State of Israel: Inter-Ministerial Steering Committee on Electric Sector Reform

Task A2 based upon the letter agreement, dated August 29, 2002

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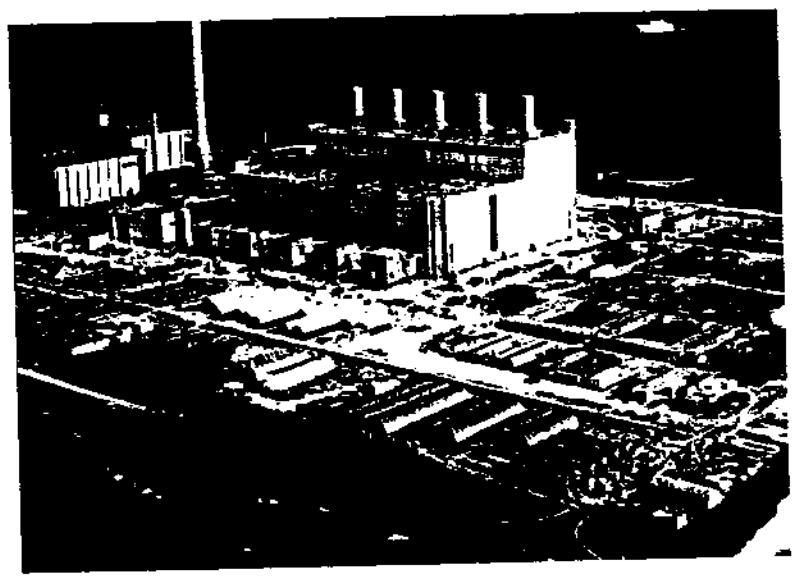
Executive Summary



February 28, 2003

EXECUTIVE SUMMARY

Background

The Inter-Ministerial Steering Committee ("the Committee"), chaired by the Directors-General of the Ministries of National Infrastructure and Finance, was established by the Government of Israel to further address flaws in the structure and performance of Israel's electricity industry (hereinafter, "the Industry"), including: (a) apparent cross-subsidies; (b) perceived organizational inflexibility; (c) excessive personnel costs; (d) actual and/or potential difficulties in raising necessary capital; and (e) other perceived shortcomings in efficiency and quality of service considered attributable, at least in part, to a lack of competition in the sector. The Committee's goal, as stated in Government Decision No. 125 issued in 1998, is to "create conditions for the development of a competitive electricity market for the benefit of consumers, in a manner that is accepted in the majority of the world's developed countries." The Inter-Ministerial Steering Committee operates under the joint chairmanship of the Directors General of the Ministries of National Infrastructure (hereinafter the "MNI") and Finance (hereinafter the (MoF"), in collaboration with representatives of the Ministries of National Infrastructure, Finance, and Justice, the Prime Minister's Office and the Government Companies Authority (hereinafter the "GCA").

In December 2000, an agreement was signed by the Ministry of Natural Infrastructures, Government of Israel (hereinafter, "the MNI") and Deloitte & Touche LLP and Deloitte & Touche Business Consulting Israel 1986 LTD (hereinafter "Consultant") which required the Consultant to study alternative structures for electricity sector reform in the developed world, and present to the Committee its findings. This was done in a report accepted by the Committee in June 2001 (Task A1). In performing its initial work described above, the Consultant also did significant work in determining a model that should be considered by the Committee in going forward in the restructuring of the Industry.

In July, 2001, after reviewing the Consultant's report including the recommendations included therein, the Committee decided **"that the future targeted structure of the electric industry in Israel be a decentralized competitive structure. This objective should be attained as soon as it is possible. A timely, reliable and efficient supply (including assuring adequate reserves) of electricity should be ensured while minimizing costs, wisely using land resources and conserving the environment. During and subsequent in the implementation of the reform, the planning of the electric system in the areas of production and transmission, and a proper, strong and independent regulatory system must be ensured to permit adequate support in the execution of the reform."** Hereinafter, production will be referred to as generation.

As a result of extensive discussions between the Committee and the Consultant during the first half of 2002, it was decided that a workshop should be held with the objective being "how to reach the goal (described above) most effectively, at lowest cost, in the minimum time, ensuring sufficient high quality electricity, all within the constraints of Israel's unique local conditions." The workshop was held on August 27-28, 2002 and was attended by members of the committee and representatives of the PUA. The consultants, during the last 10 days of October 2002, met with all parties associated with the industry, including three meetings with the Israel Electric Company (hereinafter "the IEC") and three meetings with members of the Committee.

Although, the responsibility of developing a new model for restructuring the Industry belongs to the Committee, it must be realized that this is a dynamic process and events are happening independent of the Committee. Examples of these events since June 2001 are:

- The PUA's determination of tariffs by function of the IEC.
- The signing of the first Purchase Power Agreement for a major Independent Power Producer (IPP) plant.
- Receipt of a bid in response to a government-issued tender to build a 370-490 MW gas turbine combined cycle generating plant. The bid is currently under review by the Joint MNI-MOF Tender Committee.
- The advancement of the natural gas project including the signing of supply contracts by the IEC.
- Cogeneration is seen as an important element in encouraging competition, as well as a means of creating new generation capacity. The recent government decision encouraging cogeneration by allowing licensing of cogeneration and requiring the IEC to purchase electricity from this source is a major step forward.

Each of these events is significant in the development of a new industry structure and in no way are they inconsistent with the recommendations included elsewhere in this report. On the positive side, they are a legitimate response to those who claim that nothing has been happening during the last year.

In order for this plan to be successful, the complete cooperation of the IEC is necessary in accomplishing the steps that would be their responsibility. Since none of the proposed steps should cause problems for the utility, there is no reason why this cooperation should not be provided.

Reasons to proceed with reform and the necessary steps that are required.

During the past 50 years (since the Israeli government acquired ownership of the IEC) the three main goals of public policy have been (1) to add generation capacity (2) to keep the cost of electricity to the consumer as low as possible and (3) to maintain and improve the reliability in electric distribution. Failure to accomplish the first goal would lead to potentially large economic losses for the country because of generation shortages.

Failure to accomplish the second goal would have been politically unacceptable. The IEC performed at excellent levels in improving reliability. Distribution reliability improved from approximately 15 outage hours per customer in 1990 to approximately 3.5 outage hours per customer in 1999. **However, at no time did there appear to be an effort to create public policy that determined a sense of fairness between the customers, the taxpayers, the electricity industry employees, the environment and the corporate executives of IEC, while developing adequate returns on investment to encourage privatization.** It is crucial for the government to accomplish this sense of fairness thought well thought-out reform initiatives.

There is no "cookie cutter approach" for successful industry reform. The key is to make a thorough policy analysis of the environment and craft a solution to fit, both, its particular circumstances and the particular objectives of reform. We believe that this analysis has been done during the past two years through discussions and the workshop. They are as follows:

- The unbundling of the IEC is an imperative action and should commence immediately by requiring subsidiaries to be established as described below.
- There is a need for a strong, independent regulatory organization (PUA) whose commissioners are selected by various Ministries of the government and whose main objective is to establish a sense of fairness between all parties involved in the industry.
- The establishment of a uniform system of accounts.
- The responsibility for issuing licenses should be moved to the PUA.
- The restructuring of the generation function is required to create competition.
- The MNI should have the responsibility of setting public policy.
- The power purchase agreement (hereinafter "PPA") is the mechanism for setting the tariff between the producer of electricity and the transmission operation.
- The PUA should institute Performance-based regulation into the system.
- A process, by the PUA, to license Independent Distributors needs to be established in order to initiate completion in the distribution function.
- There is an immediate need to commence activity in the areas of conservation, cogeneration and distributive resources.
- Electricity market reform can be accomplished in an economic environment once there is significant surplus capacity. Israel needs to expand its capacity as soon as possible in order to protect its economy and to be able to set up a market environment.

The unbundling of the IEC

During the workshop, there was significant discussion regarding the lack of financial information that is being supplied to GCA by the IEC. Although financial information by "business center" was available, the amount and detail of the data did not appear adequate for the Committee to make the necessary business decisions. There is an immediate need to improve this situation. At a minimum, the easiest way to accomplish this goal is to require setting up subsidiaries for generation, distribution, plant

construction and technical services. By accomplishing this objective of obtaining meaningful financial information, the reform process will take the first steps with the "unbundling" of the IEC.

In many parts of the world, the structure of vertical monopolies has been unbundled. One reason is that generating electricity has become viable as a competitive function of the industry. New high-efficiency gas turbines and combined-cycle gas turbines that generate electricity have lower combined capital and operating costs than traditional generators. Consequently, small, modularized systems can be manufactured to generate electricity at the same low cost as that from very large central power stations built only a decade ago.

Unbundling involves the method by which a vertically integrated utility (such as the IEC) is divided into competitive and natural monopoly sectors. The general restructuring model proposes that the competitive sectors (generation and supply) should become separate companies in which the naturally monopolistic transmission and distribution companies have no ownership interest. In practice, unbundling initiatives have ranged from simply maintaining separate sets of accounts for each sector to full implementation of the general restructuring model. Countries that have only maintained separate books have, for the most part, done so in order to comply with the minimal provisions of a law or directive mandating electricity sector reform. This assures that each company is making decisions that are in the best interests of the companies that the Board members represent. Even among countries that have fully unbundled their electric utilities, the cost accounting challenges involved in the proper assignment of costs to each sector are substantial, and possibilities for cross-subsidization still exist. The difference is that the cross-subsidies are smaller and the ground rules for competition are clearer, thereby making competitive entry easier. As a result of these actions, more meaningful financial information will be available upon which decisions (including tariff setting) can be made and a major step will have been taken in the advancement of the reform process.

This unbundling process will result in a Holding Company (IEC) remaining after the following is accomplished:

- All existing generation plants should be placed in two subsidiaries. The rationale of which plants should be grouped together is discussed in the report. In the future, newly constructed generation facilities that are wholly owned by the IEC would be placed in new subsidiaries.
- The transmission function will be placed in a subsidiary of the Holding Company (IEC). Transmission is an accepted natural monopoly, and therefore, one company will operate this function under regulation. The powers and responsibility of the transmission function are defined in the report.
- The distribution companies of the IEC will be placed in four subsidiaries and will operate on a regional basis. While more firms could be created, the Consultant sees no particular benefit to creating more than four of approximately equal size. Four is a sufficient number to provide competition among buyers in a future competitive market and to allow benchmarking between firms. If each firm has 20 to 30% of the overall Israeli market (presently approximately 9000 megawatts

peak demand) none should be able to exert monopsony power (monopoly of a single buyer or too few buyers) and each should be sufficiently large to enjoy reasonable economies of scale. These operations will be regulated. However, companies and kibbutzim that desire to be in the distribution business, will be allowed to do so once they have received an appropriate license and have demonstrated the ability of taking on such responsibility. These new players in the distribution function as referred to as Independent Distributors or ID's later in this report.

- The plant construction operation will be placed in a separate subsidiary. This business (plant construction) would be completely separate from all other functions of the IEC with no cross-subsidy allowed. This would require IEC to procure its new generation through competitive bidding and would force the plant construction business to compete with others in the building of generation plants. This action should lower the cost of construction of new generation and, eventually lower the generation tariff. An additional benefit from this action will be that the "plant construction subsidiary" could realize its potential and become a major provider of infrastructure in the global marketplace.
- A subsidiary that will hold all service operations will be established. Most of these activities are now in the distribution operations. Its responsibility will be to provide services to all operations of the present IEC, except the plant construction operations, and to IPP and Independent Distributors, if required. IPPs and IDs may not have significant critical mass to be able to provide these services for themselves. It is interesting to note that, for efficiency reasons, additional transmission construction is performed by the IEC regional distribution operations and not by the construction company.

After all the above-described transactions are performed, IEC will be a holding company with many subsidiaries. The establishment of a Holding Company with such independent subsidiaries should provide an opportunity for improved measurement of efficiency and create new possibilities for raising capital. It is also an interim step before privatization. The consultant is not recommending a "single buyer". However, the right to sell to the IEC would create a credit enhancement for the IPPs. There are no outstanding issues remaining other than to assure that this structure does not create any additional taxes.

The IEC will always have the responsibility for the supply of electricity; however, any capacity costs that they incur should be included in their generation tariffs. Furthermore, the IEC has an obligation to achieve a 20%-25% reserve for the country, and should do everything in its power to accomplish that goal including the promotion for conservation. After restructuring of the industry, the Holding Company would be subject to the same responsibilities it now has.

Strengthening the Public Utilities Authority

Israel's two broad goals of reform and assured quality of service are presently viewed within different offices of the Government as competing - and, to some degree, inconsistent - objectives. Several such offices, with individual missions and objectives of their own, have jurisdiction over electric industry matters, and all these offices operate, in large measure, on an independent basis. The result is that any one office can assert jurisdiction on an "after-the-fact" basis, where it perceives improper activity by an electric industry participant. This, in turn, produces an overall licensing procedure that is neither coordinated nor coherent. Unforeseen and/or conflicting government actions may result in material increases in project cost and lengthy project delay, adding to the risks faced by project developers, reducing the number of potential financable projects, and increasing the cost for projects that do get financing. Delays will invariably result in an inability to bring new capacity on line in a timely manner.

Clearly, uncoordinated efforts of multiple government agencies, each independently exercising its jurisdiction, can have a harmful effect on individual power supply projects. However, the potential for harm to the reform process becomes even greater when the same *ad hoc* approach is applied to the very design of the process itself, including the delineation of industry structure, commercial and legal relationships among the various participants, and the duties and powers of industry regulators.

A successful electric industry restructure effort requires that the resultant design be both internally consistent and compatible with underlying economic and engineering constraints, as well as operating realities imposed by the requirements of law. The development of a successful restructure plan therefore requires agency expertise in the disciplines of economics, law, accounting and engineering, as well thorough knowledge of the electric industry. Similarly, successful restructure is not possible in an environment wherein an individual agency can frustrate the overall effort by insisting on the inclusion of its own requirements without regard to the restructuring plan's ultimate viability. Indeed, it is becoming quite clear that electric sector restructuring is unique (or almost unique) in the degree to which it can be sabotaged by "compromise" solutions formulated by non-experts on political grounds. Such an approach may, in fact, result in a compromise plan that is economically and technically unworkable, and therefore inferior to the traditional, regulated-monopoly arrangement.

It was recommended in the Task A1 Report that one of the following two options be considered in Israel:

1. **Formation by interested government ministries and agencies with the prerequisite expertise of an industry restructure task force, chaired by the PUA.** In the operation of this task force, there must be a *bona fide* effort by each participating agency to fully understand the concerns of sister agencies, and to attempt in good faith to address or dispel such concerns. A task force approach might suffice to produce substantial agreement on the appropriate goals and elements of a

restructure plan, and could lead to the design of a specific plan that addresses all agencies' concerns.

Even if full agreement among all parties cannot be achieved, such a process will narrow the remaining unresolved issues and bring them into focus. Any dissenting agency that participates in the process in good faith should be permitted to express its remaining concerns in the form of a minority report or other vehicle for consideration by a higher government body, with the majority having opportunity to respond.

2. **Consolidation of all key industry oversight functions in a much-enhanced PUA, with opportunity to appeal PUA decisions to the judiciary, but only if certain threshold conditions are met.** While requiring the passage of new law and otherwise challenging the territorialism to be found in government generally, this more creative alternative would, at least potentially, offer several important advantages, including but not confined to:

- More rapid development of a critical mass of regulatory expertise in all relevant disciplines, including the operation of the industry itself;
- Superior coordination of expert analyses of all industry issues;
- Reduced costs of regulation, due to the avoidance of duplication;
- Reduced regulatory risk for market entrants, due to the lessened likelihood of policy reversals;
- The likelihood of superior and less costly regulation of the natural gas sector, if such regulation were included in the mandate of the PUA;
- "One-stop shopping" for industry licenses; and generally there should be faster and less costly regulatory approvals.

We believe that the second alternative is the preferred option even though it will require new legislation. The current structure of the PUA is designed to balance the need for public representation with the need for government expertise and accountability. It is recommended that the current structure be preserved during the time of transition. Once there is a fully competitive market, it would be advisable for all members to be public members and for the Chairman to be appointed by the Government. The commissioners should be hired on a full-time basis in order to diffuse the influence of the Chairman who currently has excessive influence over the decisions of the Authority. Any vacancies should be filled within 60 days. It is important to realize that the most important responsibility of a regulatory authority is to monitor the fairness balance between the customers, the taxpayers, the electricity industry employee, the environment and the corporate executives of IEC. This should be accomplished with an emphasis on assuring reliability for the customer and maintaining adequate returns on investment to encourage future privatization. **However, the regulatory authority should never be placed in the position of operating the utility or any function of it. In addition, the PUA does not**

have the responsibility to determine public policy issues; this is the responsibility of the MNI.

The government must make it obvious that the guiding principles for review by the PUA are transparency, consistency and predictability of regulation with the elimination of uncertainty. It must stress the importance of the independence of the PUA, of the clarity about the respective roles of government and of the PUA, and of fairness to all interest groups involved, but particularly to the customers on reliability and to investors on a fair rate of return.

Transparency means that regulators operate in the open, including the making of public decisions and publishing these decisions, with appropriate explanations of why the decisions were enacted. Transparency safeguards regulators' independence and leads to legitimacy and credibility. Legitimacy leads to the customer trusting the regulator because the customer views the regulator as independent from the industry. Credibility results in the investors trusting the regulator and the system because the regulator is seen as dependable and able to withstand shifting political philosophies. Since one of the goals of reform is to, eventually, encourage foreign investment in the industry, all regulation and pronouncements, including its web site, by the PUA should be, not only, in Hebrew and Arabic, but also in English.

Establishing a uniform system of accounts

A basic element of an outstanding regulatory system is a "uniform system of accounts". It is the consultant's understanding that this accounting model is not in existence in Israel. A uniform chart of accounts is required as more entities participate in the generation and distribution functions so that the regulator is able to make easy comparisons of one company to another. This is the standard framework in any regulated industry with more than one participant. The IEC is presently installing a new ERM accounting system. The information to be obtained from that new system should satisfy the requirements of the uniform system of accounts. For this reason, the PUA should act on this recommendation, immediately. In addition, at the present time, the PUA does not have any accountants on its staff. At least one such skill-set, at a very high level of competence, should be hired as soon as possible.

Responsibility for issuing licenses

The MNI is presently responsible for issuing licenses to entities providing service in the industry. All participants should be licensed. The consultant suggests that this responsibility be given to the PUA as part of the overall reform package. This is another instance where new legislation will be needed. Presently, the government ministries hold the responsibility of determining whether the IEC's licenses should be renewed in 2006. They should maintain that responsibility until additional deliberation and analysis can be performed on this issue. The main reason for delaying this decision is to allow for the determination of whether the proposed reforms in this report are a success and the PUA, with its new responsibilities, demonstrates a sense of fairness between the parties.

Strengthening of the PUA is discussed in Section III.a of the report.

Restructuring the generation function

Earlier in this Executive summary, it was mentioned that (1) a IPP won a tender to provide a significant amount of additional generation capacity; and (2) that the IEC should unbundle their generating plants into two or more subsidiaries. In the future, IEC will continue to build generation capacity, but in subsidiaries and not as part of the holding company. A third type of investor will be a company where there will be IEC majority ownership and a minority ownership of 20%-49%. The three types are summarized as:

- Wholly-owned subsidiaries of the IEC
- IPP's
- Companies with IEC majority ownership and a minority ownership of 20%-49%

The overwhelming challenge to this structure is creating an obstacle free environment that encourages future investors into the generation function. Three key elements to overcome this obstacle are: (1) the elimination of uncertainty, (2) PUA providing an adequate rate of return to future investors and (3) the availability of sites for future generation plants.

Uncertainty causes investors and businesses to worry. They tend to avoid situations that present continual surprises. In some instances, energy companies have abandoned certain international markets because of uncertainty over profits. Because the success of electricity reform depends upon business incentives to serve customers, improve efficiency, and expand capacity, the government and the regulators must create and maintain an environment in which managers can plan and investors will earn profits commensurate with their risk.

Businesses should bear their normal business risks and be allowed to retain profits that are based on the commitments policy makers have made. When regulators allow businesses, consumers or politicians to respond to problems by changing the rules, investors consider these changes as increasing risk and require higher rates of return and shorter payback periods. Higher required returns result in higher prices, which affect the customers in a negative manner. For this reason, it is important to avoid uncertainty at all cost.

Investment can occur only when or where sites are made available. If all sites are only licensed to those already in the generation business, entry into the market will be blocked. Positive conditions ensure that sites are available to new entrants and the MNI should encourage new-entrant planning approvals and consents over incumbents' plans.

The MNI should set public policy

As mentioned earlier, the responsibility for actions that require determinations that effect or influence public policy belongs to the MNI and should not be given to the PUA. There are occasions when the MNI may ask the PUA for its advice on issues, especially when the information required relates to costs and tariffs. **Any such advice should be given by the PUA in confidence.** Consequently, the development of future plans, the technologies to be used and site selection should remain in the MNI. In addition, the responsibility of facilitating the entry into the industry by new participants is an additional charge of the Ministry. The MNI will have the co-responsibility of reviewing the PUA's annual budget, reflecting the activities to be performed by the Authority in the upcoming year. However, the MNI would not be allowed to veto any activities that are required by law. Conservation planning and strategy will remain with the MNI. However, the MNI must implement, immediately, a strong conservation strategy because conservation is of extreme importance in reaching a 20%-25% reserve capacity. The MNI will also select one of the commissioners to be a member of the PUA.

Use of the power purchase agreement

Within the structure being proposed, the most important mechanism is the power purchase agreement. A power purchase agreement (PPA) is the principal document governing the terms for purchase and sale of electricity between one of the parties mentioned in the above section and the IEC holding company. It defines the rights and obligations of the major participants in a project. Historically, in a mature regulatory system, the power purchase agreement is not valid until and unless it is approved by the regulator (PUA).

It is important to note that the regulator approves the power purchase agreement; the parties negotiate the terms of the agreement as business entities; and the regulator confirms that the agreement is in the public interest. As mentioned earlier, it is not the role of the regulator to operate the electricity industry. It is the role of the regulator to promote policy objectives such as appropriate rates of returns, transparent pricing, and consumer protection among the participants in the electricity industry.

In a government owned utility, the power purchase agreement is the end result of a tender process that includes a public request for proposals for a specific project. The regulator does not develop the request for proposals; this is a business document designed to meet the business objectives of the soliciting company. However, it is may be in the public interest for the regulator to approve the request for proposals that is to be submitted by the utility, especially in cases where resulting expenses will become part of a regulated tariff.

Independent power projects generally are developed on a project finance basis, with investors funding part of the project through their equity contribution. This investment is

generally between 10%-40%, depending upon the amount of country risk. The remainder of the funds required is financed through debt, generally from banks. Project developers are unable or unwilling to provide corporate guarantees for the portion of the investment financed by debt, so lenders must look to the strength of the project itself for guarantees.

To close the financing plan and actually start construction on a power installation, an investor therefore needs to be able to negotiate a set of agreements that satisfies not only the regulator and itself, but also the banks (or government credit agencies) that will be financing the major part of the investment. Some of these agreements relate to the period of construction of the plant (completion guarantees, siting agreements); some to the period of operation (power purchase agreements with the purchasers of the electricity, fuel purchase agreements, agreements on dispatch); and others to the environment in which the project will be undertaken.

There is little significant difference between countries in the way that agreements for plant construction and operations are drawn up. By contrast, the agreements relating to the environment of the project differ substantially. Typically, in low risk industrial countries, the project environment belongs to the general framework in which the power sector and private investors operate. These environmental issues can include: the predictability of government and regulators decisions and enforceability of contracts, the transparency of the regulatory environment, electricity tariffs (reflected in the power purchase agreements) that ensure a strong financial situation for the sector, and the convertibility and transferability of currency. But this is the area where lenders for higher risk and developing-country projects perceive the greatest risk. Governments may, for political reasons, make decisions relating to tariffs that render projects insolvent, or because of economic events their currencies may lose value. Especially if there are security issues to be considered, lenders will perceive greater risk of making a return on their investment. Unless lenders feel comfortable that their loans are sheltered from these types of country risk, they will be unwilling to support a project.

Many of the private investors currently working to launch power projects in countries, that are in the process of reforming the industry, have sought to mitigate country risk simply by requiring the host government to guarantee that the rules of the game will be respected through specific support or implementation agreements. Increasingly, however, the value of such government guarantees is being questioned. If, as is usually the case, the government is unwilling to ensure that its public power utility respects the terms of a power purchase agreement, what are the chances that it will respond when its guarantee is called?

Instead, an alternative for mitigating this country risk could be provided in the following ways:

- **Macroeconomic reform**. The best way to address country risk is at the source of the problem: remove all the obstacles that make lenders uncomfortable. But that requires economic and electricity sector reforms so far-reaching that they would go well beyond a specific project, with a time scale measured in decades rather

than months. (In fact, promoting private investment for electricity, even before the entire investment framework has been put right, can give a significant impetus to the macroeconomic reform process.)

- **Contractual mechanisms**. A second solution is to develop contractual mechanisms that address each aspect of country risk.
- **Obtaining cover from third parties**. Lenders could also turn to third parties for cover. For example, export credit agencies could provide guarantees.

Power Purchase Agreements are significant legal documents and can run to 500 or more pages. This is because the agreements are designed to state clearly which party carries the financial responsibility for which risk in such a way that the lenders, the purchasers and the sellers agree that it is in their interest to proceed with the project. It is the role of the regulator to determine that the risks of the project are not unduly born by interests that are not parties to the agreement, namely the consumers.

All of the generation companies mentioned in the preceding section would have the right to sell their power and capacity to the Holding Company based upon the pricing approved by the PUA in the Purchase Power Agreements.

Performance-based regulation

For the past thirty to forty years, regulators (public service authorities) have been monitoring utilities by either cost-of-service regulation (COSR) or performance-base regulation (PBR). Using COSR, regulators would perform prudency audits to review the justification of various types of expenditures in order to determine if the funds were invested wisely and the regulated operations were being run efficiently. Tariffs were determined on a basis of costs of providing the service. Such costs would include depreciation, and a rate of return on property, reflecting actual cost of debt, and on equity sufficient to attract investment capital.

As discussed above, the use of the power purchase agreements will accomplish much of what is provided by COSR. PBR, as an alternative regulatory process, prescribes the outcomes to be achieved rather than focusing on the step-by-step processes to which business must comply. This will allow investors in the generation function to take different approaches to achieving the outcomes or performance targets. It will also allow the PUA to better monitor the monopolistic activities of the IEC such as transmission and regional distribution. The ability to measure, monitor, and project key reliability and service related metrics is critical to successfully managing operational and financial results, whether these are required by the PUA, mandated by investors, or requested by the utilities' customer base. PBR is vastly more flexible than statutory legal requirements that is known as "black letter regulation". Highly detailed black letter regulation is a very meticulous approach to reform and is not a recommended method of accomplishing the objective of a suitable regulatory situation. Performance-based incentives have attempted to be more comprehensive in nature, including such parameters as price stability, service

reliability, quality of service, promotion of energy efficiency, and environmental protection. PBR is the one area where price stability could be obtained; this is extremely important since increasing rates of return in order, to attract investors, will have the opposite effect.

Independent Distribution

Large real estate developers have requested that they be allowed to download high voltage electricity from the distribution system (22kV) and build their own distribution system throughout their real estate projects. Also, kibbutzim have shown an interest into gaining entry into this business. The consultant believes that such activities should be licensed by the PUA if the potential licensees can demonstrate that they have the technical and financial expertise to accept such responsibilities. The IEC's distribution operations would provide back up services if these independent distributors fail in providing the necessary service and power to the retail customer. These Independent Distributors would be allowed to charge the distribution tariffs that the IEC would be receiving if it provided the service. After a year or two, the PUA would review the profitability of these new distributors in order to determine if their profits are excessive.

Conservation and cogeneration

During the two years that the consultants have been involved in the contract, there has been almost no discussion relating to the formation of a conservation program for the industry in Israel. This is understandable since most electric utilities plan in terms of selling their product and not in ways to reduce customers' needs. In the 2001 IEC Annual Report, there is no mention of the need for conservation. On the government side, The Department of Conservation at MNI has developed excellent ideas for conservation, but there is a sense, that there will be less attention given to this area in the future.

During the workshop, a discussion regarding cogeneration was brought forward; however, the IEC believes that the amount of energy from cogeneration would be approximately 250 mw and that the only approach to obtaining significant amounts of cogeneration is through operations that produce huge amounts of steam. They claim that Israel is not an industrial country and does not have companies that would provide the steam requirement. The MNI believes that there is, potentially, 1200 mw of cogeneration in the country.

The consultants believe that there is a significant role in the reform process for encouraging conservation and there maybe smaller applications of cogeneration that, in the aggregate, would been a significant source of new power. A country that is able to mandate that every residential building have a solar water heater should be able to encourage conservation and cogeneration.

In conclusion, one most stress the following: Every industry that has embarked on reform has followed a policy of initial change supplemented by refinement, if not redesign. In developing the Israeli reform agenda, it is worth bearing this in mind. **Regulatory reform needs to be reversible least actions taken are not successful.** The structure initially targeted need not be final, even as a long-term goal. Steps should be created, focused on ensuring that short-term issues are fully addressed, such as securing vital investments in certain areas. More complex and competitive markets can be developed and phased-in over time when there is significant surplus capacity.