel obligation.”

A-3. NON-MARKET RELATED FUNCTIONS

Although the goal of restructuring may be to achieve competitive wholesale markets in which prices reflect costs, prices and other conditions of service may continue to be set administratively for the monopoly transmission and distribution sectors, as well as for generation and system support services in all markets that have not become competitive. Among the crucial decisions that must be made by the ERC early in the transition to “independent” regulation are 1) the lines of jurisdiction between the national and other regulatory bodies (if any such bodies are utilized), as well as the duties to be performed by each; 2) the tariff-setting and rate design methodologies to be employed by the ERC; 3) the relative role of licenses and regulations in setting forth the requirements to be followed in the electric sector; 4) the standards for determining that a market has become sufficiently competitive to relax or eliminate governmental tariff setting.

Discussed below are functions of a Electricity Regulatory Commission that relate to non-market elements of the power sector. These include rate designs, consumer protection, permitting, and financing.

A-3.1 Regulating prices for distribution and end-use sales

A basic function of electric sector regulation everywhere in the world is setting tariffs, or prices, for distribution and end-use sales. If this function has previously been conducted by another agency, or multiple agencies, typically it is—or should be – transferred to the ERC. In competitive wholesale markets, changes in prices should be passed through to load-serving entities and their customers. There are three reasons why customers should see increases and decreases in prices in the power market.

First, a basic principle of restructured markets is that prices reflect costs. Without this basic condition, most of the benefit of a restructured market cannot be achieved. Second, electricity pricing is part of the basic financial foundation of effective regulation. The ability to set

prices is fundamental to the ability to create meaningful incentives and to tie prices to policy. If tariff setting is done in a manner inconsistent with the setting of other regulatory policy, confusion and inefficiency may result. Third, all of the arguments for transparency and independence in the exercise of regulatory functions apply with particular force to the setting of prices. If that function remains elsewhere in the government, then price setting will lack the benefits that restructuring is intended to convey. Separating the pricing from other regulatory functions should be avoided.

Revenue setting methods. The single most important task for regulators dealing with monopoly aspects of the electric system is the determination and verification of the cost of transmitting and distributing the electricity to ensure its availability to consumers at reasonable prices. This function is the core responsibility for most utility regulatory agencies around the world. Rate design is the structure of prices to various classes of customers offered by a regulated company

The first step in setting a utility’s prices is determining its cost structure. Regardless of the theoretical pricing mechanisms used, each utility has a solvency requirement that is principally tied to its embedded cost structure. The utility’s embedded cost level and structure will be affected by the separation of generation from the grid.

The Commission needs to adopt rules or license terms setting forth its revenue and pricing method and principles. As a general matter, rates should be set so as to enable a regulated monopoly a reasonable opportunity to recover prudently incurred expenses (including investment) and a fair return on the remaining cost (the undepreciated portion) of investment.

In practice, there are several different approaches for achieving this goal. They can be broadly categorized as traditional, rate-of-return regulation and alternative, or performance-based, regulation. All methods of regulation, in fact, give companies performance incentives. The question then becomes, “what kinds of behavior should be encouraged and what kinds discouraged?” The

answers to those questions will help the regulatory agency decide what approach will work best for its purposes.

Objectives of rate design. The general objectives of economic regulation inform the rate design process. More specifically, regulators usually seek to set prices that recover the necessary revenues. In recent years, they have increasingly sought also to set economically efficient prices (i.e., prices which reflect, to the greatest extent possible, the long-run marginal costs of service), while simultaneously enabling the regulated utility a reasonable opportunity to recover its legitimate costs of providing service (including return on investment).

The particular problem faced by regulators is that the legitimate historic (accounting or embedded) costs that a utility incurs are to be recovered in rates, but these costs may only bear a passing resemblance to the forward-looking long-run marginal costs that form the basis of economically efficient prices. Reconciling the need to cover historic costs with the desire to set economically efficient prices, as well as to meet other objectives of regulation (such as fairness and low-income protection), requires clear judgment. The sometimes competing rate design goals have been categorized as follows by a leading U.S. commentator on regulation⁴:

Revenue-related objectives:

- Rates should yield the total revenue requirement;
- Rates should provide predictable and stable revenues; and,
- Rates themselves should be stable and predictable.

Cost-related objectives:

- Rates should be set to promote economically-efficient consumption (static efficiency);
- Rates should reflect the present and future private and social costs and

benefits of providing service;

- Rates should be apportioned fairly among customers and customer classes;
- Undue discrimination should be avoided; and,
- Rates should promote innovation in supply and demand (dynamic efficiency).

A-3.2 Consumer protection and complaints

A basic regulatory responsibility is to protect consumers from abuse and discrimination of monopoly utilities. The Commission has the responsibility to identify, investigate, and resolve consumer disputes.

The Commission should adopt service standards and other rules relating to customer service and customer dispute resolution process. Possible approaches for dispute resolution include mediation, arbitration, and the use of a formal complaint procedure.

A-3.3 Permitting

In addition to its licensing authority for generation, the Commission needs the authority to license other activities. For example, distribution utilities may be licensed for specific periods of time, private investors may be licensed for build and operate specific transmission lines, and new entities may be licensed to be retail sellers or companies that sell energy services (often referred to as Energy Services Companies). In any of these situations, permitting of the new entities should be required to assure that the new entities have the necessary technical and financial capability to provide the service. If retail competition is allowed, the ERC should have the responsibility to assure that retail sellers

are financially and technically competent. Permitting requirements will also assure that retailers are aware of and will comply with all Commission regulations.

A-3.4 Financing approval

The ERC guidelines for monopoly regulation should ensure that the assets being financed are consistent with a reasonable construction plan, that cost of the financing is reasonable, and that no onerous terms regarding defaults or encumbrances on property are included in the terms and conditions of the financing.

⁴ James Bonbright, *Principles of Public Utility Rates*, 1988 ed., pp. 383-384.

A-4. ADMINISTRATIVE AND LEGAL PROCESSES

An ERC that operates transparently ensures that its workings are understandable to energy companies, customers, and investors. It clearly states the basis for its decisions, and makes available the information on which its decisions are made. Its processes allow those affected by decisions to participate in the decision-making. Finally, it operates in accordance with established rules and principles.

No set of rules and procedures can make up for individuals who are not qualified for their jobs or who are not dedicated to furthering public goals. Thus, the individuals appointed to lead the regulatory commission are critical to establishing its capabilities and credibility. Once highly qualified and dedicated individuals have been appointed to key positions, the legal and administrative processes determine whether the regulatory body functions with independence and transparency.

Procedures governing the wide variety of matters coming before the Commission must balance the goals of efficiency and timeliness with fairness and soundly based decision-making. Procedures should inform the public and other participants of their rights and responsibilities. The fairness and consistency of these rules is what the public, market participants, and investors will use to judge the transparency and independence of the system

A-4.1 Types of proceedings

International experience provides a range of procedures that can be used for resolving regulatory issues. Some are more formal and legally oriented than others. These procedures will need to be adapted for use in light of relevant legal traditions and requirements. Which approach is used for a particular case should be determined by the nature of the issues involved. The administrative rules should make clear which type of procedures apply to which types of cases.

Formal proceedings. Formal proceedings adapt court-type procedures to the regulatory context. When such

procedures are employed, the regulators become judges, and the utility and other parties proceed as they would in a trial. A case begins with a formal and extensive “filing” by a person seeking a regulatory action. Notice of the filing is given to the general public. Others with interest in the outcome are permitted to “intervene”, to request additional information, to ask questions during hearings, to present their own views (with supporting evidence) as to what the outcome should be and to appeal the regulatory decision to an appropriate court if they feel that the law has in some way been violated.

Formal proceedings take longer than other types of proceedings but also allow for more thorough examination of the matters at issue. They are best suited to situations in which important facts are in dispute. The financial performance of particular companies, whether in a licensing or in a tariff or in an enforcement context, often give rise to such situations. Witnesses who testify in formal proceedings must take special care to be accurate and precise, for they can be cross-examined by persons who disagree with them. This increased care and precision can be useful to decision-makers who must rely on the information provided to them by the parties. Governments that have tried to conduct regulation entirely without the possibility of formal proceedings have sometimes been embarrassed to find that the assumptions on which important decisions were made contained inaccuracies that could have been avoided by closer questioning.

Less formal proceedings. A wide range of less formal proceedings are much less likely to involve courtroom procedures, especially the questioning of witnesses. Less formal processes may involve open meetings, workshops, and written comments. The procedures may vary from one proceeding to another, with the decision-makers employing the combination of steps best suited to giving them the information necessary to making their decision while hearing from those whose interests may be affected by the outcome.

Less formal proceedings generally involve policy or legal

questions applicable to the entire industry or part of the industry. For example, implementation of open access, amendments to the market code, standards of service to customers, criteria for licenses, interconnection requirements for generators and filing requirements for particular types of permits could be resolved using less formal procedures.

Less formal proceedings begin with public notice of the issues being considered. This notice may take the form of a statement that the matter is to be considered and an invitation to submit comments (in the United States called a “notice of proposed rulemaking”), or it may take the form of publication of a proposed rule, accompanied by an invitation to comment on it. In some cases the proposed rule may come from a market participant or other person. In any case, the notice discusses the intention behind the proposed rule, explains how to participate in the proceeding and gives the proposed schedule for completing the process.

A-4.2 General legal and procedural principles and safeguards

Public interaction. Regulatory agencies that allow public interaction by those affected by its decisions will make better decisions that are more legitimate and acceptable to those who have had a voice in the process. However, individual members of the public rarely have sufficient information or resources to participate effectively in complex regulatory proceedings. Options for assuring a public voice in these circumstances include assigning this function to members of the commission staff, setting up a separate agency with this responsibility, or funding of nongovernmental organizations to play this role in specific cases. In addition, the consumer protection department of the regulatory agency should have the capability of presenting its experience and expertise in any proceeding to which they are relevant.

Effective public interaction often depends upon public access to information possessed by the regulatory agency. In the U.S. the general principle is that all such information is public unless it falls into a protected category, such as national security, commercial sensitivity, or personnel privacy. There has been a general

presumption in favor of releasing information unless good reason exists for withholding it.

Written decisions. At the conclusion of all proceedings, whether formal or less formal, Commission decisions should be issued in writing. The written decision should state not only the result but also the reasoning and the conclusions of fact and law on which the decision rests. The decision should also discuss the relationship between this case and other related decisions that the commission has made previously. In addition, commissioners who disagree with the majority should have the right to issue a statement of their dissenting views. These requirements are crucial to permit effective review by an appropriate court. They are also necessary to allow regulated entities and others to understand regulatory principles and to predict the types of proposals the regulators will approve or disapprove.

The decision should be based on the material presented to the Commission during the proceeding as well as its own expert judgment. However, it should avoid making decisions on the basis of private communications from officials or others about which the participants in the proceeding have no knowledge and therefore no opportunity for rebuttal. When such communications occur, they are often a source of misinformation and of suspicion by participants that the regulators are not making independent judgments. Therefore, they undermine the very confidence that the regulatory commission exists to engender.

Settlements. In some proceedings, some or all participants will reach a negotiated settlement as to the outcome before the Commission itself reaches a decision. Such settlements then have the status of a recommendation to the Commission. Participants opposed to the settlement should still have an opportunity to present their positions, and a commission decision approving a settlement should have the characteristics of other decisions discussed earlier.

The consensus involved in such settlements deserves some deference from regulators, but regulators still must exercise their own judgment. Settlements are by their nature treaties, i.e. compromise documents satisfactory to all of the signatories. These compromises among

particular parties do not necessarily yield the best result for society as whole.

Legal effect and enforcement. Regulatory decisions are legally binding and must be followed unless a higher authority reverses the decision. Failure to comply with commission orders can result in any of several actions: fines, other penalties (such as a reduction in rates of monopoly providers), or even revocation of a firm's permit to operate. A regulatory agency needs clear powers of enforcement. These include an ability to get all necessary information, to inspect as necessary, and to audit the records as well as the management and the operation of regulated entities.

Reconsideration and appellate review. If a participant in a case believes a Commission decision to be unjust it may ask for reconsideration. How to appeal decisions (as well as the standards to be used) should be stated in the law establishing the regulatory commission. The person should be required to explain in writing the factual and legal basis for his or her request. Such requests should be filed within a certain number of days after the commission's decision is issued (usually 15 or 30).

If, after the Commission has dealt with a request to reconsider, the person still feels aggrieved, he or she may appeal the decision to a higher court (or regulatory agency) as designated in law. The grounds for the appeal must be clearly stated and other parties may have the right to join or oppose the appeal. Considerations of efficiency as well as respect for the expertise of the regulatory agency suggest that the appellate review should be limited to determining whether the commission committed any errors of law or procedure. The appellate body should not, generally, substitute its own findings of fact or sense of wise policy for the conclusions of the Commission.

A-4.3 Some specific types of rules

Following are some of the areas for which the Commission will need to have rules or procedures in place as it begins operations:

Internal procedures. Because of the complexity of its

duties, the agency will need to have a clear set of procedures controlling the flow and scheduling of the matters before it, whether they are initiated within the agency or through a filing or a complaint.

Minimum data, impact statements and format requirements for applications. Often, a utility or other entity will file a request for regulatory action of some kind – a license, a rate increase, permission to build new facilities, or a complaint against another entity. The filing should be made in writing and should describe in detail the issue and proposed resolution of it. The information that should accompany a filing is typically set out in one of the agency's rules. The absence of that information is usually grounds for not processing the filing, thus requiring the applicant to complete the filing before the regulatory agency will consider it.

Filing requirements are important in order to assure that filings can be processed efficiently and completely. If a proceeding can commence with an inadequate or incomplete filing, much time may be lost while the regulatory staff, the applicant and any other participants argue back and forth as to what additional information is necessary.

The agency may also wish to require that certain types of applications contain estimates of their impact on items of major concern, such as rates, competition or the environment.

Rules for dispute resolution. Rules providing guidance as to consumer rights, resolution of disputes between customers and utilities and disputes among market participants are an important source of guidance. The clearer such rules are at the outset, the less time the Commission will actually have to spend on such disputes.

Periodic reporting. Accurate information provided on a regular and timely basis is the lifeblood of the regulatory process. From its earliest days, the regulatory agency will need a uniform system of accounts, with variations applicable to the different types of entities that it regulates. Such records should be kept in accordance with internationally accepted accounting standards (or equivalent or higher domestic standards if these exist).

The filing of this information should be under the signature of the highest financial officer of the regulated entity, accompanied by a statement attesting to its accuracy and acknowledging the penalties for a knowingly incorrect filing.

Ethics rules. The ERC can establish a clear code of ethics that will build confidence in the regulatory agency and assure that employees have clear guidance on acceptable behavior. This code will help avoid conflicts that could bias the fairness of regulatory decision-making or undermine public confidence in the regulators or the regulatory process. The critical components of such a code include:

- Prohibition against any financial ownership or interest in any entity with an interest in regulatory agency decisions;
- Prohibition of any outside employment by regulators;
- Prohibition against accepting gifts of any sort from anyone with an interest in regulatory decisions;
- Prohibition against political influence or interference;
- Avoidance of all types of bias or prejudice.

The organizational structure of a regulatory commission should follow from a clear understanding of the agency mission. In the structure that is recommended here, the Commission's mission includes the implementing of national regulatory and competition policies and the deciding of specific cases. The regulators (referred to here as "commissioners") therefore function in the mode of a board of directors – detached from the day-to-day management of the agency and with limited responsibility.

A-5. COMMISSION’S ORGANIZATIONAL STRUCTURE

The organizational structure of a regulatory commission should follow from a clear understanding of the agency’s mission. In the structure that is recommended here, the Commission’s mission includes the implementing of national regulatory and competition policies and the deciding of specific cases. The regulators (referred to here as “commissioners”) therefore function in the mode of a board of directors-detached from the day-today management of the agency and with limited responsibility for personnel matters. The commissioners, however, need full access to the agency staff and need to be kept fully and currently informed of all matters within the Commission’s responsibility.

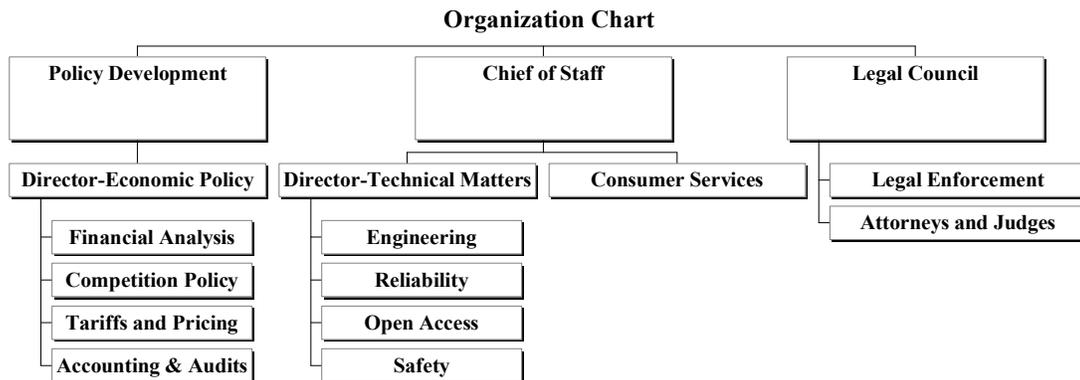
Of course, no organizational structure can compensate for the appointment of commissioners who cannot work competently and professionally together to further the interests of the public. Regulatory history contains many examples in which commissioners who were poorly chosen and who put personal interests ahead of wise and collegial regulation have nullified viable organizational structures.

A-5.1 A suggested organizational structure

This section suggests an organizational structure in some detail. The number or exact titles of positions are less important than the overall structure and the organizational principles. In this recommended structure. The Commission has three basic levels: the commissioners, the Chief of Staff (or Executive Director), and various divisions. A summary organizational chart is shown below.

A-5.2 Commissioners

Multi-member regulatory commissions are generally preferred to a regulatory agency headed by a single individual for several reasons. First, they allow diversity of viewpoints, which leads to wiser decisions on complex issues. They enable greater stability, since replacing a single commissioner will not bring about a complete change in regulatory policy. Finally, there is less likelihood of corruption or other improper influences controlling commission decisions.



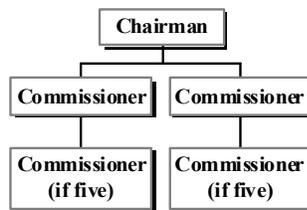
Regulatory commissions typically consist of three or five members. Larger commissions have generally proven too difficult to administer in return for any benefit from additional diversity of viewpoints. Also, commissioners on larger Commissions may consider themselves to be representatives of particular constituencies rather than the public as a whole.

Most national regulatory commissions in the U.S. consist of five commissioners, but many of the state commissions have three. International experience is mixed. Individuals rather than commissions head British regulatory agencies, but this is unusual. The head of state almost everywhere chooses commissioners, often with confirmation by the legislative body. A few jurisdictions use some form of nominating or screening panels to assure that the candidates are well qualified and not nominated solely for political reasons.

Chairman. The Chairman should be a person with significant experience in government and the energy sector. The Chairman is the official representative and spokesperson of the Commission, and will ordinarily be the presiding commissioner at all meetings, hearings or other official occasions. The Chairman designates a deputy chairman from among the other commissioners to preside when the Chairman is unavailable.

Number and selection of commissioners. The Commission should have either three or five voting commissioners. Commissioners are typically selected by the executive branch of government or through a parliamentary process. Each commissioner must devote full time to the Commission’s responsibilities and may hold no other position or employment. No commissioner may be employed directly or indirectly by any utility or other person or entity regulated by or interested in the

Organization Structure of a Commission



Under the recommended structure, the Commission could have three or five well- qualified voting commissioners, including a Chairman who serves as the agency’s chief executive officer and who presides at commission meetings. Together, the commissioners should have demonstrated familiarity with the economic, technical and legal backgrounds involved in energy regulation plus demonstrated commitment to resolving complex energy and environmental matters.

Each commissioner has one vote to decide all matters coming before the commission. The Commission shall have the power to hire and remove the Chief of Staff, and the Commission must be consulted on all major administrative and personnel matters. The organizational structure is shown above.

regulation of the commission for a period of two years after the end of his or her term of office.

Term of office. Except for the first persons to serve as commissioners, each commissioner serves for a term of five or six years and the terms of each of the five commissioners shall be staggered so that no more than one commissioner’s term ends in any year. A term of office shall commence on January 1 and ends on December 31 of the fifth year following the commencement of the term. A commissioner may be reappointed one time to serve as commissioner. In the event of a premature vacancy in a commission position, a qualified replacement shall be appointed to serve remainder of the unexpired term. At the end of the unexpired term, the commissioner may be reappointed

or a new commissioner may be appointed.

The Chief of Staff is responsible to the Chairman (and ultimately to the Commission) for the administration of the ERC. This responsibility can also include coordination of the paper flow so that all staff analyses and recommendations to the Commission (except those from the Policy Development and Legal Counsel offices) flow through the Chief of Staff's office to assure the input from all necessary officials as well as timely completion and efficient distribution of the agency workload.

A-5.3 Independence

Overview. A fundamental principle of fair and just regulation is that the regulator be independent from political influences as well as from the entities that it regulates. Of course, no regulatory commission can be completely independent of the rest of the government. Fundamental national policy issues are involved in the energy sector, and legitimate ways must exist for these issues to be communicated to the Commission and to be reflected in its decisions. At the same time, however, the Commission's ability to preserve confidence that energy tariff and licensing decisions are not being made on a political basis depends heavily on the regulators being able to make decisions on the merits of the matters before them and not on the basis of private communications from other government agencies or from other parties. This separation is generally assured in several ways. First, the regulators themselves are expected to have no personal, familial, or financial ties to the regulated industries. Second, the regulatory commission is expected to have no dependence, financial or otherwise, on the regulated industries or on the government that can be used to influence Commission decisions. Third, regulatory decisions should be fully explained in writing so that anyone can ascertain the basis for the decision. Fourth, private communications about factual issues being disputed in regulatory commission proceedings should be avoided.

The Commission should adopt such internal procedures and personnel policies as are necessary to assure that proper distance is maintained from the regulated

industries. These are set forth in the discussion above on the Code of Ethics. A substantial violation of the code should be grounds for dismissal.

The Commission should have a physical location of its own, where the regulator is not dependent on the utility or a government ministry for favorable pricing of office space, power, communications, security, or any other common features of a shared premise.

The Commission budget should not depend on funding from a utility that is in any manner within the control of the Commission. The funding of regulatory commissions in most countries is based on an assessment (set by the government) of the regulated industries calculated to raise the necessary amount for the Commission. The industries have no choice as to whether to pay their assessed amount, which is normally a small percentage of their total revenues. The government often approves the overall budget and the setting of the salaries, but this approval does not depend on the decisions made by the regulator. The salary levels are set high enough to attract capable people with the necessary skills and good judgment.

Funding. Adequate funding and support may include hiring expenses, including advertisements placed internationally; salary of executive management; office space; early training; the ability to hire consulting and auditing assistance as needed; travel within the country and abroad; limited clerical and office support and the purchase of limited office supplies and equipment.