ELECTRICITY REGULATION IN IRAQ – ISSUES AND OPTIONS

USAID | Iraq Economic Governance II

PREPARED FOR:

Electricity Regulatory Subcommittee and Steering Committee, Ministry of Electricity, Iraq

Date: 23 May 2005

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The Author acknowledges the valuable advice given in respect of certain sections of this paper by his colleagues at BearingPoint, Richard Kupisz, Robert Graniere and Robert Krause.

CONTENTS

1. EXECUTIVE SUMMARY

1.1 Introduction

This paper discusses the main issues involved in, and options for, establishing a legislative and regulatory regime for the Iraqi electricity sector, including establishing a regulatory agency (named, for the purposes of this paper, the Iraq Electricity Commission).

1.2 Executive Summary

Section 2 of the paper discusses briefly the present state of the Iraqi electricity sector and BearingPoint's previous work with the Iraqi Ministry of Electricity for the US Agency for International Development.

Fundamental legislative and regulatory objectives for Iraq's electricity sector reforms are then discussed in section 3, which includes the policy statement prepared in consultation with the Ministry of Electricity. This policy statement must be agreed with the new transitional Iraqi Government now in place, and more detailed statements covering key areas developed with the new Minister of Electricity.

Section 4 covers the distinction between primary legislation (an Electricity Law) and secondary legislation (regulations and rules) and their application to Iraq. Iraq presently has a collection of ad hoc laws, resolutions, declarations, instructions and bylaws that, in general, tend to focus on administrative and organizational matters relating to, and powers of, institutions responsible for electricity and successive newly created "project" companies. BearingPoint proposes that the Iraqi Legislature pass a new Electricity Law that provides a framework for the future structure, operation and regulation of the sector. Such a Law would also establish the Iraq Electricity Commission, which would be given power to promulgate regulations. The precise boundaries for this power and method by which it is exercised need to be established.

Section 5 covers in more detail the matters that the Electricity Law would deal with and section 6 covers in more detail the matters regulations would deal with.

Section 5 covers the establishment of the future structure of the electricity sector and the respective roles of the Iraq Electricity Commission and Ministry of Electricity, with a focus on different options for tariff regulation, the legislative establishment of a licensing regime and the different possible methods for resolving disputes (and the enforcement issues that need to be resolved by an Electricity Law).

Section 6 discusses possible models for establishing a wholesale electricity market or exchange, the regulatory aspects of licenses, establishment of technical operating criteria (notably a Grid Code and Distribution Codes), quality of service and health and safety.

Section 7 covers aspects relating to an Iraq Electricity Commission, in particular the division of responsibilities between the Ministry and Commission, including a discussion of the difference between guidance and instructions, the need for a regulator to be free of political or commercial pressures, and a discussion of independence and how it is established.

Section 8 looks at wider issues of relevance to BearingPoint's work with the Ministry of Electricity and wider Middle East issues. Most important is the need, firstly, to ensure the full participation of senior personnel in the decision-making process and, secondly, to educate

Ministry employees about the benefits of reforms and to persuade them to participate fully in their implementation. Section 8 also lists those areas of simultaneous reform in Iraq that are of particular relevance to objectives for the electricity sector. These are:

- ensuring an understanding of the building blocks that need to be established before private sector investment will be attracted;
- inter-Ministerial cooperation, especially coordination with the Ministry of Oil;
- competition law principles – essentially, the monitoring and regulation of commercial behaviour to ensure see there are no barriers to effective competition in market sectors and to ensure that firms do not act in an anti-competitive manner;
- dispute resolution procedures, both generally and acceptable to foreign investors;
- consideration of the need for an umbrella regulatory authority to oversee and review decisions of the IEC and possibly other newly created Regulators in Iraq;
- rules and regulations in other areas – taxation, environmental law, company law, banking, capital markets and securities laws, and administrative law – that together create an environment attractive to foreign investors.

A summary of all the laws, orders and commands that presently relate to electricity in Iraq is included.

Lastly, a detailed report of the status of reforms in other countries in the Middle East region is attached.

2. BACKGROUND

2.1 US AID Projects

BearingPoint began working with the Iraqi Ministry of Electricity (MoE) late in 2003. Significant work in the Iraqi electricity sector was performed up until June 2004 implementing the Economic Recovery, Reform and Sustained Growth Project for US AID. BearingPoint's work initially focused on capacity building and institutional strengthening within the MoE more than on legislative and regulatory reform:

- on sector organization, principally, the preparation of a detailed Master Plan and expansion plan and the development of unbundling and restructuring strategy; and
- on operational matters, involving finance, training, billing and metering, tariffs and planning areas.

Later, the focus shifted towards establishing a new Commission to regulate Iraq's electricity sector. Work under this first project ceased in June 2004.

US AID then selected BearingPoint to undertake the Iraq Economic Governance II Project, based on our substantive track record of success under the first project and in other countries in similarly difficult circumstances as exist in Iraq. This work began in October 2004 and is continuing in challenging circumstances.

2.2 Legislation and Regulation

Under the first Economic Recovery and Reform Project steps made by BearingPoint towards the creation of an Electricity Regulatory Commission comprised:

- drafting an Electricity Regulatory Commission Order, proposed to the CPA in May 2004;
- preparing an organization structure and budget;
- drafting ERC procedural rules;
- providing to the MoE training on electricity regulation and regulatory principles.

Work was also performed on drafting primary legislation (a possible Reform Bill) and secondary legislation (regulations covering transmission quality standards) and a cost-of-service tariff study was carried out. The Coalition Provisional Authority did not approve and pass the Electricity Regulatory Commission Order before handing over authority to the Iraqi Interim Government on June 28, 2004. Neither did the Interim Government pass a law for the electricity sector.

No single piece of legislation or regulations in Iraq deal in detail with the issues, or the roles and responsibilities, involved in ownership and operation of a national electricity industry. A 1974 Revolutionary Council law, several later laws and Command Orders which reorganized Iraq's electricity infrastructure, some "Instructions" for conditions of power supply in 1999, and numerous bylaws establishing different electricity sector companies make up Iraq's legislation and regulations (see attached schedule).

From the legal perspective, legislation and regulations should both:

- provide a framework for the successful attainment of key policy objectives for the electricity sector (most importantly in respect of security of supply, price of electricity, regulation of the sector and encouragement of private investment) and for the wider Iraqi economy; and
- ascribe rights, duties and powers to the participants and electricity users within each segment of the industry.

In this way, the contribution of the energy sector to the efforts of the Government in promoting economic growth and alleviating poverty will be enhanced. It is also consistent with emerging and developing energy strategies of most other countries in the Middle East and North Africa region. Iraq has an opportunity to build on the experiences of its MENA neighbors.

2.3 Policy for the Electricity Sector

The development of definitive Government policies for Iraq's electricity sector is critical. With clear policy guidance, framework legislation and detailed regulations can more effectively be developed. This is the role of the Regulation Subcommittee established by BearingPoint and the MoE.

Section 3.1 discusses the development of a policy statement for the sector.

2.4 Physical Infrastructure and Operational Issues

The Master Plan prepared by BearingPoint identified many significant infrastructural and operational problems in the Iraqi electricity sector. Detailed recommendations were developed covering generation, including the location of new power plant and the preferred fuel supply, transmission and distribution to overcome these problems, which were identified as:

- daily rotating power outages throughout the country;
- outdated, poorly maintained, and poorly operating equipment as a result of wars, sanctions, and lack of funds;
- inefficient generation, transmission, distribution, and control systems;
- lack of investment in all parts of the sector;
- some communities not served by the grid; and
- fuel use is suboptimal.

The Master Plan also found that no "formal statements of high-level Government objectives and policies for the Iraqi electricity sector" exist, and that many institutional issues compound the physical and technical problems. These institutional and legal issues were beyond the scope of the Master Plan, which concluded that, "the lack of a policy, legal, or regulatory framework for oversight of the electricity sector impedes introduction of private investment and competition".

In our work developing legislation and regulations for Iraq we must not lose sight of the recommendations, nor the national objectives, developed for Iraq for the purposes of the Master Plan, because – assuming regulatory reform is not pursued solely for its own ends – such objectives provide the underlying rationale for developing regulations. These objectives are:

- in the short term, supply current demand;
- in the longer term, meet the demand for reliable electricity at the lowest possible cost;

- rehabilitate and maintain the existing physical infrastructure;
- improve the efficiency of generation, transmission, distribution, and control systems;
- expand the transmission and distribution grids to supply a larger fraction of the national population; and
- expand the use of natural gas and reduce the use of crude oil by capturing flared gas and developing existing gas fields.

2.5 Present Situation

BearingPoint's understanding of the status of Iraq's electricity sector is, in summary, as follows:

- the MoE was established as a Ministry separate from the Ministry of Trade and Development in August 2003. The Minister until early May 2005, Dr Ayham Alsammarae, was also appointed in August 2003;
- a new restructuring was initiated in September 2003, which involved: reorganization of the distribution companies from 4 into 7 units; unbundling the generation and transmission units from the production companies; splitting the generation units from 3 into 7 and splitting the transmission units from 3 into 6;
- an Executive Working Group was established to oversee unbundling and separation in January 2004 and various Subcommittees were established and met in the period to June 2004;
- organizational structures and staffing plans were developed, and training was provided in operational areas;
- the present Steering Committee and Subcommittees dealing with restructuring and capacity building, finance, legislation and regulation, privatization and metering were established in December 2004 and are continuing to meet regularly;
- a Capacity Building Workshop over 4 days and covering all the work areas of the Subcommittees was conducted for 14 senior members of the Iraqi MoE in Amman in February-March, 2005.

3. OBJECTIVES FOR IRAQI ELECTRICITY SECTOR

This section looks at the key legislative and regulatory objectives for Iraq's electricity sector, which have been discussed with the MoE Steering Committee and Regulatory Subcommittee.

3.1 Policy of Iraqi Government

The suggested first step was to reach consensus on the MoE's objectives and formulate a policy statement for the electricity sector. Such a statement can then be published – thus establishing the Government's commitment to reforms and providing fundamental guiding principles that would assist drafting the Law reforming Iraq's electricity sector.

A. Policy Statement for Iraq's Electricity Sector

A policy statement was discussed at the Capacity Building Workshop conducted by BearingPoint in Amman and then finalized afterwards. The resulting statement appears below.

Policy Statement for Iraq's Electricity Sector

The Government of Iraq is committed to ensuring that policy for the electricity sector is pursued and decisions reached that are best designed to achieve the following objectives:

The provision of reliable electricity supply throughout Iraq at minimum appropriate cost by:

- *Improving the management, efficiency and performance of the electricity sector by enhancing institutional and operational capabilities;*
- *Establishing a market structure for the electricity sector that encourages the introduction (to the extent feasible in the prevailing political, economic and social environments) of competitive forces in generation and supply, thereby laying the groundwork for private sector participation in the sector;*
- *Creating an independent regulatory body with responsibility for implementing policy for the electricity sector in a fair, open and transparent manner;*
- *Fair, balanced, transparent, and reasonable regulation of those parts of the sector not suited to competition and those parts where regulation is required to achieve policy objectives;*
- *Implementation by the Regulator of clear and transparent tariff regulation that encourages efficient operation of the electricity sector while balancing the interests of consumers against the need to ensure the financial viability of the sector;*
- *Encouraging and attracting private investment to the sector in order to establish, one, sufficient generation to meet demands of users and, two, reliable and safe delivery to users;*
- *Ensuring access to electricity for all consumers in Iraq, including through transparent application of subsidies if necessary.*

Other relevant considerations, which have been discussed with the MoE, are –

- *the achievement of standards of quality in electricity service that help develop a sense of obligation on the part of consumers;*
- *prices paid by users that are sufficient to finance licensees' regulated activities and allow licensees the opportunity to recover the costs of and earn a reasonable return on their investment in electricity businesses;*
- *compliance with applicable environment protection standards and public safety conditions enforced in Iraq.*

Now that the transitional Iraqi Government is formed, it is suggested that a second part to the policy statement be developed. This part would comprise succinct but more detailed statements on each key area where policy decisions have been made or options are still being explored.

3.2 Electricity Law Objectives

BearingPoint proposes that the Iraqi Legislature pass an Electricity Law (Law) for Iraq. Significant work on drafting this Law has already been performed, and a draft was presented to the MoE on May 9, 2005. BearingPoint proposes that the Law establish:

- the future structure and operation of the electricity sector;
- an independent Iraq Electricity Commission (IEC), to which will be granted powers necessary for it to be "stood up" and to commence work;
- the respective roles and powers of the MoE, the IEC and the operating utilities, including any new organizations (such as a wholesale market exchange operator or single buyer) that may be required to implement the new structure;
- the tariff regulation principles, and any subsidy policy to be implemented by the IEC. We will likely need to work with the Ministry of Finance and Ministry of Oil regarding subsidy issues;
- the Regulator's power to regulate the different segments of the electricity sector: generation, wholesale exchange, transmission, distribution/supply;
- the foundation for wholesale electricity prices to be set and the conditions to encourage the introduction of competing generators to be created;
- the initial license holders and key terms of their licenses, and the authority of the IEC to develop a licensing regime;
- methods and procedures for resolving disputes.

A discussion of these objectives, and the different options in respect of them is in section 5.

3.3 Electricity Regulation Objectives

Broadly, the IEC's role under an Electricity Law would be to ensure access to reliable and affordable supplies of electricity for all consumers through a viable and efficient electricity sector, by regulating tariffs, influencing and controlling the behavior of electricity sector participants, overseeing the quality of consumer services and developing a wholesale electricity market or exchange. Specific powers to regulate the following areas will be given to a Regulator:

- tariffs covering transmission and distribution/supply, and subsidy implementation, in accordance with the principles established under the Law;

- licensing system – the grant of rights, accompanied by corresponding obligations, to utility operators. Licenses would cover generation, wholesale exchange, transmission, distribution and supply (which likely will remain with distribution in the foreseeable future). Through such a system, the IEC can ensure certain rights contained in the Law apply to licensees. And (in tandem with technical codes to also be developed) the IEC is able to monitor and review performance, control market entry and ensure third party access to transmission;
- overseeing the establishment of, and then enforcing, technical criteria establishing operating and maintenance standards for the transmission grid and distribution networks, through codes;
- access to electricity delivery by generators (or a single buyer) – key will be independent decisions on new entrants in the generation sector and the transmission access arrangements, including pricing, for electric capacity and energy;
- quality of service in respect of commercial issues of customer care – service obligations contained in charters to be developed by distribution and supply relating to such matters as new connection and account transfer requests, rights of disconnection, metering, billing and collections, and fault repair;
- dispute resolution between consumers and operators and, at first instance, between different electricity companies;
- approval of the contracts to be signed amongst the network utilities, transmission companies, generators and single buyer covering their respective rights and obligations;
- future generation competition and the development of a wholesale exchange or market, including the wholesale contracts entered into by the generators;
- the possible future development of retail supply competition; and
- health and safety relating to electrical installations and equipment and those who work on them.

The role of regulations in respect of these areas is discussed in section 6.

4. ROLE OF LAW AND REGULATIONS

4.1 Primary and Secondary Legislation Distinguished

Primary legislation is an Act or Law passed by the Legislature; secondary (also called subordinate or delegated) legislation is regulations, rules or orders that are specifically authorized by the primary legislation, but passed by specially appointed and authorized committees and other bodies (in this case the Regulator) who have expertise in the subject.

Typically, where secondary legislation is used, the primary legislation (the Law) sets out a broad framework of the subject, and the finer detail of its operation is set out in secondary legislation, such as regulations. Regulations "flesh out" the Law and policy. They are a means by which experts in the subject covered by a Law can formulate authoritative measures, thereby enabling practical application of the parent Law more speedily – without the need for the Legislature itself to consider detailed technical matters. Regulation can also be seen as the explicit Governmental intervention into a market to achieve a public policy objective that the market fails to accomplish on its own.

Significant changes are proposed for Iraq's electricity sector. These changes will, of necessity, be gradual. Rather than have the Legislature frequently occupied with electricity sector issues, the grant of regulation-making authority to the IEC would enable an expert body to handle much of it. This promotes flexibility and allows the regulatory framework to evolve along with the development of the sector.

A. Statutory Force

Secondary legislation takes effect and has authority as if it were part of the enabling (parent) Law – so it has statutory force. Secondary legislation that goes beyond (is ultra vires) the parent or enabling Law is open to challenge through the courts of justice under administrative law principles.

B. Methods of Making and Types of Secondary Legislation

Both the consultative process to be adopted and the precise method for passing secondary legislation will be enshrined in the parent Law. Wide and thorough consultation with all concerned parties will be required before regulations are finalized. The precise consultative process and regulation-making authority given to the IEC must be determined; whether regulations must first be approved by the Iraqi Legislature before they become effective is a key issue that needs to be explored and decided upon.

The 3 most common methods of passing secondary legislation are:

- "affirmative resolution": requires the final draft of the regulation to be first approved by the Legislature;
- "negative resolution": the regulation is subject to annulment by the Legislature after it has been made; or
- simply requiring the regulation to be laid before the Legislature after it has been made.

Generally, the following are the main types of secondary legislation:

- "regulation": an instrument by which the parent law is exercised;
- "rule": an instrument by which power to make law of procedure is exercised (such as rules by which the IEC would operate);

- "order": an instrument of the exercise of executive power, such as the Regulator ordering an electricity utility to perform or desist from performing some action.

BearingPoint recommends that, so long as precise requirements for regulation-making are set out in the Law, the IEC should have power to promulgate regulations without requiring the prior approval of the Legislature. BearingPoint also proposes that if there are delays in the Law being finalised or passed by the Legislature, and it is decided that regulations must be approved by the Legislature, key initial regulations be finalised contemporaneously with the Electricity Law and proposed for passage through the Legislature at the same time.

4.2 Application to Iraqi Electricity Sector

A. Present Iraqi Laws and Regulations

At present Iraq has, we understand, a collection of laws, commands, orders, instructions and bylaws under which its electricity sector is organized and functions. Obtaining copies of the Iraqi laws and regulations and having them translated has taken time, but it can be observed that:

- there is no single framework legislation covering the matters envisaged in this paper;
- the enactment of existing legislation and regulation has been ad hoc in nature and piecemeal in the areas it covers (not unlike the experience of other countries); and
- present laws and regulations focus more on establishing and granting powers to various entities or project companies, and setting out their structure and organization, rather than implement detailed electricity sector policy.

B. Primary Legislation

Physical infrastructure and security issues remain paramount; dependable electricity supply for all Iraqi citizens is an essential social and economic service. The recommendations and national objectives developed for BearingPoint's Master Plan for Iraq's electricity sector are designed to remedy these issues. Success in the longer term will not be achieved unless the policy developed by the MoE is captured in law (for implementation by the IEC). The Electricity Law that is proposed be passed by the Iraqi Legislature would provide an "umbrella" or framework for the future structure, operation and regulation of the Iraqi electricity sector. Most importantly, it would establish the Iraq Electricity Commission and grant it powers to promulgate secondary legislation.

Primary legislation is required to establish an independent regulatory body operating with wide powers; it is the only effective means of establishing the IEC (and delineating the authority of the IEC in its future work).

Without that legislative authority, independent regulation of the sector cannot occur. And, so long as the infrastructure remains in Government ownership, a clear path towards achieving future private sector involvement must also be set if the goal of encouraging investment in the sector is to be reached.

But the Law would also enshrine fundamental electricity sector policy and establish specific underlying principles and parameters. Clear ownership and governance powers and the accompanying rights and obligations would also be defined.

Even without a Regulator, difficult decisions will need to be made in restructuring Iraq's electricity sector; it is unlikely these decisions will be made unless they are mandated by statute. A Law, once passed by the Legislature, requires political will and agreement to change. So, while primary legislation is less flexible than regulations, it cements in place certain fundamental matters.

Section 5 discusses the areas that we propose an Electricity Law should cover.

C. Secondary Legislation

Regulations, rules and orders that implement the Law would be prepared and promulgated by the IEC through a process of focussed consultation, thereby utilising greater expertise and efficiency in electricity matters than is available to the Legislature.

But the structural changes required in Iraq's electricity sector would not occur without the leadership and drive to push through the legal reforms described in this paper.

Pushing through many reforms is the Regulator's – the IEC's – key role. The establishment of the IEC also ensures separation of policy *making* from policy *implementation*, which reduces the potential for conflicts of interest.

One method of ensuring the introduction of more commercial, focused disciplines to participants in the sector, and of enabling competition to develop where appropriate (thus encouraging performance improvements and cost reductions) is to unbundle and separate generation, transmission and distribution/supply, or at least generation from delivery (transmission/distribution). Participants in the sector are forced to focus on their particular roles, first, in rectifying infrastructure issues, but in the longer term, in attaining appropriate performance standards.

An independent IEC can focus on the financial state and the technical performance capabilities of the transmission companies, distribution companies (where separated) and other sector participants. The development of a grid code, distribution code and contracts between participants in the sector will establish technical and commercial obligations and rights that can be enforced. Performance standards, including customer codes, against which participants can be measured, will be developed and enforced by the IEC. All of these regulatory reforms arm the Regulator with the power to exert influence on – and change – utility behavior. They have as their ultimate design improvements in reliability and quality of electricity services, and safety of workers.

Without these improvements, and without clear legal and technical obligations and transparent accounting rules, an environment that encourages construction of new generating plant and the design and implementation of some form of competitive market for electricity will not be created – and private finance will not be attracted to the electricity sector. Neither will it be attracted without transparency in tariff setting (whatever design is decided upon) and certainty in tariff application.

Section 6 discusses different regulatory options.

5 PRIMARY LEGISLATION - ELECTRICITY LAW

The Electricity Law would, it is proposed, cover the areas in this section.

5.1 Establishment of Structure and Future Operation of Electricity Sector

Restructuring electricity sectors has invariably involved reducing the degree of vertical integration of generation, transmission, distribution and supply (retailing). It is the first step to encouraging independent investment in electricity generation and thereby creating competition in wholesale electricity markets (leading on, it is believed, to competition in retail markets, or the supply business). Transmission and distribution have been viewed as natural monopolies and not suited to competition (because, with large sunk costs, it is not economic to duplicate network systems).

Separating the different functions in the electricity sector as a first step also has the following benefits:

- it creates a level playing field for new entrants in the sector – for instance, stopping discriminatory behavior by a monopoly transmission business in favor of its generation business and preventing cross-subsidies to the competitive generation business. It thus helps attract private long-term financing for power plant construction;
- combined with the design of a future wholesale market which encourages competitively priced generation, the creation of competition (rather than reliance on regulation) should act to minimize generation costs;
- the encouragement of distributed generation, because investors who wish to construct new generating plant nearer demand centers are able to secure connection and transmission rights.

Different models for Iraq are being discussed with the MoE. The future shape of Iraq's electricity sector is a complex question involving many issues to be decided. This paper assumes that the benefits and desirability of unbundling and then functionally, and possibly legally, separating some or all of generation, transmission and distribution/supply into distinct commercial enterprises are accepted.

The Electricity Law will establish the structure of the electricity sector within Iraq and the participants within each area, including initial licensees, and describe each of their respective principal rights and obligations.

We are comfortable with questioning the natural monopoly theory in relation to transmission and distribution in Iraq, particularly because of the significant network infrastructure issues facing the sector, but also because technological and market innovations have reduced the natural monopoly rationale for traditional electricity regulation. Following recent transmission failures experienced in countries that have deregulated generation and retail markets but continue to heavily regulate transmission and distribution (such as in the northeastern US in 2003), the natural monopoly theory has been re-visited. There is much debate about allowing more flexible consumer and supplier use of new technologies that provide substitutes for long-distance transmission. Such substitutes would create competition and at the same time help achieve economic efficiency in transmission, without running the risk of over construction.

Distributed generation – the use of an energy source (gas turbines, gas engines, fuel cells, for example) to generate electricity close to where it will be used – and on-site generation are such

technologies. Technological changes in the past decade in the natural gas industry, admittedly reliant on gas delivery systems that do not exist in Iraq, have made distributed generation an economically viable alternative to buying electricity from a monopoly utility and receiving it over the utility's transmission or distribution grid.

There may also be other more innovative options for Iraq, particularly for large industrial and commercial electricity users, such as have been seen in telecommunications with the development of wireless technology and expansion of digital networks enabling customers to opt out of having a "land line" into their homes.

5.2 Establish and Grant Powers to IEC

A key objective of the Electricity Law is the establishment of the IEC, and grant of its powers and duties (see section 7). In addition, principal organizational matters of the IEC would be set out in the Law. These include:

- selection and appointment of the chair and commissioners, their number and terms of office, and reasons allowing dismissal;
- commissioners' specific roles within the IEC;
- secure funding: to preserve its independence IEC funding would, rather than through approval of the Legislature, be established from direct levies or fees charged to license-holders, so that funding is not a political matter. Accountability would be maintained by making the IEC's annual budget subject to legislative approval;
- IEC powers required for successful performance of its roles, such as powers to obtain and verify information and call witnesses and to impose penalties for breaches of primary and secondary legislation.

Other operational and organizational rules would be covered by regulations.

5.3 Establish Roles of MoE and IEC

The Law would establish the respective roles of the MoE and the IEC by proscribing that:

- the main role of the MoE is to devise policy and advise the Government in relation to all matters relating to the electricity industry; whereas
- the role of the IEC is to implement policy in accordance with overriding objectives for the sector, a requirement to consult with electricity sector participants, and specific duties to act fairly, consistently and transparently.

A discussion of the division of responsibilities between the MoE and IEC and the independence of the IEC, is in section 7.

5.4 Tariff Methodology to be Adopted by IEC

The rationale for regulating tariffs is to protect consumers where competitive forces, which otherwise constrain prices, are not present. Transmission and distribution are areas of the electricity sector that are least subject to competition; they comprise infrastructure businesses that own and operate natural monopolies. Without regulation, there is a concern that these businesses could charge consumers excessive prices. In addition, some form of regulation of wholesale electricity prices is necessary, particularly during the transition of Iraq's industry to the new structure, until competition in the generation and wholesale supply of electricity is established.

Arriving at a methodology for regulating transmission and distribution prices that will work best for Iraq is one of the principal roles of the Steering Committee. It is equally important to devise a workable transition strategy for Iraq.

Much work on the development of a cost-of-service tariff was performed under the first Economic Recovery and Reform Project, and this work is continuing now.

A. Rate of Return v. Price Cap Regulation

The two main approaches to regulating tariffs, in very broad terms, are:

- rate of return regulation (favored by the US, Canada and Japan): the Regulator fixes the rate of return a utility can earn on its allowable assets (ie. those assets used for the regulated part of the utility's business). This is achieved by setting the prices it can charge customers (at the level which will enable it to earn the set rate of return); and
- price cap regulation (developed to remedy perceived limitations of rate of return regulation, and favored by the UK and also by developing countries): the Regulator sets and adjusts each year the pricing formula (by for example the rate of inflation plus or minus a predetermined amount) by which a utility is to adjust its prices, without regard to the utility's profits.

Recent thinking has generally favored price cap regulation (often referred to as performance-based regulation) as the optimal rule for regulating monopoly prices, over rate of return regulation. The main rationale for this is that price cap regulation creates more efficiency because it provides a utility with the incentive to actively seek cost-reducing measures. This is because the cap is set irrespective of changes in costs of providing the service; in contrast, rate of return regulation requires costs to reflect prices charged. Rate of return regulation (a very common form of cost-based or cost-of-service regulation) has in recent times come to be viewed as less efficient, because it:

- involves significant bureaucratic cost and may lead to utilities engaging in behavior designed to influence the Regulator;
- removes incentives to minimize costs;
- removes incentives to innovate and introduce new technologies;
- can lead to inefficient capital investment decisions (by encouraging large-scale capital intensive projects).

Against these arguments however, rate of return regulation can be said to:

- enable wider public participation in utility investment and price-setting;
- result in the Regulator having a more detailed understanding of costs and their allocation within the electricity sector;
- lessen the risk, inherent with price cap regulation and its incentives to minimize costs, of a lowering of supply quality;
- be better suited than price cap regulation, to an industry (as in Iraq) that requires significant increases in prices.

B. Approach for Iraq

Whichever tariff regulatory method may be implemented, first steps require the identification and production of data establishing the costs involved in providing electricity services, classifying such costs (demand, energy and customer-related), and

then allocating them between customer classes. Difficulties in achieving this with the present situation in Iraq are being overcome. In the UK difficulties were encountered in establishing the base to be used to establish initial prices at the outset of electricity reforms.

It is also relevant to raise the question whether price regulation itself is really necessary (high prices are unlikely to occur in the present environment in Iraq). A possible alternative approach to price regulation is to leave price setting to the utilities, coupled with the threat of strong regulatory intervention if prices are excessive. Only one developed country has adopted this approach – New Zealand (in both electricity and telecommunications) – although there some form of price regulation was later adopted.

It is also conceivable that transmission and distribution in Iraq, faced with likely high demand growth and significant rehabilitation or replacement requirements, could become competitive businesses, unlike in developed countries that have reformed their electricity sectors, where such growth rates are small and delivery systems function efficiently.

Earlier tariff regulation in other countries, whichever form is adopted, has sometimes been unsuccessful where governments and regulators have been reluctant to implement the tariff increases required to achieve rates sufficient to attract private investment (eg. Brazil and India). The most recent successful experiences in countries that both are instituting regulation for the first time and have a tradition of low electricity tariffs (particularly in Chile and Peru) that do not cover costs of service show that:

- first, ideally the tariff-setting methodology be pre-determined and clearly defined in the Law (with specific formulae and target parameters), so that the Regulator has limited discretion and risks of revenue uncertainty are minimized; and
- second, the Regulator be given complete autonomy (independence from political and commercial pressures) in performing tariff calculations.

BearingPoint suggests that this approach be considered for adoption in Iraq, at least initially. The Government's commitment to tariff reform once agreed, and certainty in its administration, need to be enshrined at the level of primary legislation. As mentioned earlier, this provides certainty and helps ensure transparency. Because the formulae and parameters are enshrined in the Law, the IEC would have little room for flexibility, and therefore be less likely to be subject to pressure that might exist if the Regulator had power to set key factors comprising the tariff. Thus, the Regulator's role would be to ensure that utilities comply with the prescribed tariff plan, as well as the collation and review of all required information.

This quite rigid approach admittedly does result in the Regulator losing a degree of flexibility. And flexibility – the Regulator having the capability to respond to changing circumstances – is likely to be much needed initially in Iraq.

However, there are risks in moving to a Regulator that is given greater autonomy to set either methodology or tariffs under a Law that provides only general principles as guidance:

- first, such a system requires well-developed legal precedent, particularly in administrative law, and judicial processes (which, in the regulatory sense, do not exist in Iraq);

- second, because conditions are so difficult, with broadly specified principles there is more scope for utilities to manipulate figures;
- third, foreign investors will be difficult to attract.

Whichever regulatory model is settled on, a balance between these competing elements will need to be reached.

C. Subsidies

Just as importantly, the policy regarding subsidies and their funding must be developed and agreed. Subsidies can exist at different sector levels (eg. generation, supply), and subsidies can vary widely in their form:

- cross subsidies between classes of user or between different sectors;
- direct Government subsidies to certain sections of society;
- indirect subsidies, such as allowing persistent losses by Government owned operators or providing fuel for generation at less than market price; or
- "special" or ad hoc tariffs.

Present issues relating to subsidies need to be resolved, particularly those presently surrounding the supply of oil for generation. Where there is a need for subsidies, that must be agreed and accepted, and then the subsidies themselves must be transparent: what is the level of subsidy, form of subsidy, period of subsidy, who is eligible to receive it, and what are the provisions for its phase-out? We may need to work with the Ministry of Oil and Ministry of Finance with regard to oil subsidy issues.

Regarding consumers, subsidies should target the most deserving. Other Middle Eastern models may be useful in this regard. For instance, Jordan has a slightly different approach to subsiding poor domestic consumers. While Iraq has different pricing for different consumption levels (a consumer whose consumption reaches a certain level triggers a price band and then pays the same price for all electricity used) in Jordan, for example, the first 50kwh of electricity supplied to domestic consumers is priced much lower than electricity supplied above this level, thus ensuring poorer domestic consumers are more able to afford electricity. In Abu Dhabi tariffs are set below the regulated rate for different customer types.

5.5 Regulation-making Authority of IEC

The power of the IEC to make regulations, and the consultative and legislative process by which regulations are promulgated, would be established in the Electricity Law. Options for consideration are discussed above in section 4.1.

5.6 Initial Wholesale Prices and Introduction of Wholesale Market

For larger economies, wholesale markets for power of varying design have been considered necessary to foster competition. And for power markets to work, the construction of new power plant and their participation in the market is necessary. In addition, constraints on access and distortions in the pricing of access (including cross subsidies) to transmission networks must be eliminated, and transparent pricing of transmission capacity implemented – so as to encourage optimal location and dispatch of generating plants. More recently, independent system operators and market governance have also come to be considered a critical ingredient for long-term success.

As regards Iraq, we must work within the realities of the present situation. If, ultimately, competition in, rather than regulation of, generation is to be relied upon to set wholesale electricity prices, then the introduction of a wholesale market or exchange will be an important objective for Iraq. But much work is required in this area.

In the shorter term for Iraq, initial wholesale prices for generators will need to be set. Assuming a precursor to limited competition is introduced, such as one of the forms of "single-buyer" model or use of bilateral contracts, or assuming new power plant is in future built by private capital under a competitive tendering process, prices contained in long term power sale agreements signed by generators will have fundamental impact. In any event, power sales agreements will need to be reviewed by the Regulator to ensure they comply with the regulatory framework and are compatible with the achievement of objectives for the sector. It may be that, initially, contracts of a certain duration ought to be executed coincident with passing the Law and the IEC given power to oversee them, especially if the single-buyer entity remains Government-owned, in order to ensure terms and prices consistent with overall objectives are achieved.

There is no single blueprint for good market design – the details vary from country to country. However, in designing an electricity market and structure for the Iraq electricity sector, the Steering Committee can learn from both good and bad experiences in countries that have already restructured their electricity sectors. A more detailed discussion of successfully implemented market models in other countries is contained in section 6.2.

5.7 Licensing Regime

The Electricity Law would authorize the IEC to develop licenses and issue them to the utilities and commercial entities performing generation, wholesale market or exchange, transmission and distribution/supply functions. Initially, the Regulator would issue licenses to the existing entities, but would have authority to issue new licenses to new participants that meet published entry requirements.

The fundamental requirement of a license is that the licensee provides the service (eg. to produce and sell power, to deliver or convey electricity over transmission lines, or to wheel electricity over distribution networks) in accordance with the terms of its license. Some obligations to provide services may be defined in geographic terms, such as distribution (obligation to provide service to consumers connected to a distribution network) and some obligations may be defined by service need (such as a new power plant or industrial facility seeking connection to the transmission grid or distribution network).

Through a licensing system, the provision of essential services is controlled and regulated. The application of tariff methodology ensures pricing of monopoly services is regulated and, with technical codes to be developed, a licensee's performance is monitored and reviewed. In this way a regulatory basis for the efficient ongoing control of each sector by the IEC, rather than the MoE, is created.

But, just as importantly, through licensing the Regulator is given the means to effect fundamental changes in the electricity sector. The Regulator is able to implement policy, for instance such as the introduction and development of new market structures and the operation of the market itself, the control of anti-competitive behavior or encouraging behavior designed to prevent practices that hinder market development, and the introduction of certain contracts to be entered into.

These benefits in introducing a licensing system are the counter to the argument that can be made

against introducing such a system – that licenses were developed by governments unwilling to surrender complete control over government owned essential services, and that:

- licenses add another layer of regulatory control that may not in fact achieve anything more than the combination of well-structured and well-implemented laws and regulations; and
- significant economic and commercial requirements involved in providing monopoly utility services are such as to ensure the grant or otherwise of a license will not be determining factor in investment decisions.

The extra layer is the license itself, the application conditions that must be met before a license is granted and service provided, coupled with the annual ongoing compliance requirements.

A. Legislative Certainty

It is suggested that a licensing regime for Iraq be established with a large degree of legislative certainty in terms of the implementation of important policy. It would be wise to enshrine in the Law key terms that must appear in licenses. This would also provide a legal framework for the IEC in developing licenses.

These terms would cover matters such as:

- key criteria that must be satisfied for the IEC to issue a license, such as appropriate financial standing and technical and managerial competence;
- the role and specific duties of licensees in different areas of the electricity sector, for example, in relation to generation, requiring licensees to submit their generating facilities to central dispatch, to offer terms for the provision of ancillary services and to comply with the Transmission Code (see section 6.4);
- the periods for which licenses may be granted and the obligation to pay license fees;
- subjecting the licensee to the IEC's tariff regulation;
- prohibiting licensees from engaging in electricity businesses other than the business for which the license is issued;
- retaining for the IEC a revocation power if the licensee breaches the license terms;
- prohibiting any change in ownership or control of a licensee without the IEC's consent;
- the submission to regular monitoring by the IEC by requiring licensees to prepare and submit to the IEC accounts in respect of licensed activities in such form as the IEC requires, and to supply information required by the Regulator;
- requiring licensees to utilize particular standards in the purchase of goods and services; and
- requiring the licensee to submit to the dispute resolution procedures decided upon for Iraq's electricity sector (see section 5.8).

In addition, the Law could contain the broad framework within which the IEC is to implement competition policy over the sector through the licensing regime – by incorporating specific limitations or requirements on a licensee through its license, decisions on the number of companies in each segment; whether and in what manner companies compete with each other, and ensuring new entrants who meet entry criteria are not excluded.

Section 6.3 contains a discussion of terms included in licenses themselves.

5.8 Method of Resolving Disputes

Disputes can be between electricity sector utilities and generators, between distribution/supply companies and their customers, and between sector companies and the IEC. Essential in any restructuring of Iraq's electricity sector is a transparent, equitable and efficient system for handling disputes and contract interpretation, both by the IEC at first instance and on appeal from IEC decisions. This will become particularly important as foreign companies enter the Iraqi electricity sector.

The method of resolving disputes, the relief available and the mechanism to enforce judgments or decisions all need to be covered in the primary Electricity Law. Regulations would cover procedural rules. BearingPoint recommends that:

- the Electricity Law give the IEC power to resolve disputes between consumers (on one hand) and regulated utilities or supply companies (on the other hand), and that such decisions should not be subject to appeal, except on the grounds of due process failure or on questions of law. The rationale for this is as follows: first and as is the case in most countries, the Regulator is better placed than the Iraqi courts to decide customer disputes because it has expertise in and knowledge of the sector not necessarily possessed by the courts; second, there is benefit in having finality and avoiding protracted litigation in areas that should not clog the court system;
- disputes between sector companies themselves should be resolved by the IEC either with or without rights of appeal. Again, however, appeals as to the application of due process and questions of law should be decided by the courts; and
- disputes between sector companies (on one hand) and the IEC (on the other hand) need to be decided by processes outside, or bodies superior to, the IEC. This is particularly important where foreign investors are concerned

Options to be considered with the Steering Committee include the methods described briefly below (or a combination of them).

A. Iraq's Court System

Judges are unlikely to possess the requisite technical, engineering and financial expertise and knowledge to adjudicate effectively in disputes involving complicated electricity sector issues. In any event, courts in most countries are limited to performing judicial review of regulatory decisions – they do not review the substance of decisions.

B. Arbitration

The use of a non-judicial body that adopts and follows established international arbitration rules and is authorized to make a decision that binds the parties is much favored (and would likely be necessary to use) where foreign investors and infrastructure issues are concerned. Complicated issues relating to the ability to enforce an arbitration award can arise where the arbitration rules used either conflict with local laws or have not been adopted by the country's Legislature.

C. Mediation

The use of various dispute resolution processes, as alternatives to the court system, by experts to assist parties to resolve a dispute has evolved as traditional judicial methods have become slower and costlier. Typically, a resolution reached through mediation is not binding on the parties unless they sign a contract to that effect. But even then, where parties agree to bind themselves enforcement issues may still arise.

D. Expert Panels

Convening a panel of experts who, because of their experience and knowledge, have the ability to understand the issues is used more with infrastructure contracts, where the parties are free to agree procedure and whether or not the decision is binding. However, again, enforcement issues can arise. Additionally, but unlike arbitration, there are no international conventions regarding the local enforcement of decisions.

E. Specialized Appeals Tribunal

This refers to the idea of using a newly created umbrella Regulator that would oversee the work of the various industry regulators and regulatory bodies instituted in Iraq. This last approach is a matter that could usefully be considered in the wider Iraq context, particularly in respect of the development of specific administrative law principles and judicial review issues. If a Competition Commission was to be established in Iraq, such a Commission ought to have the necessary expertise and organization to perform this role; in some countries (for example, New Zealand and some Australian states) have established bodies dedicated to the review of competition issues and essential services regulatory commissions.

Enforcement issues mentioned above in respect of arbitration, mediation and use of an expert panel refer to the lack of effective mechanisms to secure the result of a decision – even where the parties may have agreed that it binds them – where local courts are not involved. Some countries do not accept the exclusion of the jurisdiction of their courts or court processes or recognize decisions reached under foreign or non-judicial arbitral bodies that affect a citizen's right to have rights and liabilities determined by courts to which that citizen is subject.

This is a matter that should be resolved by the Electricity Law; it can do so by including provisions that establish acceptable resolution methods in relation to disputes between electricity companies themselves and involving electricity sector companies and the Regulator.

In considering a process for appealing the Regulator's decisions, several factors must be considered:

- we must not lose sight of the desirability of ensuring the independence of the IEC, and the need to ensure regulatory decisions are insulated from political factors;
- any appeals mechanism needs to guard against the generation of extensive referrals to the courts (or tribunal or appeal authority), which would result in regulation by the judicial system and thus undermine the rationale for an independent Regulator; and
- the mechanism also needs to ensure that regulated utilities and companies do not simply choose to appeal only those decisions of the Regulator they consider detrimental to themselves, where such decisions would benefit, or increase economic efficiency in, the sector as a whole.

6. REGULATORY OPTIONS

Regulations that implement the Electricity Law and designed to achieve the regulatory objectives set out in section 3.3 would also be prepared. This section sets out different options in respect of these areas.

6.1 Tariffs and Pricing of Electricity Services

Arriving at a methodology that will work best for Iraq is a principal role of the Steering Committee. As described in section 5.4, one recommended approach for Iraq is a specific formula-based system with parameters set periodically (perhaps combined with price caps and revenue caps) over a broadly worded system of general principles.

6.2 Future Generation Competition and Development of Wholesale Market

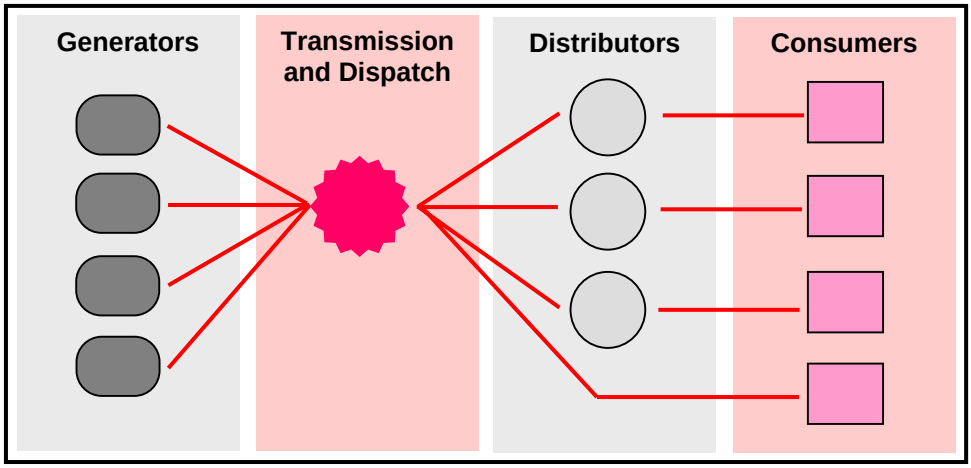
Assuming the development of generation competition and some form of wholesale market (and thus the facilitation of long-term private financing of power plant construction and rehabilitation) are key objectives for Iraq's electricity sector, complex issues require analysis and decision. The overriding issues are, what form of market is best for Iraq to begin with and how long will it be before competition in generation can be introduced?

The two most likely scenarios are:

- introduce a market operator with which all generators contract and which is responsible for on-selling to the distributors/supply companies – the "single buyer" model; or
- introduce a bilateral contracts market comprising long-term power purchase agreements, with a market operator covering just the electricity purchases not covered.

A. Single Buyer Model

The "single-buyer" model (represented below) preserves an artificial monopoly over the wholesale trading of electricity, but it has a number of benefits for developing countries. The benefits and disadvantages of the single-buyer model are discussed in this section.



Single-buyer electricity trading model; red lines represent trading of electricity.

At the outset of electricity sector reforms countries suffering shortfalls in power production capacity authorized private investors to construct IPPs (independent power projects) and sell their output to the national power company, through long-term power purchase agreements. These PPAs often included take-or-pay quotas (these require the purchaser to purchase set amounts of electricity whether or not it actually takes delivery of those amounts) or fixed capacity charges (these are payments designed to cover the capital costs of plant), in order to protect investors from market risks.

Those countries that unbundled their electricity sectors split their national power company into generation, transmission and distribution companies, with the intention of privatizing generation and distribution. Some, mostly later, also split supply (or retail) from distribution, notably New Zealand and the UK. Strategically important transmission and dispatch facilities were retained in Government hands and a single buyer – often the transmission and dispatch company – was licensed, or awarded exclusive rights, to purchase electricity from generators and sell it to distributors. The legal separation of generation from transmission and distribution facilitated competition by allowing equal treatment of IPPs and state-owned power plants: the simplest way to ensure equal treatment is to require all generators to sell their output to a single authorized buyer, ruling out direct (bilateral) contracts with distributors, which may unfairly favor some plants over others.

Ideally, transmission and dispatch should be separated from the single buyer wholesale trading company. However, developing countries have tended to keep these functions together; one advantage in doing so is less complexity, and another is that keeping them together minimizes transaction costs.

B. Advantages

A number of technical, economic, and institutional factors contribute to the popularity of the single-buyer model:

- electricity supply has to match demand second by second, requiring the balancing of differences between the planned and actual output of individual generators and between the planned and actual loads of individual distribution companies. By giving the company responsible for real-time dispatch the exclusive right to buy electricity from generators and sell it to distributors, the single-buyer model greatly facilitates this balancing;
- network electricity flows follow the laws of physics with no regard for contractual arrangements – a major problem for market models with multiple buyers and sellers. The single-buyer model solves this problem without requiring a regime for third-party access to transmission, which can be costly and institutionally demanding to establish;
- the single-buyer model would preserve a key role for the MoE in decisions on investment in generation capacity, and for the state-owned generation company in the sector's day-to-day financial affairs (which for these entities is desirable);
- the model helps to maintain a unified wholesale electricity price, simplifying regulation of prices at which the single buyer on-sells to the distributors and suppliers;
- the model makes it possible to shield financiers of generation projects from market risk and retail-level regulatory risk, reducing financing costs and making the investment commercially bankable;
- the single-buyer model enables a Government that is reluctant to withdraw completely from wholesale electricity trading to retain control of this function.

C. Disadvantages

The single-buyer model can be seen as a transitional arrangement before the conditions for a competitive wholesale market are established. However, another view is that it may be better to skip this stage and adopt a market model with multiple buyers immediately after unbundling, particularly in countries where corruption is an issue and payment discipline is not strong, because of the following disadvantages with the single-buyer model:

- decisions about adding generation capacity are made by Government employees who do not have to bear the financial consequences of their actions. In countries where investors have had Government assurances (such as Hungary, Indonesia, Pakistan, and Thailand), there has been an upward bias in the generation capacity procured both under the single-buyer model and where IPPs have been introduced. The explanation for this is believed to be that officials found it difficult to resist powerful interest groups pushing for state guaranteed capacity expansion;
- power purchase agreements create a contingent liability for the Government, which is expected to step in if the state-owned transmission company (or, in the IPP model, the vertically integrated utility) is unable to honor its obligation to the generator. Where this expectation is formalized in a guarantee agreement, these contingent liabilities can undermine the Government's creditworthiness and economic stability. The cash-based budgeting typically used in developing countries hides the fiscal exposure and creates perverse incentives that distort the Government's decision making;
- the single-buyer model responds poorly when electricity demand falls short of projections (although not an issue in Iraq). Ideally, electricity prices would fall, stimulating demand, and revenue losses would be allocated to private financiers best equipped to manage market risks. Under the single-buyer model, however, wholesale electricity prices rise because take-or-pay quotas (or fixed capacity charges) must be spread over a shrinking volume of electricity purchases. When these high prices cannot be passed on to final consumers, taxpayers bear the losses;
- the model weakens the incentives for distributor/suppliers to collect payments from customers. The state-owned single buyer is often reluctant to take politically unpopular action against a non-paying distributor/supplier, and its position allows it to spread the shortfall caused by a poorly performing distributor among all generators. When a distributor sees that paying and non-paying distributors are treated alike, their motivation for cutting off non-paying customers weakens;
- the model makes it too easy for the Government to intervene in the dispatch of generators and the allocation of payments among them;
- the model increases the risk that, under pressure from vested interests, a Government will indefinitely delay the next step toward fully liberalized electricity markets.

D. Mandatory Competitive Pool

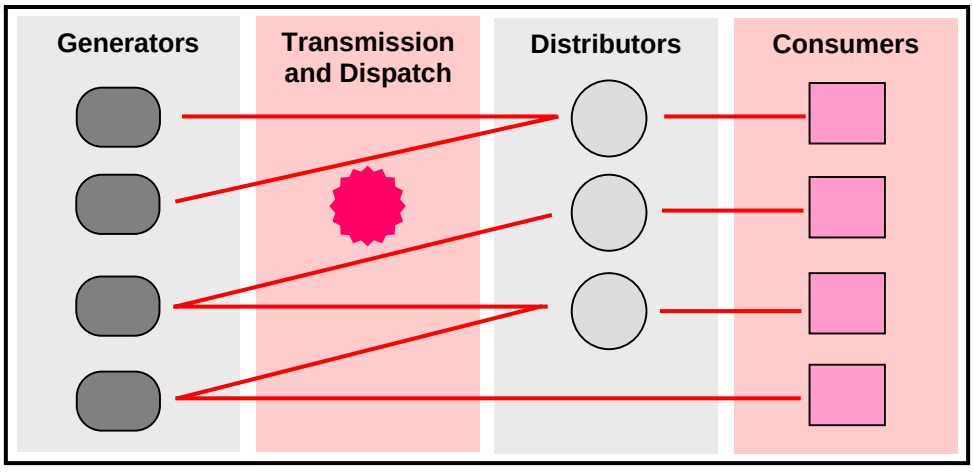
Some of these disadvantages disappear under the more advanced form of the single-buyer model – the mandatory competitive pool. Under this model generators sell and purchasers buy electricity through a wholesale market governed by rules. Because of the difficulties presented by electricity compared with commodities (first, the fact that electricity cannot be stored, and second, that electricity cannot be traced back to any particular generator), the market is in fact more like a pooling arrangement.

With such a model the private sector makes decisions about new generation capacity, and the pool rules replace power purchase agreements. Government guarantees do not shield generators from market risks, and wholesale prices respond quickly to changes in demand and supply. And it is relatively easy to allow generators and distributors in neighboring countries to sell into and purchase from the pool.

In many developing countries, however, the electricity system is too small for a pool to function competitively; this is the case in Iraq presently – at least until further capacity is installed, supply is made secure and competition in generation is introduced. In addition, even where contracts for differences are entered into (as a financial hedge against actual prices), the lack of direct payments between generators and distributors still undermines payment discipline. The Ukraine and Georgia experiences with a mandatory pool – with the government intervening arbitrarily in the allocation of cash proceeds and generators unable to stop supplying electricity to delinquent distribution companies – shows that these disadvantages can have severe consequences.

E. Bilateral Contracts Model

This model is a market made up of long-term PPAs between generators and distribution companies, with the market operator covering electricity purchases not covered by these contracts. Some of the disadvantages with the single-buyer model can be eliminated by this model – for instance, allowing generators to sell directly to distribution companies and perhaps large consumers transfers risk from the Government to the buyers and sellers.



Bilateral contracts electricity trading model; the red lines represent trading of electricity.

Ideally, generators that fail to get paid by their contractual partners can cease supplying, and look for more reliable buyers, and the ability of the Government to intervene in the payment chain from consumers to generators is greatly diminished. Decisions about, and the risks associated with, constructing new generation capacity can be left to private investors – although they will likely still require some form of Government assurance about the future shape of regulatory and market reforms, particularly the nature of Government or the Regulator's control over wholesale and retail prices and the rules of access to the transmission network. Guarantees in this form would significantly reduce the exposure of the Government to liability. However, in the short term in Iraq, and given the issues with consumer payment collections, it is difficult to see private investment in generation occurring without some form of financial guarantee.

The bilateral contracts model also creates challenges:

- a balancing mechanism to match contracted amounts with physical electricity production of sellers and consumption of buyers that the system operator can rely on to maintain equilibrium in real time, would need to be created;
- a transmission access and pricing regime that reflects capacity constraints and loss factors in the transmission system must be developed, because unless market participants receive the correct signals and incentives relating to their physical power flows, even a well-informed system operator will be unable to implement the agreed transactions;
- even with state-of-the-art technology and signaling mechanisms, parties entering into bilateral contracts sometimes forgo trades beneficial to the system. And in most developing countries, given their institutional and technical constraints, direct contracting between generators and distributors/suppliers is likely to lead to suboptimal dispatch schedules;
- the lack of a unified wholesale market price means that the electricity price for small consumers depends on the power purchase contracts signed by their distributor/supplier. To protect the interests of consumers, a regime enabling the Regulator to approve the contracts entered into by distributor/suppliers would need to be developed.

6.3 Licensing Regime

As mentioned in section 5.7 the Electricity Law, it is proposed, would establish the authority of the IEC to institute a licensing regime covering operating utilities and companies participating in the electricity sector. Through such a system the provision of essential services – generation, transmission, distribution/supply and wholesale market/exchange – is controlled and regulated.

Section 5.7 discusses the license terms that should be set out in the Electricity Law. Below is a selection of the provisions that the licenses themselves would contain:

- requiring a licensee to prepare studies or plans regarding expansion, development, modifications or upgrades, and to follow such plans, thus enabling the IEC to ensure compliance with acceptable technical standards, economic criteria and environmental standards;
- obligating the licensee to undertake appropriate preventive periodic maintenance work and to perform emergency or major maintenance work to ensure supply reliability;
- obligating the licensee to perform replacement and rehabilitation work in respect of plant, facilities and equipment nearing the end of its life or that has deteriorated for any reason;
- requiring the licensee to submit studies regarding areas such as short, medium and long term electricity demand or load forecasts;
- detailed financial records and financial forecasting reports;
- relate to competition or market operation, for example that a licensee must ensure that there are no cross subsidies between a licensed activity and any other activity carried on by the licensee;
- requiring the licensee to take all necessary preventive measures to reduce pollution or to observe strict environmental standards of applicable laws;
- requiring the licensee to permit representatives of the Regulator to visit the licensee's premises and sites and to view documents and records related to the licensed activity in order to verify that the licensee is in full compliance with license terms.

6.4 Establishment of Technical Operating Criteria

Another important function of the IEC will be to ensure that technical operating quality standards are developed and published by utilities that provide monopoly electricity transmission and distribution (ie. delivery) services. It is likely that present technical standards in respect of operational performance are a collection of historic practices, unilateral determinations and other loose arrangements – it is doubtful even informal agreements – and that they are not clearly defined. These standards should ideally be developed into:

- a Transmission (or Grid) Code covering technical quality standards for operating the high voltage electricity system, by the transmission company or companies; and
- a Distribution (or Network) Code covering technical quality standards for operating the low voltage electricity systems, by the distribution companies.

Grid and Network Codes establish accepted technical operating criteria to be applied by the operators of networks, which would then be made publicly available. They would comprise another essential plank in the restructured electricity sector – because they ensure that the operating and maintenance standards applicable to transmission, ancillary services, connection and distribution are known and understood by those affected. They are thus transparent, and therefore help prevent discriminatory treatment of those seeking access to such services.

Parties that will be affected by such Codes – generators and certain customers – would need to be consulted and their interests represented. Such parties will, through applicable contracts, have to comply with the Codes: generators, in connecting generating facilities to transmission assets (and thus in designing new facilities to be constructed); and large customers connecting to distribution networks (and also those connecting directly to a transmission system). This becomes particularly important once (or if) separation of ownership of generation and transmission assets occurs, because quality standards would then become subject to scrutiny and challenge.

Certainly, any independent power company seeking to construct a generating facility, and particularly their financiers, will scrutinize the provisions of and contractual arrangements relating to such Codes. They will wish to know with certainty, for instance, engineering and technical design aspects of connection.

Another benefit in having Grid and Distribution Codes is that they provide a basis for the introduction in future of standards against which an operator's actual performance can be reviewed and measured by the Regulator.

6.5 Quality of Service

Coupled with the network codes to be developed, would be performance quality standards – covering commercial aspects – that distribution utilities and competitive electricity suppliers would be required to meet in relation to the provision of service to final consumers of electricity.

In Iraq customer categories are organized according to the following factors: industrial, commercial, agricultural, government, domestic.

Standards to be developed would be different for each class of consumer, but such matters as the following would be covered:

- time for new connections or transfers of existing accounts;
- requests for service changes;
- policy for disconnections for non-payment (to ensure that a transparent process that balances customer interests against revenue protection is followed);
- times for fault repair and advance notice of planned interruptions;
- meter reading and billing issues;
- complaints procedures;
- dispute resolution procedure;
- minimum standards of delivery service that apply in respect of the relevant distributor.

In relation to the last category, Grid and Distribution Codes will include standards that cover technical matters relating to frequency and duration of outages, voltage stability and frequency levels. Appropriate targets in respect of these can be agreed and specified in licenses through annual reviews conducted by the Regulator.

Even in some countries that have highly developed regulatory systems and physically secure electricity sectors, enforceable quality obligations in relation to customer service have only recently been developed. An example of such an enforceable quality obligation is the requirement that a distribution company that has an unplanned break in supply to consumers in excess of a certain period (ie. it fails to remedy the fault in a reasonable time) must allow consumers a deduction off their next bill. With the physical infrastructure issues facing Iraq, it will be too early to develop contractually binding quality obligations. However, service charters – expressions of service objectives – that distributors and suppliers strive to meet, may be useful as an interim measure.

6.6 Health and Safety

The IEC could also be given responsibility for developing a code of compliance that applies specifically to work performed on electricity assets and equipment, to better protect the safety of workers, if general Iraqi health and safety legislation does not provide appropriate protective measures.

A health and safety code for electrical workers would prescribe the technical requirements that must be complied with before work on electrical plant and equipment can commence and matters such as the minimum training requirements for workers. It would obligate utilities to ensure firstly, that such training is made available, and secondly, that workers are required to undertake the training.

6.7 Disputes/Appeals Process

As mentioned in section 5.8, a key function of the IEC would be to establish a system for handling disputes and contractual interpretation. BearingPoint recommends that the Electricity Law give the IEC final authority to resolve disputes between consumers and regulated utilities and suppliers (although appeals should be allowed on questions of due process or on the application of law).

The methods of resolving disputes, the relief available, the mechanism to enforce judgments or decisions, and fundamental procedural requirements (such as rights to have legal representation

and manner of giving evidence) would be covered in the primary Electricity Law; regulations and rules would cover other procedural and implementing matters. Utilities and electricity companies would be required to use all reasonable endeavors to resolve customer disputes and complaints, provide an efficient, fair and accessible mechanism for resolution, provide information to consumers on the process, and monitor complaints in an endeavor to improve the quality of products and services.

The following is a description of a possible procedure for resolving customer complaints and disputes:

- a customer wishing to lodge a complaint would, first, raise the issue with the company by telephone (and the number must be shown on the electricity bill);
- where the customer is not satisfied with the company's response to a complaint, the customer would be told how to raise the complaint to a higher management level;
- if, having raised the complaint to a higher level, the customer is still not satisfied with the company's response, the customer may refer the issue, in writing or by phone, to the IEC. Additionally, the company could be required to refer the dispute to the IEC for resolution;
- the department of the IEC having responsibility to answer inquiries regarding disputes (typically an Office of Consumer Services or similar) assists in the informal resolution of customer disputes that haven't been resolved under the utility's own procedures, and adjudicates customer complaints that cannot be resolved informally;
- the procedure used could be a form of mediation (or possibly binding arbitration in the case of residential customers) conducted by a mediator (or arbitrator) employed (or possibly hired for the purpose) by the IEC and overseen by IEC staff. The costs would be covered by the IEC, with provision for charging customers who make vexatious complaints or utilities that are subject to multiple complaints on the same issue;
- complaints should be in writing and signed by the complainant on a set form provided by the IEC, which would be required to notify the relevant utility company and send a copy of the complaint;
- a written response to the complaint must be returned by the utility within a set period;
- if the matter cannot be resolved (where mediation is used) within a set period, then the matter would be adjudicated by the IEC (a panel comprising one or more Commissioners plus one or more outside experts), and this decision would be binding;
- the composition of expert panels could vary according to the monetary value of the dispute and customer and/or dispute category;
- in any event, typical judicial rules as to evidence and rights of legal representation would apply.

6.8 Contracts

At the outset of the implementation of reforms, new relationships will be created between electricity sector licensees and other participants and their customers. Each of these relationships must be governed by negotiated and signed contracts, as the following demonstrates:

- the national transmission company will, in accordance with its license and the Grid Code, be obligated to provide connection and transmission services, and possibly scheduling and dispatch services, to generators, distribution companies and large directly connected customers. These contracts are commonly known as connection contracts and transmission services contracts;
- additionally, contracts covering the provision of ancillary services by generators will be necessary;

- generation companies will need to enter long term power sale agreements with buyers, be they distribution/supply companies or large consumers (under the bilateral contracts market model) or a bulk purchaser or wholesale market exchange company (under the single-buyer model);
- under the single-buyer model distribution/supply companies will need to enter power purchase contracts with the bulk purchaser or exchange company;
- if competitive supply is introduced, or licensees are given authority to sell electricity outside their license area (or generators are given authority to sell direct to consumers), rights to deliver (commonly called "wheeling") that electricity over networks will need to established under contract, commonly known as use of system or delivery services contracts;
- the process of fuel purchase contracting by generators may need to be revised and, at least initially, such contracts may require review by the Regulator;
- customer contract terms covering supply and connection and delivery terms will need to be developed.

The development of these contracts will occur as part of the restructuring and reform process, and their form would need to be approved by the Regulator.

Fundamental terms to be covered by contract include the following:

- the respective obligations of the parties, be they to purchase or sell electricity, or provide connection or transmission, etc services;
- the manner of and expectation regarding performance – hard obligations or reasonable endeavors?;
- incorporation of network code standards and legislative and regulatory requirements, thus creating contractually enforceable obligations between the parties themselves in relation to these obligations. It should be noted, however, that obligations are typically couched in less than strict terms – eg. a utility will agree to "use all reasonable endeavors" or to perform only "in accordance with good industry practice";
- the duration of the commercial arrangement;
- payment timing and methods;
- limitations of liability where there is a failure to perform obligations – both exclusions and limitations of liability: generally, it is acceptable to limit liability to manageable, insurable risks and to exclude liability for those matters over which a party exercises no control;
- ability to transfer the contract or to subcontract its performance;
- resolution of disputes.

7. IRAQ ELECTRICITY COMMISSION

7.1 Division of Responsibilities between Minister and Regulator

The framework of legislation and regulation must be designed to make explicit the separate responsibilities of the IEC and the Government, represented by the Minister of Electricity. An independent Regulator must carry out the duties assigned to him or her by the Legislature, rather than follow the wishes (or instructions) of the Government of the day. However, the IEC must act within the law (which captures relevant Government policy), and the Regulator's decisions will be subject to review by the Iraqi courts (or by a separate "umbrella" regulatory body). But, most importantly, the Ministry and Commission will need to learn to perform their respective responsibilities and conduct business cooperatively with each other.

The powers proposed for the IEC are set out in section 7.4.

It is also proposed that the duties of the Minister be established in the Law. The Ministry would be responsible for significant areas within the electricity sector, such as the following matters (a list which is not exhaustive):

- the preparation of general and specific policies for the electricity sector that seek to achieve the objectives set out in the Electricity Law;
- the preparation of a national electricity strategy for approval by the Legislature;
- the promotion and facilitation of investment in the electricity sector (initially, the rehabilitation and construction of generating plant);
- cooperating and consulting with, and representing Iraq's interests to, other countries in the region;
- rural electrification issues; and
- the coordination of electricity supply to Government ministries.

The separation of powers and duties must be designed to remove political pressures in the relationship between the IEC and MoE. But, however much detail is specified in the Law, there will always be gaps or room for interpretation, which must involve regulatory judgment. While the regulatory framework, and regulatory expertise, may not be well established in Iraq, neither can we presume that the Government of the day will be more experienced; giving the IEC powers (for instance, to set prices and price controls) subject to appeal to the courts, is therefore better, in BearingPoint's view, than limiting the IEC's powers to merely advising the Government on crucial issues, or giving the Government power to overturn the IEC.

Likewise, the IEC is well placed, in terms of having expertise and an objective stance, to provide broad and effective input as participants in the sector create technical grid and network codes and establish performance criteria.

A. Guidance v. Instructions

The Minister ought to have limited ability to influence the IEC. One possible approach is for the Minister to be able to provide formal *guidance* to the IEC in certain policy areas. The Regulator would be legally unable to fulfill any guidance that does not meet the Regulator's duties as defined in the Law, but would merely have regard to it; guidance therefore maintains the independence of the Regulator whilst enabling the Minister to set out Ministry policies. Another approach would be to empower, through the Law, the Minister to provide *instructions* to the IEC. We do not, however, propose a system enabling instructions to be given to the Regulator, as this would compromise the Regulator's independence.

If the Minister wanted the Regulator to act in a manner not specified in the Law, then new legislation would be required to be passed – through, of course, the democratic processes of the Legislature (because it is the Law that clarifies acceptable actions). Resort to legislation too often would mean that the Law is too narrow and inflexible; it would also risk undermining the notion of independent regulation.

This is relevant where decision-making boundaries for issues not covered by the Law or not specifically within the purview of the Regulator are affected. These might relate to security, the environment, international trade, foreign investment or social objectives of Government policy not related to the electricity sector, such as policy to expand access to electricity among the population, rural electrification, subsidy policy, fuel strategy, renewable energy initiatives, private sector participation and international connectivity within the sector. Clear parameters between the Minister's role and the Regulator's role can be included in the parent Law; and it is always open for the Government to legislate. The balance between these will, however, be delicate and prone to being upset because:

- legislation should never become so detailed (and hence inflexible) as to remove the need for the IEC to use its judgment; and
- if the Government resorts to legislation every time it wishes to ensure policy implementation (difficult, in any event with a Coalition Government) it undermines the notion of independent regulation.

7.2 Need for an Independent Regulator

The reason the IEC must be independent is simple – the Regulator cannot be subject to political (Ministerial) or commercial (that is, from generators, the transmission company or network utilities and companies) pressures or influences if it is to perform its role effectively, particularly if the goal is to create a commercially viable electricity sector that encourages private investment. This can be particularly important with tariff setting in an environment where tariffs have traditionally been low, because raising prices is unpopular and politically difficult to achieve. The process of raising tariffs to, and keeping them at, a level that covers the costs of electricity supply (generation and delivery), including the implementation of subsidy policy, must occur on technical and economic criteria.

Experience with regulatory reform in countries in which historically low electricity prices prevail and which have established regulators, shows that ministerial influence or control over tariffs is difficult to shake off. Jordan is a prime example of ministerial influence over tariffs even today, more than 3 years after the establishment of its Electricity Sector Regulatory Commission.

Ministerial interference in tariff setting creates concerns in potential investors, who want tariff decisions to be transparent, reasonably predictable and based purely on technical criteria so they have the opportunity to recover their costs and earn a profit.

But independence should not be confused with unlimited discretion. What BearingPoint proposes is for the Regulator's functions and powers to be clearly defined and appropriately limited in the Law. In addition, the performance of functions and exercise of powers by the IEC would be subject to appeal to and review, perhaps by the Iraqi courts of justice or another regulatory or judicial body formed to oversee the regulatory authorities (see section 5.8).

7.3 Independence; How it is Established

Independence is achieved through a combination of financial self-reliance, organizational separation and operational autonomy.

A. Financial Self-reliance

The IEC must have an assurance of sufficient ongoing funding, not just to ensure successful performance of its role, but in order to ensure it is not subject to the possibility of influence being exerted through a finance-approval system. At the same time, its budget should be set so as to be non-profit-making over time. Common options regarding financing include the following or a combination of these:

- duties, fees or levies on regulated electricity sector participants, assessed either on assets or on income;
- filing fees and other charges;
- license fees;
- extraordinary appropriations by the Legislature (in response to particular needs or in order to finance particular programs); and
- funding from donors and international financial institutions (normally during the start up phase).

Once the Regulator is established and operating, a common funding source is annual license fees paid by participants in the electricity sector. Setting the level of fees will require both transparency and careful budgeting by the IEC. Regarding transparency, it will be important to ensure the avoidance of the possibility of influence by new sector participants. Charging too much leaves the organisation open to accusations of instituting a stealth tax on the industry (any surplus funds would have to be paid back, most likely through reductions in the following year's charges). Charging too little may prevent the full implementation of its programmes for the year.

B. Organization and Operation

The model proposed under BearingPoint's first Economic Recovery Project has a Regulator comprising a Chairperson and at least 4 Commissioners (the Iraq Electricity Commission) appointed under a full consultative process by the Government, for a fixed period. Four years is suggested. A suggested process designed to ensure political independence is to have Commissioners selected by the Prime Minister from a list of nominees submitted by a nominating committee established by the National Assembly. The nominating committee could comprise Ministers holding key portfolios.

Criteria for selection (experience and expertise in the electricity sector as well as professional competencies) and other matters such as the requirement of Iraqi citizenship and residence, not having been subject to bankruptcy or convicted of an offence, and having no connections with electricity sector participants, would be set out in the Law. Commissioners would be remunerated out of Commission funds.

Assurance of office is as important as ensuring appropriately qualified persons are chosen. An IEC Commissioner should not be subject to dismissal before the completion of the Commissioner's term except for incapacity, failure to perform or ceasing to meet the criteria for qualification. A hearing in respect of which a set procedure must be followed would precede dismissal of a Commissioner. Commissioners should also be subject to being brought before investigatory bodies of the Legislature and investigated by them where appropriate. It is suggested that each Commissioner have a fixed term of office of 4 years, and be eligible for reappointment for a second term.

The IEC would be required by the Law to prepare an annual report, including audited accounts, of the Commission's activities during the year, which must be laid before the Legislature.

It is also proposed that the IEC be established in premises physically separate from those of the MoE.

The framework proposed is designed to provide checks and balances. The IEC should have power to act in order to respond to changing circumstances, but must follow due process and cannot simply impose the wishes of the Commissioners or the Chairman. The IEC's decisions would also be subject to judicial review by the Iraqi courts and able to be appealed. Ideally, those decisions of the Regulator that involve an elements of competition in the electricity sector would also be subject to review under competition or anti-trust laws. BearingPoint is also working to introduce such laws and establish a Commission that would oversee them.

We also propose the establishment of a process for appeal and resolution of disputes between the Regulator and licensees and others affected by the Regulator's decisions without constant recourse to Government.

In countries where an independent judicial system is highly developed and the judiciary is not recovering from decades of oppressive rule, and the electricity sector does not face severe infrastructural and economic difficulties, more freedom in respect of key regulatory powers maybe given to the Regulator than may be appropriate for Iraq. This is a matter for discussion, but it is always possible to use the Electricity Law to give greater and more specific guidance to the Regulator in order to limit regulatory uncertainty.

With regard to the IEC's regulation-making power (see section 4.1), BearingPoint recommends that, so long as specific legal standards and parameters are contained in the Law, the IEC should have power to make regulations without requiring the prior approval of the Minister.

7.4 IEC's Functions and Powers and their Exercise

The Regulator's duties, powers and functions would be set out in the Electricity Law, as would the manner of their exercise.

A. Functions and Powers

Below are the suggested principal powers:

- implement MoE policies for, and review and monitor the structure and operation of, the electricity sector;
- regulate electricity tariffs, charges and fees covering transmission, distribution and supply (in accordance with a detailed methodology set out in a tariff regulation and Law);
- issue licenses to persons engaged in generation, any wholesale market or exchange operator (such as a single buyer), transmission, scheduling and dispatch, distribution and supply (incorporating fundamental terms specified in the Law), and review, amend, monitor and enforce such licenses;
- establish in consultation with the distribution companies a distribution code, and establish in consultation with the transmission system operators a transmission code, and review, amend as necessary, and enforce such codes once established;
- establish, review and amend as necessary performance standards (initially, probably performance targets) of participants engaged in the activities of generation, wholesale exchange, scheduling and dispatch, transmission,

distribution and supply, and monitor and enforce compliance with such standards or targets;
- establish appropriate rights and obligations of consumers regarding the receipt and use of electricity (in accordance with guidance contained in the Law);
- establish, review, amend as necessary and monitor, safety standards for the electricity sector, and monitor and enforce compliance with such standards;
- adjudicate unresolved disputes between license holders and between license holders and persons to whom it provides services;
- participate, collaboratively with the Minister of Electricity, in regional and international matters relating to electricity, particularly as they relate to the generation, transmission and supply of electricity across Iraq's national borders;
- approval of the contracts to be signed amongst the network utilities, transmission companies and generators, and perhaps single buyer covering their respective rights and obligations;
- participate in determining and implementing environmental standards with which generating plant and other electrical installations must comply.

B. Exercise of Powers

In exercising its powers the IEC would have an overriding obligation to act in accordance with objectives set out by the Legislature in the Electricity Law (see section 5.10). In addition, statutory requirements regarding the manner in which the IEC exercises those powers can be imposed. Suggested requirements are:

- ensure compliance with all requirements (in the Law) concerning the manner in which powers are to be exercised and performed – the process to be followed;
- act in as consistent a manner as possible;
- impose on each licensee the minimum restrictions and financial burdens that are consistent with the performance by such licensee of its electricity business;
- take into account the need for licensees to finance and plan their electricity business with a reasonable degree of assurance;
- ensure that, unless its duties under the Law require otherwise, licenses granted to different persons in relation to each type of regulated activity are substantially the same;
- wherever practicable to do so, consult prior to making decisions; and
- always give written decisions together with the reasons for reaching them.

8. WIDER ISSUES

This section raises briefly other issues, not related to the legislative and regulatory area but which nonetheless will need to be considered by the Steering Committee as it reaches decisions.

8.1 Public Relations

The author has consulted the Jordan Electricity Sector Regulatory Commission, the Jordan Executive Privatization Commission and the Jordan-Iraq Electricity Coordination Office. A common theme that emerges – apart from reinforcement of commitment to broad ranging reforms of the Iraqi electricity sector – is:

- the need to involve fully senior MoE personnel in the decision-making process; and
- the desirability of educating personnel in the Iraqi MoE and utilities of the benefits of, and need for, reforms and to persuade them to participate fully in their implementation.

The process of moving from a state-run and controlled electricity sector to a regulated sector operating in a competitive, or at least commercial environment that seeks to encourage the future entry of private capital involves significant change for large numbers of people. These changes may be difficult to understand and accept. Having the employees of the MoE and various utilities "onside" from as early a stage as possible can help create much-needed momentum for the transition that these personnel will be entrusted to implement.

In this regard, BearingPoint recommends that an educational and training program covering regulatory principles, utility management, and contractual and legal issues be developed and implemented throughout the MoE once restructuring and the model for Iraq are agreed. Such training should cover:

- organizational matters covering the functional sectors of generation, transmission, distribution and supply and splitting the key functions for each sector – policy, regulation and operation;
- operational and institutional concerns, particularly in the areas of accounting (finance, cost allocation, budgeting), human resources, regulation (responsibilities as a corporate function, separation of policy from ownership and operation and separation of functions), and due process (transparency, fair and reasonable treatment);
- the contractual and legal framework governing a regulated electricity sector and its licensed participants.

Another concern is the high employee numbers within the MoE; personnel may attempt to stall reforms out of fear of losing their jobs in the restructured industry.

8.2 Wider Iraq Issues

On a wider scale, electricity sector reforms comprise one aspect of similar simultaneous reforms in other sectors of the Iraqi economy and areas of the law. Successful achievement of these other reforms will also contribute to success in the electricity sector. BearingPoint notes that the following areas are of particular relevance to objectives for electricity, and require development:

- ensuring awareness and understanding of the requirements that private investors have before committing capital to projects or other investments;
- inter-Ministerial cooperation, especially coordination with the Ministry of Oil;

- competition law principles – essentially, the monitoring and regulation of commercial behavior to ensure see there are no barriers to effective competition in market sectors and to ensure that firms do not act in a restrictive or anti-competitive manner;
- dispute resolution procedures, both generally for Iraq but also acceptable to foreign investors;
- consideration of the need for an umbrella regulatory authority to oversee and review decisions of the IEC and possibly other newly created Regulators in Iraq;
- rules and regulations in other areas – taxation, environmental law, company law, banking, capital markets and securities laws, and administrative law – that together create an environment attractive to foreign investors.

8.3 Wider Middle East Electricity Sector Issues

Iraq's neighboring countries have much interest in Iraq's progress, including in relation to energy matters, electricity particularly. In our work in developing regulation of the electricity sector we must consider wider regional issues, and Iraq's involvement in them.

Flexibility may be required, as unique projects utilizing the strengths and weaknesses of different neighbors will emerge (for instance Iraq's access to oil and natural gas but lack of infrastructure and security problems; and neighboring countries' needs for more electricity but lack of fuel). In this regard the development initiatives of the Middle East natural gas and electricity transmission integration projects must be supported.

SCHEDULE OF PRESENT IRAQ ELECTRICITY LAWS

Title (Order of importance)	Type	Year	Gazette Ref. and Date	BE Ref.	Remarks
Law Number (7) in 1994 Ministry of Transportation and Communications Law	Resolution	1994	3514, [?], Jun 13 1994	19	Understood to be equivalent to the law for electricity in terms of its description of administrative powers, it establishes the Ministry, its structure and the role of each section. Provided by the DG, Legal, MoE.
Law (159) in 1974, The Establishment of The General Institution for Electric Power	Resolution	1974	2418, 4, October 27 1974	17	Law establishing "General Institute for Electricity" centered in Baghdad for purposes of implementing electricity projects, generation and transmission, distribution and selling.
Law (77) in 1975, First Amendment of the Electricity General Establishment Law No. (159) in 1974	Resolution Amendment	1975	2469, 2, May 12 1975	16	Amends BE Ref 17: changing the form of the Institute for Electricity and transferring existing projects (including water) into the Institution.
Law (22) in 1997, Regulating the Establishment of Any Public Sector Company (in General)	Law	1997	3685, 276, September 1 997	14	As per title. Focuses on company capital, financing, borrowing, administration and monitoring.

SCHEDULE OF PRESENT IRAQ ELECTRICITY LAWS

Resolution (96) in 1999, The Establishment of Public Company for Manufacturing Power Generation Units	Resolution	1999	3781, 409, July 5 1999	13	Establishment of company, within the framework of the Power Commission, to undertake design and implementation of generating projects.
Resolution No. (95) In 1999 (of Revolution Command Council), The Establishment of the Electric Power Commission	Resolution Instructions	1999	3781, 408, July 5 1999	12	Establishes Power Commission associated with Council of Ministers, to undertake direction of all power related affairs: generation, transmission, distribution and implementation of special projects.
Resolution (164) in 1999, Terminating the Administrative Relation of the Electricity Office from the Ministry of Industry and Minerals and Linking it to the Power Commission	Resolution	1999	3790, 542, September 6 1999	10	Also terminating the administrative relation of the Rafidan computer center from the Ministry of Industry and linking it to the Power Commission.
Declaration of the Establishment of the General Company for Generating Power for Supply to the Middle Region	Declaration	1999	3793, 584, September 27 1999	8	Located in the Governorate of Nenva with authority to establish branches in Iraq. Objectives – promote development of industrial output in generation; functions – generation and marketing of power, to maintain and rehabilitate production lines and establish new projects. Similar to Memorandum of Articles or Constitution.

SCHEDULE OF PRESENT IRAQ ELECTRICITY LAWS

Declaration of the Establishment of the General Company for Generating Power for Supply to the Northern Region	Declaration	1999	3793, 586, September 27 1999	9	Same as BE Ref. 8 except that the company established is located in Ninevah Governorate.
Instructions and Conditions for Supplying Power	Instructions	1994	3492, 13, January 10 1994	15	Each Directorate and Sub-directorate is given authority to supply power over the 5 voltage levels; contains detailed general conditions for supplying power to new consumers (mainly technical conditions of supply, consumer obligations such as providing access, not tampering, rights to cut power, metering inaccuracies); instructions for supplying low voltage power and high voltage power, instructions for supplying temporary power.
Bylaw (1) in 2002, First Amendment of Bylaws of the General Company for Power Projects No. (29) in 1998	Amendment	2002	3962, 643, December 23 2002	1	Amends Bylaw of the General Company Electricity Projects 1998 – detailed provisions regarding different departments.
Bylaw (29) in 1998, for the General Company for Power Projects	Resolution	1998	3829, 368, Jun 5 2000	7	Establishes and capitalizes an independent electricity projects company, for missions inside and outside Iraq (focus is on administration and organization of company).

SCHEDULE OF PRESENT IRAQ ELECTRICITY LAWS

Bylaw (1) in 2002, First Amendment of Bylaw for the General Company for Manufacturing Power Generating Units No. (4) in 2000	Amendment	2002	3927, 195, April 4 2002	2	Amends Bylaw by substituting new article 8 – describes various departments, manager's qualifications and department functions. NB. Locate Bylaw No. 4 2000.
Bylaw (2) in 2002, Second Amendment of Bylaw for the General Company for Manufacturing Power Generating Units No. (4) in 2000	Amendment	2002	3960, 625, December 9 2002	3	Further amends Bylaw No. 4 2000 by implementing computer programming training, computer security and public relations.
Bylaw (4) in 1999, for the General Company for Baghdad Electricity Distribution	Bylaw	1999	3817, 201, March 13 2000	18	Bylaws of Baghdad DistCo, owned by state but otherwise independent, including financially; describes role in broad terms, but more focused on administrative matters.
Bylaw (1) in 2000, for the General Company for Generating Power for Northern Region	Resolution	2000	3865, 92, February 12 2001	5	Bylaws stating that company has independence, establishing its capital, describing activities and management, administration and departments. Similar to Articles of Association.

SCHEDULE OF PRESENT IRAQ ELECTRICITY LAWS

Bylaw (3) in 1999, for the General Company for South Distributing Power	Resolution	1999	3848, 778, October 16 2000	6	A General Company under Ref 14, self financing but owned by state – administration, structure, departments (like Articles).
Instructions (1) in 1999, General Conditions for Supplying Electric Power	Instructions	1999	3789, 508, August 30 1999	11	Covers general conditions of supply to consumers (eg. applications for supply, licensing of personal generators, continuous supply, residential or commercial buildings, responsibility for equipment, compensation, entry rights, cessation of supply, billing, meter problems); low voltage supply; high voltage supply; temporary supply. Includes Annexes that describe the classes of consumer, and applicable fees and costs.

REGIONAL COUNTRY COMPARISON

	Jordan	Syria	Lebanon	Turkey	Egypt	Abu Dhabi
Independent, de-politicized Regulatory Commission?	Established and commenced operation 2001. Presently, the Chief Commissioner is still the Minister of Energy and Mineral Resources.	No Electricity Commission established.	No Electricity Commission established. Restructuring of sector now under serious discussion. 90% of sector controlled by government company – fully vertically integrated Electricité du Liban (EdL), founded 1964. EdL is presently unprofitable.	Energy Market Regulatory Authority (EMRA) established in 2001, but plans to liberalize sector stalled – kick started again with the 2004 strategy paper. Financially and administratively independent. EMRA also regulates petroleum and natural gas markets.	Electric Utility and Consumer Protection Regulatory Agency formed by decrees 1997 and 2000, Board of directors formed and managing director appointed 2001; independently funded (from licenses and activities plus provision for funds allocation from state budget); tariff-setting power appears very weak.	Regulation and Supervision Bureau (RSB) established by Electricity Regulation Law 1998 regulates electricity and water. Funded from license fees. Reports to the Chairman of the Abu Dhabi Water and Electricity Authority (ADWEA). ADWEA also the holding company for govt electricity sector assets and its Chair appoints RSB DG, although since it is for 5 year term, it is argued the RSB is sufficiently independent.

REGIONAL COUNTRY COMPARISON

	Jordan	Syria	Lebanon	Turkey	Egypt	Abu Dhabi
Tariff setting	Law gives power to Commission (subject to decree power) but the Minister is still making tariff decisions. Handover to Commission Chairman expected shortly.	Tariffs set by government.	Tariffs set by government.	Transmission, distribution and retail tariffs are regulated, and the wholesale tariff of the state-owned wholesale company, Turkish Electricity and Contracting Company, is regulated.	Tariffs set by cabinet for end user. EEHC sets transfer prices for generation exchanges among electricity companies.	RSB regulates tariffs, through 3 yearly reviews. Single buyer sets the bulk supply tariff, which is a pass through depending on fuel costs and the PPAs. Transmission UoS, distribution UoS and "sale" (supply) charges regulated on a maximum allowable revenue basis, largely driven by cost of capital and efficiency elements. Sum of all these less the govt subsidy equals the consumer tariff. Different classes of consumer (nationals, expatriates, commercial) get different levels of subsidy so their tariffs are different.

REGIONAL COUNTRY COMPARISON

	Jordan	Syria	Lebanon	Turkey	Egypt	Abu Dhabi
Market model, competition	Single buyer model. Sale of generation output negotiated by generators with bulk supply licensee, which on sells to retail licensees (which are distcos). Tariff is reviewed (although not regulated by) Commission; market too small for competition, and regional issues such as lack of separation and competitive markets in neighbouring countries hinder introduction.	Presently vertically integrated structure, no competition yet introduced.	Presently vertically integrated structure, no competition yet introduced.	Electricity Market Law passed in 2001and electricity market comprising about 20% opened in 2002. Presently 29%. EMRA recently reduced eligibility threshold from 9 to 7.8 GWh of annual consumption (corresponds to 29% market opening). Regulated third party access: bilateral contracts with residual power pool.	Single buyer, part of the transmission company. Generators purchase their fuel. Consumers only permitted to purchase from their area electricity company in its area or (for HV customers) from Egyptian Electric Holding Company (EEHC).	ADWEA is also the single buyer – issues tenders for generating plant, negotiates long term PPAs and purchases fuel for generators. It sells electricity to the distcos (including supply) at a bulk supply tariff. Competition only arises in generation, and only then during the tender process for a new plant. There is no competition in supply.

REGIONAL COUNTRY COMPARISON

	Jordan	Syria	Lebanon	Turkey	Egypt	Abu Dhabi
Licensing or permitting regime; third party access	Fully implemented; offence to undertake any licensed activity without license. Transcco required to provide "non-discriminatory access" to users in accordance with terms specified in its license.	No regime established for sector (fully owned and controlled by government).	No regime established for sector (fully owned and controlled by government).	Licensing regime established (EMRA). Generation and transmission unbundled but govt owned. Regulated third party access, but issues exist regarding access to networks (and compliance with EU requirements).	Agency authorized to issue licences at all levels of electricity sector. Due process must be followed.	RSB issues licenses to all participants. Transco has obligation to comply with any "reasonable request" to connect, must charge "cost reflective" tariffs and must not "unduly discriminate against" persons to whom it provides transmission.
Performance standards / Quality of Service	In process; draft grid code just completed; distribution standards in process.	None.	None.		Regulatory Agency has varied powers, including "ensuring the quality of the technical and administrative services provided by" the utility and issuing licenses for the construction, management, operation and maintenance of all sectors.	Not included in licenses. RSB is introducing them gradually. The current tariff review extends the proposed Key Performance Indicators (KPIs).

REGIONAL COUNTRY COMPARISON

	Jordan	Syria	Lebanon	Turkey	Egypt	Abu Dhabi
Dispute resolution method	Council of Commissioners rules on licensee disputes if licensees agree and on all disputes between customers and licensees; challenges in High Court. Council has power to rule on license breaches; must give opportunity to make representations or to remedy the breach.	None.	None.	EMR Board has jurisdiction over disputes between transco and distcos over connection and use of system and over accusations that transco's intervention in the market was "excessive". Board decisions are able to be appealed to court of first instance.	Regulatory Agency has power to investigate and settle consumer complaints. Customers must first have complained to the company concerned and not been able to reach a solution.	RSB can issue compliance orders on operators failing to meet license obligations ("Preliminary" and "Final" Notices) but so far has not needed to do so. The sector operates on consensus. The RSB consults widely on all key decisions. In practice it appears that because ADWEA has ultimate authority and ownership, and does not wish to see public disputes, any problems are resolved behind the scenes.
Status of privatization	Privatization well advanced although no privatizations in electricity completed yet; Privatisation Law passed and Executive Privatisation Commission well established; successful transactions include telecoms; process for sale of electricity distribution companies nearing completion stage. .	100% government owned and controlled at present. Privatization of state electricity company discussed by Government but presently is not considered viable (collections are only half). Focus has been on liberalizing and reforming other sectors, eg. banking.	Presently fully owned and controlled by govt. Aims of converting EDL to profitable commercial company, including discussion of privatization. MOU signed with PNB-Paribus to find international management partner for EDL.	Privatization of distcos has occurred, and there have been several BOOT, BOT and TOOR projects. Privatization program began early 1990s but stalled because of legal issues, recently remedied through further constitutional reforms. 65 private and 122 public generation; 1 public transmission; 8 public distribution; 6 private and 1 public wholesale companies.	EEHC owns generation, transmission and distribution companies. Major privatization programs in energy and telecoms; now under serious consideration for sector utilities. Several plants constructed using USAID and World Bank funding, and several major BOOT projects in pipeline.	Only in generation so far; two govt owned power plants sold 40% stakes to investors. In addition, new generating plant is publicly tendered, and therefore private from the start. Advisers have been appointed to privatize distribution/supply. At this early stage the consensus view is that this is likely to be in the form of sale of a minority stake to a govt owned financial institution (eg. the pension fund).

REGIONAL COUNTRY COMPARISON

Additional Brief Country Notes

Jordan

The electricity sector was fully restructured, and the Electricity Sector Regulatory Commission established, in 2002. International consultants continue to work closely with the Commission. Regional issues appear to be of more significance to Jordan because of growing demand and scarcity of natural fuel sources. Jordan has a longterm gas supply contract with Egypt and appears keen to be involved in Iraq's reconstruction (opportunities for Jordanian companies and perhaps hopes of accessing cheap electricity supplies). Also keen on regional transmission integration, as this would reduce the capital investment required.

Egypt

The Egyptian Electric Utility and Consumer Protection Regulatory Agency was formed with the following objective: to regulate, supervise, and control all matters related to electric power activities, whether in generation, transmission, distribution, or consumption, in a way that ensures availability and continuity of supply, so as to satisfy consideration environmental protection, the interests of the electric power consumers as well as the interest of producers transmission operators and distributors. The Agency also aims at preparing "for lawful competition in the field of electricity generation, transmission and distribution, and avoiding any monopolization within the Electric Utility". Egypt is a member of the interconnection project with Jordan, Syria, Lebanon, Turkey and Iraq, and also a linkage project with Libya and Tunisia.

Syria

Reforms in electricity sector have been under discussion for some time, because rising demand needs to be met: 3,000MW capacity needs to be added by 2010, although foreign-owned IPPs are not yet under consideration. Transmission and distribution reliability is a problem. Grid is linked with Jordan and Egypt. Syria is also a member of the regional interconnection project.

Lebanon

Assets, including the major oil refinery, have been damaged over years of fighting, and the oil pipeline with Iraq closed some time ago. The national grid is linked with Syria's grid. Power sector reforms under discussion at various times, and more serious consideration of reform was apparent in 2004 (keen on European model). Ministry of Energy and Water is keen to privatize power production and distribution – a draft Law was awaiting approval (present status not known), and the World Bank is funding a study on power sector restructuring and privatization. Linked with hopes of becoming an oil producer, and of attracting foreign prospectors. Electricity sector is quite small (installed capacity equals 2,400MW but viable generation is around 1,800MW) and there are concerns about meeting rising demand. Transmission and distribution quality issues exist, and there are regular outages. Gas supply from Syria is planned through a pipeline being built. Lebanon is also a member of the regional interconnection project.

REGIONAL COUNTRY COMPARISON

Turkey

Has a much larger electricity sector – installed generation capacity 28,332MW at end 200. Growth in generation has remained below electricity demand until recently, which has made Turkey a net importer of electricity since 1997. Growth in demand slowed as a result of the 2001 economic crisis, but has picked up again. Significant electricity shortfall expected by 2008 unless new facilities become operational. Government took key steps in 2001 to liberalize its energy sector, including passage of the Electricity Market Law and establishment of the Energy Market Regulatory Authority (EMRA). However, the government has done little to follow through on plans to liberalize and privatize the electricity and natural gas sectors. In March 2004, the Government's High Planning Council adopted an Electricity Market Reform and Privatization Program

strategy paper. It covers procedures for privatization of distribution and generation assets, transitional issues and security of supply. Distribution will be reorganized on the basis of 21 distribution regions, and distribution companies will be reimbursed according to their revenue requirements, with a uniform national electricity pricing scheme to be introduced for 5 years. Turkey acts as an important link in the East-West Energy Corridor in terms of natural gas.

Abu Dhabi

The United Arab Emirates has almost 10% of the world's oil reserves and is the world's fourth largest gas producer – and Abu Dhabi has 94% of the UAE's oil and 92% of the UAE's gas reserves. The UAE's demand for electric power soared in the 1990s, because of population growth and new industrial developments; it is expected to continue to rise sharply through 2010. The UAE's installed generating capacity stood at 6,850MW in 1998. In early 1998 the Emirates decided on a comprehensive restructuring in both the water and electricity sectors, favoring sweeping privatization with minority interests held by foreign firms.

Dubai has been skeptical about the idea of privately-run power and water plants, but Abu Dhabi has embraced the idea, and has restructured and corporatized both sectors (ADWEA, formed in 1998, being the ultimate holding company for subsidiaries holding Abu Dhabi's water and power assets), establishing a single electricity buyer, introduced a licensing regime, and established a Regulator and full regulation of both sector activities. Abu Dhabi has also established a statutory arbitration system for resolving disputes.

A key issue in Abu Dhabi is the difficulty of putting regulatory pressure on the Single Buyer. While it channels the bulk of the revenues for the sector, its own value added is tiny by comparison. The price cap has little impact in such a case and the regulator has little leverage to push ADWEC to improve performance, since this involves fuel purchase (and has a significant impact on cost). Several market players argued for the Single Buyer being part of the Transmission business because it would then have sufficient asset base for the regulator to have some leverage.

The operator of Abu Dhabi's first IPP secured $556m in commercial financing for a $700m expansion of al-Taweelah A-2, a 710MW and 50 million gallons of desalinated water per day cogeneration facility. CMS Energy of the US handled the management, financing, construction and operation of the plant, and was awarded 40 percent ownership of the project. Abu Dhabi's second independent water and power project, Taweelah A-1, is a consortium of Gulf Total Tractebel Power Co, TotalFinaElf of France and Belgium's Tractabel. ADWEA has also signed a contract with CMS Energy and International Power PLC for the Shuweihat IWPP $1.6b project to construct and operate a 1,500MW combined cycle plant with a desalination capacity of 100 million gallons per day.