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ROMANIA
STUDY OF OPTIONS FOR THE LONG TERM
STRUCTURE OF THE POWER SECTOR

Inception Report

November 16, 1995

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Central and Eastern Europe Regulatory Reform and Energy Sector
Restructuring Project

In cooperation with the World Bank

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November 16, 1995

Mr Dan Ioan Popescu, Secretary of State
Ministry of Industries
Government of Romania
Bucharest, Romania

Subject Study of Options for the Long Term Structure of the Power Sector
Final Inception Report

Dear Mr Popescu

Attached herewith we are pleased to submit the final version of the Inception Report This report reflects the input provided at the review meeting held on November 1, 1995 which was attended by all the Romanian counterpart team as well as representatives from the USAID, World Bank, EBRD, EU/Synergy We believe the review meeting was a useful and productive effort, insuring close cooperation among the project and counterpart team and providing all other representatives an opportunity to comment on the report

In preparing the final Inception Report the project team collectively reviewed and considered all the comments - both verbal and written - provided We have modified the report where there were factual errors or where key facts were omitted There were also a number of comments regarding the team's interpretation of or conclusions regarding the current situation In this regard, we have in most cases provided a rationale where there was a question of judgment In the case of legal interpretations our local lawyer has carefully reviewed all the comments, reexamined the laws in question where necessary and discussed his findings with the team's legal specialist There were also several specific areas of concern which have an important bearing on the scope of our work and which I will specifically address here

- 1) Consideration of Integration with the European Union and Requirements of the Energy Charter Treaty There was some concern whether the report



will address the implications of joining the EU on the energy sector. In this regard, it was agreed that the project will consider the implications on the options at a high level but would not go into a detailed review and analysis of all energy related EU directives as this is beyond the scope of the project. More specifically, the Inception Report now includes a separate section which identifies the critical issues which will affect the future of the power sector.

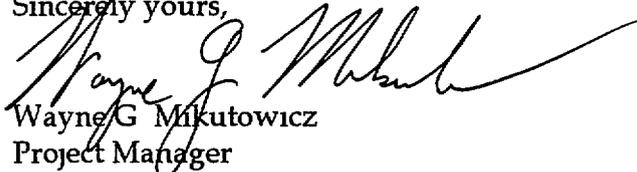
- 2) **Review of Draft Electricity Laws** There were comments regarding the use of the most recent version of the electricity laws and the reference to two strategy documents. In this regard, I would note that we recognize that the MOI strategy represents the official strategy for the country and we will rely on this document, as a starting point, in analyzing the future direction of the industry. With respect to the draft electricity law the version we were provided represented the most current at the time of report preparation. It is our understanding that the draft laws continue to be discussed and debated and hence remains in a state of flux with no final version available.
- 3) **Range and Scope of Comparative Country Experience** There were extensive comments regarding the number, relevance and depth of analysis of the restructuring experience in other countries. In this regard, I would mention that the countries selected were based on criteria identified in the Draft Inception Report. An in-depth analysis of these countries, as stated in the workplan was to be part of the next tasks of the project. The team has taken the comments about adding countries under consideration and may include an example from one of the Scandinavian Countries, if deemed appropriate.
- 4) **Appropriateness of Selection Criteria** The selection criteria presented in the Draft Inception Report represented an initial step in defining and explaining their use. As mentioned in the report, it was intended that this section of the report would present a basis for further discussions with the counterpart team, which we have now completed, and the results would be included in the next steps of the project. Accordingly, we have not modified the section on the selection criteria in the revised report.
- 5) **Impact of District Heating** It was agreed that the scope of this project does not include a heat study and that the treatment of heat issues will be limited to the CHP plant gate and the allocation of costs within these boundaries. Accordingly, the treatment of heat laws and heat pricing is beyond the scope of the Inception Report.
- 6) **Tariffs** There was criticism of the price section of the report. This section has been modified after discussions with the MOF and a review of their

written comments It was also agreed that this is not a tariff study and that the treatment of tariffs in subsequent analysis would be handled on a directional basis This would include level of tariffs, cross subsidies, and implications for uniform tariffs under alternative options

Finally, I would like to note that there were a number of comments concerning the level of analysis in the Draft Inception Report and the extent of involvement of Romanian specialists in the project In this regard I would like to point out that the current activities of the project involve the analytical tasks and that the Inception Report was not intended to be an in-depth analytical document but an assessment of the current situation The project team is also utilizing a number of Romanian specialists with expertise in law, power sector planning, and the fuel sector which have been invaluable in providing insights and information used in the Inception Report

Given the above considerations and the revisions to the draft inception report, there should be general agreement as to the direction of the next steps in the project We feel the review meeting on November 1 represented a significant milestone in the project from both a technical and cooperative point We look forward to continued interaction with the counterpart team as discussed in our follow-up meeting on November 3 By proceeding in this manner the success of the project is assured

Sincerely yours,



Wayne G Mikutowicz
Project Manager

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Table of Contents

I	Introduction	1
II	Legal Environment	4
	A Existing Legal Framework - Electric Sector	4
	B General Laws Affecting Private and Foreign Investment	7
	C Current Legal Constraints on Cogeneration and Independent Power Production	10
	D Existing Treaties and Power Supply Contracts with Neighboring Countries	11
	E European Union Rules and Proposals	13
III	Regulatory Environment	15
	A Regulatory Institutions	16
	B Price Regulation	17
	C Investment	20
IV	Analysis of Proposed Electricity Laws	21
	A Analysis of Draft Laws	21
	B Analysis of Proposed Regulatory Structures	22
V	Power Sector Restructuring Models	27
	A Transformation - Global Electric Sector	27
	B Criteria for Analyzing Alternatives	34
	C Relevant Considerations with Respect to Romania	36
	D Existing Commitments and Covenants to Lending Agencies	37

VI	Technical Constraints	41
	A Import - Export	41
	B CHP Plants	42
	C Industrial Cogenerators and IPPs	43
	D General Technical Considerations	44
VII	Implementation of the Terms of Reference (TOR) and Workplan	46
	A Issues Affecting Execution of the TOR	46
	B Impact of Current Findings on Completion of the Work	47
	C Next Steps	47
	Appendix 1 - List of Meetings and List of Documents	48
	Table of Acronyms	55

I Introduction

This study is undertaken in partial fulfillment of the conditionalities for the Government of Romania (GoR) with respect to the World Bank loan to Regia Autonoma de Electricitate (RENEL). Overall responsibility for the study rests with the Council for Coordination, Strategy, and Economic Reform (CCSRE), while the Energy Division of the Ministry of Industry (MOI) has responsibility for day to day management of the study. The objective of the study is to assist the GoR in defining a structure for the power sector which would be the best suited to achieve its policy objectives and to define the legal and regulatory framework most appropriate for that structural option.

Sector restructuring differs from corporate reform in that the entire industry is assessed with regard to the interrelationship among its various institutions and entities with the purpose of enhancing their commercial and market orientation thereby promoting competition which will result in improving overall industry performance and the efficient use of resources. Corporate reform focuses on the transformation and organization of a single company. As such, it is only a part of the sector restructuring process.

The overall objectives of the GoR's policy are to improve the efficiency and reliability of the sector, and to meet the demand for electricity in the most economic manner, while minimizing negative environmental impacts. The GoR will achieve these objectives by

- Implementation of a gradual and fundamental reform to the sector organization and its legal and regulatory framework, to create the conditions for effective competition and the participation of independent operators mainly in energy production
- Adaptation of the sector institutions to a market oriented economy
- Adaptation of least cost investment programs
- Implementation of sector pricing policies which would assure sector viability and provide incentives for private sector participation
- Interconnection with UCPTE to participate in the regional electricity market and a commitment to full membership in the European Union (EU)

- Implementation of measures to stimulate efficient use of electricity and integrated resource planning, based on system wide optimization, as well as measures to improve autonomy and financial viability of the sector entities
- Implementation of measures to meet Romania's obligations under the Energy Charter Treaty

The execution of this study is funded by United States Agency for International Development (USAID) under a contract with Bechtel International, Inc. A project team comprised of Bechtel and its subcontractors Arthur Andersen, Pierce, Atwood, Scribner, Allen, Smith and Lancaster, and National Economic Research Associates was assembled to conduct this study.

The study commenced on July 14-15, 1995 with an initial kickoff meeting in Bucharest which was chaired by the CCSRE and included representatives of the World Bank, USAID, RENEL, and the GoR, including representatives of the Ministries of Industry, Finance, Science and Technology, and the Bechtel project team. Subsequent to this meeting, the project team returned to Romania on September 11 to commence work on the study. The initial efforts by the project team are presented in this report, which is the first required deliverable under the workplan.

The purpose of this Inception Report is to provide a detailed review of key factors currently affecting the sector and the implications for the execution of the balance of the Phase I workplan. It also incorporates the project team's review of various restructuring models in other countries which may be considered relevant to Romania. The determination of the specific set of models from this group that are most applicable to Romania will be accomplished in the next step of the project. Accordingly, the timely review of this report by the Review Committee and subsequently the Interministerial Committee will help ensure that the project team has correctly interpreted the current situation and that all parties concur as to the findings of the report in order to establish a common basis for the team to complete the Phase I work. In developing this report, the project team endeavored to meet with relevant parties and obtain and review relevant documents. A list of all

persons contacted and source materials referenced in the preparation of this report is included in Appendix 1

The balance of the report will address the following

- Summary and assessment of the current legal and regulatory environment, an assessment of proposed legislation, and an assessment of existing treaties and power supply contracts with neighboring countries,
- Summary of power sector restructuring models being considered or implemented in other countries which may be relevant to Romania,
- Summary of current corporate reform efforts under way in Romania,
- Summary of possible technical constraints to restructuring, with particular reference to cogenerators, and
- Implications of the consultants' initial findings for the execution of the balance of the Phase I workplan

II Legal Environment

A Existing Legal Framework - Electric Sector

RENEL, a regie autonome (R A), owns and operates the state's electrical generation, transmission and distribution networks and is required by law to serve the public. It is the single electric utility for the country and is in all material respects a vertically integrated monopoly. RENEL is the sole buyer of electricity generated by third parties, and the sole provider of electricity to end users.

This section provides a summary of the legal situation in Romania with respect to

- Licensing,
- Investment,
- Pricing, and
- RENEL operations

A 1 Licensing

System demand has decreased by approximately 30% since 1989. As a result of this condition and given the legal impediments to private investment in the sector discussed below, there has been little need, to date, to address the issue of how new projects (public or private) are approved and licensed.

There is no apparent licensing procedure for independent power producers (IPPs) or self-generators. As with RENEL projects, however, if a non-RENEL entity (IPP or self-generator) sought to build a new generation project, Cabinet Decision no. 623 of 1993 on fuel use would prohibit that entity from building without the approval of the Romanian Agency for Conservation of Energy (ARCE), an arm of the MOI. Aside from the need for ARCE approval, there is no licensing procedure for IPPs or self-generators.

A 2 Investment

If any new projects were proposed by RENEL, it has indicated that, pursuant to a 1980 investment law (9/1980), it would submit to the appropriate ministry (1) an opportunity study, (2) a pre-feasibility study, then (3) a feasibility study to the MOI,

then to the Ministry of Finance (MOF), for approval. It is difficult to determine how much of the law currently remains valid. Additionally, after the initial draft of this report, Cabinet Decision no 592 of 1993, as modified by Cabinet Decision no 761 of September 6, 1995, published on October 25, 1995, sets forth provisions relating to approval of regulations regarding procedures to organize bids in the field of investments. Under the regulatory scheme provided for under these Cabinet Decisions, bids are organized for investments totaling over 500 million lei, international bids have to be organized for investments totaling over 12 billion lei.

A 3 Pricing

Electricity prices are regulated by the government pursuant to Article 48 of law 15/1990 (and supplementary government decision 45/1994). There are six Cabinet Decisions on pricing (45/1994, 206/1993, 179/1993, 418/1993, 380/1993, 776/1991). RENEL, MOI and the MOF customarily negotiate rates, now in accordance with World Bank loan requirements, then enter into a "note of re-negotiation" confirming the rate increase. This process is described in greater detail in Section III B. There is no law or decision indicating what factors are to be examined in this process, the process does not involve any public hearings, and there are no substantive grounds provided in any law or Cabinet Decision to support an appeal of rate decisions by any party.

A 4 RENEL's Operations

There are several laws which influence RENEL's operations and business. According to law (66/1993), the president of RENEL is held accountable to the MOI for achieving certain performance targets for RENEL pursuant to a management contract. (See also Article 135(5) of the Constitution, which provides that relations between all R A s and the government are governed by contract). Currently, there is no contract in place, the MOI and RENEL are in the process of drafting such a contract. The contract includes both technical and financial performance targets. Pursuant to a decision by its Board of Administration, RENEL is in the process of preparing internal performance contracts with its major business units to make them more responsible for technical and financial losses, and to set specific targets for each.

The Cabinet Decision creating RENEL (1199/90) gives RENEL the responsibility to provide power to the whole country. When a customer, such as a self-generator, leaves the system, the law is unclear as to whether RENEL must provide stand-by and back-up service. RENEL has not yet promulgated any special tariff or policy to deal with this issue. However, there are standard tariffs to provide standby and backup for self-generators who remain on the system. RENEL customarily negotiates annual contracts with such self-generators in which the amount of electricity, if any, used by the self-generator is listed in monthly increments. If the company uses more than the contracted amount for that month -- due, for example, to a boiler breakdown and the need for back-up service -- then the generator must pay a higher price for the electricity than had been negotiated with RENEL.

Electricity from self-generators currently constitutes only 3-4% of RENEL's electrical energy mix. No law requires RENEL to buy electricity from third parties. Sales occur as a result of informal negotiations with RENEL, with the participation of relevant ministries (MOF and MOI) if agreement cannot be reached between RENEL and the seller.

Several former divisions of RENEL (e.g., repairs) have recently been spun off into S A s (or commercial companies, set up under Law 15/1990, with partial state capital, some of which are engaged in the privatization process) pursuant to Cabinet Decision 846/1994. RENEL is in the process of removing certain other non-core activities from its organization, forming cost and profit centers within the organization, and attempting to improve its collections.

Pursuant to Cabinet Decision 236/1994 and Cabinet Ordinance no. 41 of 1995 (which has not yet been adopted by the Parliament), and consistent with efforts to improve RENEL's internal management performance, RENEL must shut off the power to any customer that has not paid its bill within 60 days of the due date.

* * * * *

The existing legal framework for the electric sector thus maintains RENEL as a vertically integrated, national monopoly. Practices with respect to rate setting, other regulatory review, sales by non-utility generators and similar issues are not clearly defined under current law, either with respect to the appropriate regulatory

authority nominated to deal with these issues or the applicable legal or regulatory standards for decision making. Nonetheless, RENEL and other participants in the electric sector (regulators, other generators) have worked out a series of procedures that fill in these gaps. Restructuring of the sector, in part, must include formal structures to replace unwritten practices.

B General Laws Affecting Private and Foreign Investment

Romania follows a civil code similar to other countries in the area of corporate and commercial law. Its corporate law, for example, follows the French model, with corporations (S A s), limited partnerships, and other typical business organizational forms (law 31/1990). A bankruptcy law (64/1995) has also recently been enacted, largely following the US model, and a proposed environmental law, again based on western models, is currently before Parliament. There are, however, certain significant legal impediments that affect private investment, including in the electric sector, as explained below.

B 1 Foreign Ownership and Investment

First, no foreign ownership of land is allowed pursuant to the Romanian Constitution, Article 41 and law 18/1991. Currently, there is a debate in the legal community as to whether this Constitutional provision merely prohibits individual persons from owning land, or legal entities, such as corporations, as well. Given uncertainty in this area, this restriction potentially affects (1) foreign ownership of new electrical plant, (2) loans and security agreements with RENEL or other borrowers in the sector to the extent that the creditor, if foreign, cannot acquire mortgaged property in foreclosure, and (3) even the future privatization of RENEL itself, to the extent foreign shareholders of RENEL are deemed to "own" real property. While, pursuant to law, companies organized under Romanian law and headquartered in Romania are deemed local, even if their capitalization is 100% foreign, the Supreme Court of Romania has recently ruled that Article 41 bars ownership of real property by such a company, adding to the ambiguity on the issue. See Decision no 831 of March 25, 1994 (Supreme Court of Justice, Civil Section), published in the legal review "Dreptul" no 2 of 1995.

The Constitution (Article 135) also forbids the sale of any state asset, as opposed to patrimonial assets. The issue of what part of RENEL's property constitutes inalienable state property and what is patrimony has not yet been decided. Article 135 indicates that "waters with hydropower availabilities" are inalienable. Beyond that limitation, however, there is no guidance in the Constitution or other law, nor is there a procedure for making such determinations. We understand that a draft law is currently in preparation to resolve these ambiguities, but it has not yet been adopted by either House of Parliament. RENEL has suggested that, along with hydroelectric property, nuclear plant and the distribution system, at a minimum, would probably be deemed state assets, with the rest of its assets constituting patrimony. RENEL has in effect already acted on this premise by its spin-off of non-core repair and engineering assets to S A s which could be privatized.

Romania's foreign investment and tax laws remain fluid. Though Romania generally encourages foreign investment, it recently enacted a customs duty, and the 1994 tax code places a surcharge on foreign investors under some circumstances (Cabinet Ordinance no. 70 of 1994). The surcharge is an additional tax of 6.2% on foreign companies operating through a permanent establishment, on top of the basic profits tax of 38%. Bilateral tax treaties eliminate the surcharge under appropriate circumstances. Ongoing Parliamentary activity may result in modification or elimination of the surcharge, as of this writing, however, the 6.2% surcharge remains in effect. Stability in this area and removal of discriminatory tax burdens will enhance foreign investment.

B.2 Concessions

Although concessions for state assets (including land) for limited terms (e.g. 20 years) are allowed under Article 135 of the Constitution, see also Law no. 15 of 1990, there is no law specifically regulating how such concessions are awarded, and by whom, in the electric sector. A general Cabinet Decision on concessions (no. 1228 of 1990) is designed more for small businesses, and would be difficult to apply in the electrical context. Specific concession laws or regulations, however, have been enacted in other contexts (e.g., Cabinet Ordinance no. 30 of 1995 regarding the Concessions for Roads, providing a 49 year term), and there is a specific concession law in the oil sector that may provide guidance.

B 3 Judicial Access and Administrative Law Disputes

Judicial access by investors is impeded by a tax of 10% of the total amount of damages sought, which must be paid to the court by a plaintiff, even if the case settles prior to judicial decision. Hence, the plaintiff must always pay this charge unless it wins by judicial decision. Arbitration is allowed as an alternative, enforceable in the court, with the court filing subject to the same 10% rule. "Moral" or punitive damages are an evolving concept in Romania, and potentially available even in commercial and contract disputes.

Administrative law disputes are regulated by law 29/1990, which flows from Article 48 of the Constitution. The Constitutional Court has decided that the court cannot generally repeal a law or administrative rule, such as a general decree regarding electric tariffs. The court does have the power to strike down a particular administrative act, such as a specific tariff decision, if the decision violates a general rule. The court can also base its determination that a specific decision violates the law based on the illegality of a general rule, but that determination will not apply to any other individual. Investors dependent on administrative decisions (such as rate orders) thus have limited legal recourse.

B 4 Currency Transactions

With respect to currency transactions, pursuant to law 11/1994, the Romanian National Bank has issued rules prohibiting anyone from opening a foreign bank account without the approval of that Bank. This permission is difficult to obtain and must be renewed annually. Lei may not be transferred directly out of the country and conversion of lei to hard currency must occur in Romania. At present, there is no currency futures market in Romania or in lei in overseas markets. These restrictions may create challenges in the future for major, capital intensive foreign investments. Conversion of lei into hard currency in Romania poses no immediate liquidity problems.

* * * * *

Romania has taken several critical legal steps to attract private and foreign investment in its economy. Nonetheless, it is clear that, whatever structural options are ultimately selected by the government for the electric sector, if private

investment is to be a component of that strategy, additional modifications and clarifications in the law will be necessary, most particularly in the area of property ownership and currency transactions

C Current Legal Constraints on Cogeneration and Independent Power Production

Successful industrial cogeneration (generation of electricity and thermal energy by an industrial enterprise) and independent power production (generation of electricity only), with sales of electricity to the local electric utility or another party (hereafter, collectively "cogeneration") generally require a legal and regulatory infrastructure that supports five core capabilities

- Grid access by the cogenerator to a competitive market in which to sell, or a structure that regulates the monopsony of the local electric utility to permit sales to the local utility at cost-effective prices (i.e., prices below the utility's marginal costs),
- Standards and procedures for establishing the price of electricity sold by the cogenerator to the electric utility, in the event the two cannot agree on price,
- Standards and procedures for establishing wheeling and transmission charges if the cogenerator sells to a party other than the local utility,
- The ability of the cogenerator to obtain electricity from the local utility on a fair and non-discriminatory basis (for service when load exceeds self generation capacity, and during scheduled and unscheduled outages), and
- The ability to confirm sales wheeling and service agreements in binding, long-term written contracts

As the review of existing and proposed Romanian laws and regulatory structures demonstrates (see Sections II, III and IV), in general, few of these requirements for successful cogeneration are met. The current legal regime

- Does not guarantee grid access by third party generators (but does not expressly deny access, either),
- Does not establish a market for competitively priced electric cogeneration, either with RENEL or other potential buyers (though it does not prohibit sales by a cogenerator to a third party),

- Does not establish wheeling tariffs and procedures for transmitting cogenerated electricity,
- Is unclear on the issue of fair, non-discriminatory back-up service by RENEL to cogenerators, and
- Is neutral with respect to long term contracts (but does not prohibit them)

A recent Order from MOF (519/1995) has established the price to be paid for all purchases by RENEL of power from third parties, however, sellers will need assurance regarding the method of setting prices over the life of their investments

The proposed MOI and RENEL draft laws address some, but not all, of these issues, and neither resolves them in a manner that is fully conducive to cogeneration. For example, both drafts contemplate a bid market for new generation in which cogenerators can compete. Neither, however, is clear in establishing the criteria for a winning bid, nor do they permit direct cogenerator sales to non-RENEL third parties. In fact, the RENEL draft makes it clear that RENEL shall be the sole buyer of electricity at wholesale and the sole seller at retail to end users. Neither draft law addresses back-up sales to cogenerators by RENEL. Both existing laws and currently proposed structures require substantial revision in order to promote cost-effective cogeneration.

It has been reported that, despite the lack of a well developed legal framework to support a cogeneration industry, a number of Requests for Proposals have been released by RENEL and have attracted the interest of investors even though the appropriate legal and regulatory framework has not been completely developed to provide for these transactions.

D Existing Treaties and Power Supply Contracts with Neighboring Countries

Article 11 of the Romanian Constitution affirms the duty of the State to obey its treaties, and provides that treaties ratified by Parliament become a part of national law. Any state treaties regarding bilateral or multilateral trade in electricity would be subject to these provisions. Pursuant to MOI order 1556/1994, RENEL is

authorized to import electricity when needed to meet demand, RENEL is permitted to export only if the domestic market is satisfied first

Currently, very little importation or exportation of electricity occurs, since Romania has reached price parity with its neighbors and is synchronized at only a few of its interconnections, moreover, Romania and most of its neighbors have suffered substantial decreases in demand since 1989. Net imports in 1994 were 0.7 TWh, or 1.3% of total electric energy resources, compared to peak imports of over 9 TWh in 1990. In the recent past, some electricity exchanges have occurred through a barter process.

Romania is now synchronized only through its interconnections with Serbia. It has no short or long term purchase or sales contracts with Serbia or any other countries. Only small, non-commercial stability exchanges are taking place with Serbia, Montenegro, Macedonia, Albania, and Greece. Romania has an existing technical agreement with the former Yugoslavian republics and Greece for a test interconnection, but the agreement is not a commercial sales contract.

Until 1994, Romania was synchronized with and a member of the Interconnected Power System/Central Dispatching Organization (IPS-CDO). It is still a member, but is no longer synchronized with that grid. Romania now is taking steps to achieve membership in the Union for the Coordination of Production and Transmission of Electricity (UCPTE), the western European grid, which offers prospects for improved trade. One way to achieve this would be by becoming part of CENTREL (a technical group of Poland, Czech Republic, Slovakia, and Hungary, which is relatively close to achieving UCPTE membership), but Romania has been rebuffed to date. Another route to join UCPTE is through its interconnections with Serbia, a member (along with Greece) currently operating electrically isolated from UCPTE due to the war in the former Yugoslavia. Access through that route will require re-establishing the interconnections which have been inactivated by the war. Romania could also achieve membership through its interconnection with Hungary after CENTREL becomes part of UCPTE. Additional discussion of technical constraints is in Section VI.

Ultimate membership in UCPTTE and growth in electricity trade with neighboring states is dependent on improving market conditions and resolving long-standing political issues

E European Union Rules and Proposals

The GoR has made a commitment to comply with European Union standards, a prerequisite for eventual application for membership. Romania has achieved associate membership status already, along with several other Eastern European states.

Existing and proposed EU rules concerning the electricity sector all likely entail significant changes in the Romanian electricity sector, particularly in the long term. In particular, GoR's decisions regarding the future shape of the electricity sector will have to be closely aligned with current and future EU policies on electricity and competition. The EU proposals are in the draft stage. Despite this uncertainty, however, certain features of the new EU model seem clear, although EU members are divided as to how some of the proposed rules would be implemented and enforced in practice.

- **Third-Party Access** The right of large (over 100 Gigawatt-hour/yr consumption) industrial customers to shop for their electricity supply has been strongly supported by industrial buyers and some member states.
- **Electricity Transit** Utilities may be required to offer non-discriminatory access to their transmission systems for import and export purposes, and cross-border trade will be encouraged (Council Directive No. 547/90/EEC of 29 October 1990).
- **Tariffs** An EU Commission objective is that prices should be as reflective as cost-of-service as possible, with no cross-subsidization or other distortive features (Council Recommendation No. 924/81/EEC of 27 October 1981).
- **Transparency** Utilities are currently required to publish all industrial tariffs on a regular basis (Council Directive No. 377/90/EEC of 29 June 1990).
- **Investment** The European Energy Charter will require a relatively open, level investment regime in the energy sector (European Energy Charter).

- **State Aid for Industry** Restrictions on the level and frequency of state aid to ailing companies will be deterrents on future bail-outs of uncompetitive industries (mainly affecting large Romanian consumers of electricity and not RENEL directly)

In the next steps of the project the implications of the above will be considered in the selection and evaluation of the restructuring options

III Regulatory Environment

A regulatory framework should clearly delineate the responsibilities of major institutions in the regulated sector. The essential elements of a regulatory framework are

- Formulation and implementation of the government's electricity policy, consistent with overall energy policy,
- Economic regulation of the electricity enterprises, and
- Oversight of the electricity enterprises, which includes the consideration of shareholder influence

Any regulatory framework has the greatest chance of success when these three functions are carried out by different institutions consulting with one another as appropriate. Stability, and therefore predictability, in the system comes from the checks and balances that result from the separation of the above functions. This section addresses three aspects of economic regulation: regulatory institutions, economic regulation, and oversight of investment in plant. Economic regulation means price setting, including consideration of critical non-price factors, especially quality. Other necessary kinds of regulation - safety, health, environment, etc - are important but usually performed by institutions other than the price control agency.

Romanian electricity regulation derives from a classic command-and-control structure, with government ministries formulating policy, setting prices, approving investments and making frequent management decisions, large and small. Given the near-total state ownership of the sector, it is not inappropriate that the government regulate its principal electricity holding, RENEL, directly. However, this approach will need to be re-examined carefully if the goal of introducing competition and more private (and foreign) capital into the sector is to be realized. In particular, where economic regulation is concerned - overseeing prices, investment and trade in the sector - the current structure will have to be transformed into one that is carefully defined, transparent, and recognizes the balance that needs to be struck among all stakeholders in the electricity industry. The key stakeholders are (1) electricity consumers, (2) electricity producers and suppliers, (3) investors, and (4) the GoR.

A Regulatory Institutions

Oversight of RENEL is currently concentrated in the MOI and the MOF. Industry strategy, organization and investment are dealt with mainly by the MOI, prices and financial management of RENEL are overseen by the MOF. In practice, there is, however, a good deal of overlap between these two ministries, and both ministries must be consulted on particularly significant issues. Regular consultations occur on various, lesser issues as well. MOI and, to a lesser extent, MOF, play a mediating role in the electricity sector, as in the case of relations between RENEL and other generators.

Within the MOI, there are five separate directorates responsible for various aspects of the electric industry and include (1) Energy, (2) Restructuring, (3) Strategy, (4) Reform, and (5) Economics-Finance, with the Energy Directorate taking the central role in setting policies for the power sector.

The Pricing Directorate at the MOF administers pricing for "goods of national importance," including electricity and heat. This directorate plays a central role in complying with GoR agreements with international lenders that average electricity prices meet certain targets, and that RENEL end the cross-subsidization of household consumers by industrial and commercial customers. (The subject of price regulation is discussed in greater detail in Section III B.) MOF also allocates debt guarantees when necessary and available.

The Regie Autonome Directorate at the MOF oversees the eight R A s in Romania, including RENEL. The Deputy Director General of this directorate also sits on the RENEL Board of Administration. The primary focus of R A oversight is to ensure corporate financial viability, including management of debt.

Several other ministries play a part in overall GoR regulation of the electricity sector, including the Ministry of Water Resources, Forestry and Environment, the Ministry of Science and Technology, the Ministry of Justice, and the Ministry of Labor and Social Protection, but economic regulation is primarily the responsibility of the MOI and the MOF.

The government has put into place an inter-ministerial group, led by the CCSRE. The interministerial group plays a coordinating role in the economic restructuring process (and to oversee this study), but this group does not have a direct function in electricity pricing and investment areas.

B Price Regulation

Price regulation of RENEL resides in the MOF and MOI. Since the agreement with the World Bank to maintain certain minimum average price levels, the GoR is committed to maintain the lei-denominated average price which would conform to the dollar-based target of US\$50/MWh (inclusive of VAT, currently US\$42.4/MWh prior to VAT). This price level is designed to cover the costs of production, transport, and distribution of energy to end users, the cost of energy sector development, and a profit rate. According to the Warranty Agreement ratified by Government Ordinance no. 41 of 29 August 1995, it is the obligation of GoR to periodically adjust the prices for consumers, following the criteria accepted by the World Bank, if essential changes occurred to the level of international prices of main fuels (coal, natural gas, heavy oil) used to generate power. MOF is responsible for electricity price negotiations and their compliance with the criteria accepted by international financial institutions in the loan agreements approved by GoR. In accord with World Bank loan requirements, in the future, price changes will be made twice a year, commencing in 1996.

The intention of the World Bank agreement is to mandate a change in local prices due to currency depreciation. The lei price will be adjusted to reflect total depreciation of the currency since the last adjustment. In practice, price changes have been less frequent (over the past two years, rates have changed annually), due to a desire to minimize the impact of rapidly escalating electricity prices on Romanian consumers, especially at the household level.

The tariff department at RENEL is responsible for developing a tariff schedule which aims to meet the \$50 target, and negotiates with the MOI for approval. Once RENEL and MOI agree on a tariff schedule, a written proposal is submitted for

approval to MOF. The MOF then studies the proposals and either approves them or requests changes in certain areas.

In the past the rate of price increases for residential customers has been less than that for industrial and commercial customers. As of the last price change in June 1995, and for subsequent price changes, GoR has agreed with the World Bank that the cross-subsidy for residential customers will not be widened further and will be phased out by 1999. (The subsidization of household customers by the government in the form of direct compensation to RENEL for its discounted price to households ceased in 1993.) In addition to the current practice of having the industrial and commercial classes subsidize residential electricity prices, there are some indications that the electricity sector as a whole subsidizes district heating, in which RENEL also plays a significant production and transport role.

It should be noted that the MOF also approves prices for thermal energy (i.e., heat), social concerns have led to low prices for household customers in the district heating sector as well. Thermal energy price issues are important because of the volume of heat supplied by RENEL and the magnitude of potential impacts on consumers which would result from elimination of cross subsidies from electric sales. The role of the heat sector on future possibilities for electricity regulation will be generally assessed in the options report.

RENEL's electric tariff schedules, differentiated by voltage level, incorporate time-of-use (TOU) and seasonal rates, binomial (demand and energy) and monomial pricing formulae, and others. But RENEL's flexibility in designing tariffs is considerably constrained by (1) the MOF's treatment of the World Bank's floor price target as a price cap, (2) the political constraints on household electricity and heat prices, and (3) the lack of reliable cost data by customer class and by activity (i.e., generation, transmission, and distribution).

The average price of electricity which results from the formal negotiation process is not necessarily reflective of the cost structure of RENEL, for example full depreciation is not included in the costs and in the tariffs. Furthermore, the structure of rates among the customer classes is driven by the two cross subsidies

mentioned above rather than by cost-of-service and demand elasticity measures. The consequence is that investment, both rehabilitation and new, has been limited to very low levels.

There are a number of additional pricing issues which will bear further consideration as part of the options study:

- Rate build-up, which relates to the currently fully bundled nature of RENEL rates (i.e., they are not broken down into their component parts of production, transmission, distribution, and supply),
- Purchases from cogenerators, and
- The price to be paid by RENEL for nuclear power (from a separate entity subsequent to the commissioning of Cernavoda)

Unbundling of electric rates will depend on a comprehensive cost-of-service analysis, and would be necessary in certain restructuring scenarios. Similarly, the goal of increasing the role of cogenerators will require formal trading guidelines which as yet do not exist. At present, the price of purchased power has been approved by MOF for three voltage levels (high, medium, and low) to which sellers deliver power to the RENEL system (reportedly, as a percentage of the average retail tariff at each voltage level). In the future, sellers and the buyer will need to understand how that price will be set over the long term.

The price to be paid by RENEL to a new entity to be established to hold the completed and operational nuclear power plant will have a significant impact on the cost structure of RENEL. The price (and which costs it is designed to cover) is to be negotiated between the parties, however, the principles and ground rules guiding that price negotiation have not yet been set forth.

The present methodology for calculation of average price and allocating rates to customer classes is based on an analysis of RENEL's cost structure. Based on MOF projections for fuel costs, currency exchange and inflation rates, and other such inputs, RENEL develops an annual budget (including fuel, variable operating costs, depreciation, taxes, profit) which is submitted to MOF for approval. Certain of its costs (i.e., depreciation and the development tax – both of which will be discussed in

greater detail below in Section III C) and allowed profit margin may have to be adjusted downward by RENEL in an effort to match total costs with total expected revenues calculated based on the price level determined according to the criteria accepted by the World Bank and RENEL

C. Investment

Prior to recent external borrowings, RENEL has had four sources of funds for electric sector investments profits, depreciation (or internally generated cash), a development tax, and state budget allocations for the nuclear power program

The development tax is calculated as a percentage of the cost of operations and is included in the average tariffs for the industrial and commercial customers The development tax proceeds, the major funding source for RENEL's investment program, are deposited into a restricted account controlled by the MOI who remits funds back to RENEL for approved projects Pursuant to applicable law, government approval is needed for the expenditure if the total amount of the project is over 4 billion lei If the total is less than 4 billion lei, then approval is required only from the MOI If RENEL uses internally generated cash, it needs no governmental approval, but these sources are small and insufficient to cover the required level of investment expenditure

The investment planning cycle has been compressed to an annual basis, in which, each year, capital budget requirements are reconciled with the average price targets and the development tax level through a process of negotiation between RENEL and the MOI and MOF Shortfalls in development tax receipts, because of customer non-payment, result in reduction of funds available for investment as the year goes on RENEL's capital budget is also at risk due to inflation and currency depreciation

IV Analysis of Proposed Electricity Laws

A Analysis of Draft Laws

Both the MOI and RENEL have submitted draft laws for the electric sector for discussion and debate in Parliament. The MOI has also developed an overall strategy for the power sector, "The Strategy for Restructuring and Development of the Electric and Thermal Power Sector for the Period 1995-2000". The MOI strategy was, in part, based on the RENEL multi-volume corporate strategy adopted by RENEL's Board of Administration in August 1995. The draft laws reflect the underlying strategies.

Both the MOI and RENEL drafts are thoughtful and thought-provoking approaches to complex legal, regulatory, political and social issues. A review of the two strategies reveals that each approach is very similar to the other, despite certain significant differences. Neither approach proposes a radical departure from existing structures, at least in the near term, instead, both codify major existing procedures and practices in the electric sector.

Fundamental similarities between the two draft laws include the following:

- Each contemplates a single, national vertically integrated electric company with sole responsibility for transmission and distribution functions, and major participation in generation. However, in subsequent letters to the World Bank and the EBRD the GoR recognizes that the final structure will depend on the outcome of the Options Study.
- Both envision RENEL as that authority.
- Neither contemplates a fully independent regulatory authority for the sector. The MOI's plan would establish a new National Agency for Electric and Thermal Energy (National Agency), subordinate to the Prime Minister, RENEL, on the other hand, would maintain price control in a specialized agency within the MOF, with other regulatory functions handled by an "appropriate ministry".
- Both contemplate 100% state ownership in RENEL at the outset, and gradual privatization of the company, with banks and other large institutions holding most of the privatized shares.

- Both seek to encourage private and foreign investment in the sector

The plans also differ in several critical respects

- RENEL's draft explicitly names RENEL as the exclusive purchaser of electricity and the exclusive seller to end users (single buyer model)
- MOI's proposal appears to require regulatory authorities to make public, in writing, the basis for their rulings
- RENEL's draft grants RENEL the sole authority over import, export, and trade of electricity,
- RENEL's draft is more detailed in its description of RENEL's internal organization and management, even reserving substantial regulatory powers to itself, and seeks to clarify, preserve and strengthen its existing business plan (see Section V)

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Although both proposals assume a national company, it has been agreed that the structure of such a company will depend on the outcome of this study. Accordingly it is recognized that the final version of the electricity law will accommodate the final guiding principles as set out in the Terms of Reference, namely

- Separation of the roles of the State as policy maker and as regulator
- Demonopolization of the sector to create conditions for competition and participation
- Fair non-discriminatory access to the transmission grid to all producers
- Creation of an independent regulatory body to oversee the functioning of the sector
- Establishing the regulatory framework, including the principles of price setting at all levels of service supply

B Analysis of Proposed Regulatory Structures

Both the MOI and RENEL proposals for restructuring the electric sector were reviewed with regards to the proposed regulatory reforms. Each was analyzed against a number of criteria which are discussed in this section.

Clear and effective regulation is characterized by a number of common attributes, the most important of which are

- A clear statement and assignment of functions and powers to regulatory and policy making institutions and the regulated enterprise,
- An open (i.e., "transparent") method of regulation,
- A clearly defined license structure for enterprises,
- An effective and well-defined appeals procedure, and
- A balance between regulation and competition

A clear statement and assignment of functions and powers to regulatory and policy making institutions and the regulated enterprise Both the MOI and RENEL proposals are clear in assigning ratemaking authority. Both proposals also assign other specific regulatory power to an unnamed "appropriate ministry". In the MOI draft, for instance, these powers include the right to dictate fuel and technology choices, the duty to mandate fuel stock levels, oversight of state-controlled companies, and investment authority. Both proposals are ambiguous with regard to other assignments. For example, the MOI draft grants substantial authority to local bodies, which produces the potential for jurisdictional disputes over local siting and price questions.

Significantly, the RENEL draft delegates substantial regulatory powers to itself, via a management agreement. This approach resembles the "Contrat de Plan" that Electricite de France (EdF) signs with the Government of France every three years.

As noted, the MOI draft clearly defines the rights and duties of the responsible ministry and the envisioned National Agency. Although there is some overlap in areas such as energy conservation matters, the placement of the National Agency under the MOI makes it clear where the actual power would lie. This arrangement, however, may not serve to mitigate the potential for real conflict, since it introduces a new player into the mix. The MOI draft is less clear in its treatment of the regulated enterprises; it puts a heavy duty on the part of the enterprises to meet all customer demands for electricity and heat, but does not make it an obligation on the part of the regulatory institutions to ensure the financial viability of the companies in the sector.

The RENEL draft is clear in its treatment of the policy making and regulatory institutions and also provides for stronger provisions to ensure the financial viability of the enterprises

A transparent method of regulation Both strategies essentially propose a “cost-plus” style of price setting. No method of regulation is included in the MOI draft, which contains only vague mention of calculating prices on the basis of cost, including profit. The draft appears to require the National Agency to explain its decisions in public documents, which is a good mechanism for promoting the openness of the regulatory system. The RENEL draft embraces a rate-of-return methodology but is silent as to whether the regulatory authority must state the reasons for its orders or decisions.

The method of regulation will be of paramount concern to potential private investors in the electricity sector. They will be especially interested in the balance of financial risk, that is, the potential upside versus the risk of losing money (or making inadequate returns). In this context, it is important to design appropriate financial incentives for good performance -- and penalties for poor performance. Balance is the key. If the upside is too thin, or if the penalties are too severe, investors will not opt to invest in the Romanian electricity sector. While it is not necessary for a law to describe explicitly the incentive structure, neither draft addresses positive incentives.

A properly defined license structure for enterprises The MOI draft is unclear on this point. It provides for licenses, but also allows the state to approve operations in the electricity sector without a license. A troubling element of the MOI draft is the severe sanction of license revocation for even minor transgressions under the “task book,” a penalty that likely will deter potential private investors. The RENEL draft also requires licenses and is especially detailed on certain points, but also contains ambiguities (e.g., lacks clarity on events causing loss of license). The license provisions of each draft will benefit from additional revisions if private investment in the sector is to be encouraged.

An effective and well-defined appeals procedure The MOI draft law depends upon existing Romanian law to provide for an appeals mechanism (law 29/1990, on administrative disputed claims) The RENEL draft does not deal explicitly with appeals Both drafts merit more detail in this area, particularly in terms of defining standards from which appeals can be taken under Romanian law

The balance between regulation and competition Romanian policy clearly states that it is a national goal to promote competition in the electricity and heat sectors, as a central tenet of the restructuring strategy To help achieve this objective, the structure of the industry and the regulatory framework should be designed to create an environment in which real competition is possible In particular, price controls should be seen as a substitute for competition only in areas where competition is not possible or undesirable, as in the "natural monopolies" of transmission and distribution In other functions, it is generally more economically efficient, and certainly easier, to allow competitive market forces to discipline prices, encourage efficient production, and spark investment In competitive sectors, however, there is still a need for diligence on the part of regulators But the focus of the regulation changes from that of price control, to concerns about the level of competition (i.e., antimonopoly issues) in the restructured sector and exercise of market power

While both drafts present competition as important to the future Romanian electricity sector, they also contain numerous provisions that deter competition For instance, provisions for least-cost acquisition of generating resources are vague and have many loopholes (e.g., the ability in the MOI draft to dictate fuel choice) Likewise, RENEL's control of the transmission system is not balanced by regulatory powers that would ensure fair access to the network The lack of third party access inhibits the possibilities for electricity trading The concentration of powers and functions in RENEL (under its draft) is likely to have a similar deterrent effect on competition Romania's approach to competition, and in particular its thinking on the appropriate balance between regulation and reliance on market forces, should be the subject of serious analysis Clear guidelines in this area will be essential if the restructuring process is to move forward successfully, regardless of which restructuring option Romania selects Such an effort is even more important if Romania is to gain admittance to the European Union

From a legal perspective, an electric law should unambiguously set forth the principles established, clearly identify decision making responsibilities for both regulated and regulator, establish standards and an open process for that decision making, and be internally consistent and understandable. Details should be augmented by the decisional authority identified in the legislation. These principles should be applied to whatever option Romania selects -- either the options currently set forth by MOI and RENEL, or an alternative structure.

From a regulatory perspective, neither draft law requires major changes in the current arrangements. What the laws attempt to do is to codify the regulation of the Romanian electricity and heat sector *as it has evolved*. They advance similar regulatory strategies for incorporating licensed IPPs, local control of heat distribution, and formalize to some degree the treatment of electricity trading issues. This undertaking is one of considerable analytic effort, and should be commended for advancing national thinking on these issues.

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Even for the current structure of the industry, the drafts would need (as the authors recognize) considerable development to provide a proper legal framework for regulation. However, the electricity and heat industry has been evolving over time and it seems certain to continue to do so. Major efforts will be required in upcoming tasks on this project to incorporate regulatory approaches that would be appropriate for structural models not envisioned by either draft law, such as a more liberalized electricity trading environment and/or decentralization of the electricity distribution sub-sector.

V POWER SECTOR RESTRUCTURING MODELS

This section introduces a number of restructuring models for the electric sector that have been adopted in other countries around the world. The section also presents key selection criteria that can be used to screen alternative approaches to restructuring the electric utility sector in a country. Among the factors that will affect the range of choices for future restructuring will be the position of the Romanian electric sector at the outset of the next stage of reform and progress achieved toward implementation of earlier strategy initiatives.

A Transformation - Global Electric Sector

Romania is certainly not alone in re-examining the structural options for its electric utility sector. The worldwide trend in electric power industries is to attempt to improve their operation and performance through structural reform. Restructuring generally proceeds along a number of axes:

- Determination of the appropriate industry structure,
- Determination of who should maintain ownership and operational control of the industry assets,
- Determination of the form of regulation,
- Determination of the manner in which prices are set, and
- Determination of the extent of competition to be introduced to the system.

As the industry restructures itself, there are several industry models and regulatory schemes that are emerging. This section previews a number of models that have been adopted elsewhere, both within Central and Eastern European countries (CEEC) and in other countries around the world, that will be the subject of further analysis in the next phase of this project.

The focus of this section is on countries with either a distinct industry structure or where restructuring of the sector has been completed. The intent was not to present a description of the power industry in countries where no change is occurring. For

example, the team elected not to include the United States because its power sector is undergoing radical change. Hence there is no specific "U S" model. However, the U S experience does show that the current U S power sector structures are no longer relevant to current conditions.

The lessons learned from the experiences of other countries which have proceeded down the path of restructuring ahead of Romania may offer valuable insights with application to Romania. The salient features of these models and their variants will be assessed as part of this project in order to arrive at the set of options best suited to serve the needs of Romania as it undergoes economic transition.

The reasons for choosing the models previewed here from outside CEEC are

- Comparability of country size and/or state of economic development,
- Compatibility of reform objectives with those articulated by Romania,
- Similarity of industry structure prior to restructuring, or
- Exemplary nature of the restructuring program

The countries selected from the global market include

- **England and Wales** England and Wales moved from a government-owned vertically integrated electric system to a disaggregated model that split generation into three generation companies (two investor owned thermal companies and one government-owned nuclear), twelve joint stock distribution companies and one national transmission grid company (which is owned by the distribution companies). There is an electricity pool into which the generators sell their output and from which suppliers and large users buy electricity, leading to market pricing in generation. The reform objectives were to promote efficiency through competition and the introduction of a broader ownership structure. There is one regulator, the Director General of Electric Supply, who has responsibility to oversee prices, promote competition and protect customer interests in areas where natural monopolies remain (i.e., distribution and transmission). Tariffs outside the competitive generation market are set using price cap regulation.

- **Peru** The objectives of the GoP were to introduce competition, attract private capital, maximize privatization proceeds and provide for a reliable supply of electricity. To achieve these objectives, the Government adopted the disaggregated model that separates generation, transmission and distribution. This is an adaptation of the model which was established in England and Wales. The industrial base and economy of Peru are those of an emerging market (with a population of approximately 20 million) and not that of a developed industrial economy. Thus, a number of modifications were made to the England and Wales model
 - The transmission grids for each of the interconnected systems (there are several in the country) will be separate companies and not owned by the distribution companies
 - There can be no cross ownership between generation, transmission and distribution, due to concerns over the potential for the emergence of a private monopoly
 - 90% of Peru's generation is dependent on run-of-river hydro
 - There is no pooling arrangement for sales into and purchases from the transmission grid but the system permits both the generation companies and the transmission companies to enter into bilateral agreements with distribution companies and large customers with prices that cannot exceed the regulated tariff
 - The regulatory framework was established with a Tariff Commission that is appointed by the President. This Commission is responsible for issuing concessions, regulating prices, and setting the regulations for the dispatch of the system on a least cost basis
 - The initial pricing is established using marginal cost pricing for generation, and a modified cost of service methodology which includes replacement cost (instead of historical cost) for capital cost recovery of transmission and distribution and an automatic adjustment factor (rates are adjusted every six months) for inflation

- **Malaysia** There were three autonomous state-owned vertically integrated public utilities in this developing industrial economy (with a population of approximately 23 million). The largest utility company, Tenaga Nasional Berhad

(TNB), has been reorganized into a holding company with generation, transmission and distribution divided into separate business units. The goals of this reform process were to improve shareholder value and to promote competition in the generation sector in order to improve supply efficiency and increase productivity. The Electricity Supply Act defines the roles and responsibilities of the regulator, the Minister of Energy, Telecommunications and Post, and the Jabatan Bekalan Elektrik (JBE), the utilities and other licensees. In addition, the Act provides for the issue of licenses by the regulator for the generation, transmission and distribution of electricity. The Government has determined that new generation should be competitively bid and IPPs have been invited to participate. The requirements are that a local partner must be included in each venture and the foreign partner must bring utility operating experience to the joint venture. The vertically owned utility purchases power from the IPP pursuant to a purchased power contract (similar to the model instituted in the United States).

- **France** The electric industry is dominated by one fully integrated generation, transmission, and distribution company that is state-owned but operates autonomously under a management contract or "Contrat de Plan". This contract is between the state-owned enterprise and the Government and it holds EdF accountable for its operations, tariff levels, maintenance of safety standards (including nuclear), and compliance with environmental standards. Approximately 73% of its generation is from nuclear power plants and it is the largest producer of electricity in Europe after Germany. EdF currently is reviewing its options for power sector reform and restructuring as a result of the European Union's (EU) directives that will require market liberalization and third party access to the national transmission grid system. (The EU's proposals for third party access are intended to allow the direct supply of electricity or gas between producers and either large industrial consumers or distributors via the grid on the basis of negotiated contracts.) These proposals, if adopted by France, would challenge the state-owned monopoly system that currently exists.
- **Portugal** In 1994, Portugal a developing industrial economy began to restructure its electricity sector as the first stage of complying with the EU

directives requiring market liberalization. The state-owned producer and distributor, Electricidade de Portugal (EDP), which accounted for 95% of Portugal's power production in 1993, was divided into 12 separate generation companies, four regional distributors and the national grid company. There is also a split between the public electricity service and the independent electricity system. The independent system allows direct contracting between large customers and generators and third party access to the transmission grid. The new structure will be under a holding company, which will retain the role of strategic planning and the subsidiaries will be responsible for the operations. The reformed power sector is regulated by two independent bodies, one overseeing price setting and competition, and the other controlling the location of new power plants, regulating capacity and the types of fuels used. The price regulator also ensures that the national grid buys electricity at the lowest possible price and that investment in the electricity sector is cost effective. The Government will maintain control over the construction of new generation to ensure security of supply.

Closer to the experience of Romania, among the CEEC countries there is also an array of approaches being taken to industry restructuring. At one extreme is Bulgaria with a single vertically integrated utility remaining under state ownership. Although various restructuring options have been considered, none have been pursued. A number of other countries in the region have embraced the concepts of a market economy and have introduced changes in structure, ownership, and regulation to foster efficiency and promote competition in the electricity sector. Furthest along in terms of structural disaggregation, dispersion of ownership, and independence of regulation is perhaps the Czech Republic. It has separated generation, transmission and distribution. It has partially privatized utility companies. It has designated a ministry to exercise regulatory authority over prices and it has made provision for the introduction of competition in generation through IPPs. The country experiencing perhaps the fastest rate of change is Hungary whose current accelerated program will leapfrog it ahead of some of the other countries.

The CEEC countries which are summarized below are those where change in the power sector has been accomplished

- **Slovakia** The electric industry is a vertically integrated state-owned company. There was restructuring completed in 1990 to break apart the large state-owned monopolies and introduce competition. The restructuring was effected through a holding company structure. Three regional distributors were established as state owned joint stock companies. In September 1994, the four electricity companies were removed from the second wave of coupon privatization and, in November 1994, the government indicated that the industry would remain state-owned and controlled by the Government. There is no independent regulatory agency.
- **Poland** In mid-1990, the state owned vertically integrated electricity company was separated into 34 generating companies, a national transmission grid, and 35 distribution companies. The structure was changed again at the end of 1993. The new structure includes 4 hard coal generating plant groups, 3 lignite generating plant groups, the Polish Power Grid Company, approximately 14 combined heat and power plants (or groups) as independent joint stock companies of the State Treasury, and 33 distribution companies. The new energy law which is expected to pass soon (in 1995) will allow competition in generation, provide third party access to the transmission network, and create two regulatory agencies (Energy Regulatory Authority and Energy Conservation Agency). This law will also allow various forms of ownership. At present, the Ministry of Industry and Trade has responsibility for energy policy. The Ministry of Construction and Spatial Economy shares responsibility for district heating and energy distribution regulation. The Ministry for Environmental Protection shares responsibility for environmental issues.
- **Czech Republic** The result of the restructuring which occurred from July 1990 through 1993 was the division of the state-owned vertically integrated utility into (1) CEZ, a joint stock company, which owns the transmission grid and approximately 80% of the country's generation, (2) 8 electric distribution companies, and (3) separate district heating companies. The remaining 20% of

the generation is a mix of industrial cogeneration, cogeneration heating companies, and one IPP. There is currently no active market for IPPs as contemplated by the existing legal and regulatory framework. In November, 1994, the new energy law established the Ministry of Industry and Trade (for licensing and macroeconomic planning) and the Ministry of Finance (setting of prices) as the regulatory agencies. The latter has sole authority to establish prices, there is no predetermined methodology for setting prices other than taking into consideration broad macroeconomic and political factors.

- **Hungary** The state presently owns 100% of MVM Rt, a holding company, which, in turn, owns between 34% and 50% of the eight generating companies and the six electric distribution companies. There is also a national grid company. The balance of the companies are held by the Hungarian State Privatization and Holding Company and various municipalities. The major objective of the ongoing restructuring is to prepare the companies for privatization, ensure the reliability of the power supply, maintain fair prices and attract foreign investments. As of July 1995, the Government is at an advanced stage of establishing a new regulatory framework. It anticipates that there will be a separate regulatory agency that will have authority to set prices, issue licenses and concessions, and determine operational codes prior to the commencement of the privatization process.

The lessons learned from the CEEC countries include

- There is no consistent approach to industry restructuring even among this group of countries.
- The stage of political development has an impact on the reform process in each country.
- Reform and restructuring must be customized to suit the conditions in each country.
- Regulatory reform has been slower to evolve than progress in restructuring the industry.

B Preliminary Criteria for Analyzing Alternatives

In order to assess properly multiple alternatives, it is important that there be a well-defined set of criteria to screen and evaluate options. Each feasible industry structural option for Romania should be evaluated on the basis of a common set of criteria. In order to solicit the input of the Counterpart Team, this section introduces a discussion of selection criteria. It is expected that the final set of criteria will be developed in the next steps of the project. The preliminary screening criteria include the following:

- **Consistency with Policy Objectives** Consistency and compatibility of the restructuring program with policy objectives will be important in determining whether each option deserves further consideration. The GoR has articulated a number of overarching power sector policy objectives -- meeting electricity demand in the most economic and environmentally sound manner, improving the efficiency of the sector, and improving reliability of supply -- as well as a clear delineation of the principles underlying the development of its energy law including:
 - Separation of the roles of the State as policy maker and as regulator
 - Demonopolization of the sector to create the conditions for competition and participation of the private sector
 - Fair non-discriminatory access to the transmission grid
 - Creation of an independent regulatory body to oversee the functioning of the sector
 - Establishment of the regulatory framework including principles of price setting at all levels of service supply

- **Prevailing Local Conditions** Existing conditions serve as the starting point for each restructuring option. First of these are social and economic conditions in Romania (a former socialist centrally planned economy in transition). Second is the electric sector transition program already in place.

- **Feasibility** The financial, technical, legal, institutional, and managerial feasibility of the proposed re-organization will be a key criteria in evaluating alternatives
- **Systems Planning and Operations** Aspects of system planning and operations will either constrain the likely options or open up new opportunities. How the system as a whole will be affected by proposed restructuring options and how the system can evolve into a more developed state are important criteria
- **Appropriateness of the Regulatory Mechanism** Key questions to be addressed in the design of a regulatory framework are whether the proposed regulatory framework will guard against excessive interference by the State and whether the regulatory framework provides appropriate incentives for regulated entities
- **Capital Attraction** Where capital attraction is an objective of restructuring, the question should be raised as to whether available capital in local or overseas markets will be more readily attracted as a result of one proposed restructuring plan versus another
- **Financial Impacts** To the extent that restructuring contemplates disaggregating RENEL into a number of separate entities, the financial viability of each of the new entities, as well as ability to meet lender conditionality, will be examined. Moreover, the differential impacts on Romania's finances of the various restructuring programs must be assessed
- **Consumers' Welfare and Distributive Effects** What will be the consumer welfare effects of any alterations to the tariff regime (and elimination of cross-subsidization) that may be proposed? The distributive effects of proposed changes can be substantial for the different customer classes -- industrial, commercial, agricultural, and residential -- and should be addressed
- **Regional Considerations** There are at least two aspects of the larger regional context which will undoubtedly affect the choice of restructuring options in Romania. First, as noted above in Section V A, Romania is neighbor to a

number of countries where the electric utility industry is undergoing change. Proximity to markets where private ownership and competition are becoming the norm may have spillover effects. Second, RENEL is working toward membership in UCPTE and Romania is committed to becoming a full member of the EU. Membership will necessitate changes going beyond the technical operations of RENEL, affecting industry structure.

- **Transition Costs** Change is accompanied by costs and consequences. Restructuring in the electric utility industry elsewhere has led to cost cutting, downsizing, and investment write-offs -- all of which can be painful. In assessing a slate of options, one of the considerations will be the extent and duration of transition costs that must be incurred to achieve the overriding objectives of the reform program, and the ability of Romania to incur them.

The process of defining and prioritizing the criteria for assessing various restructuring options will be iterative. From time to time during the course of the project, the project team will preview with the appropriate counterpart team the criteria and options which, at least preliminarily, seem to be most pragmatic or ideal. This process will enable the counterparts to consider these options according to their understanding of the important criteria for the restructuring program and will permit parties to understand the full ramifications of the restructuring, thereby improving the probability that consensus over the best course of action may be achieved.

C Relevant Considerations with Respect to Romania

The models presented in the previous section will be considered in the context of the existing conditions which may have ramifications for the future course of action. This section addresses existing local conditions and their implications for any future restructuring.

As alternatives are being reviewed for the restructuring of the Romanian electric sector, consideration should be given to previous studies that have been conducted and adopted by RENEL and MOI. The primary study that RENEL and MOI have

incorporated in their "Proposed Power Sector Rehabilitation and Modernization Project", dated August 1, 1995, is the "Corporate Restructuring Study", funded by the EU PHARE program, conducted by Brossard Consultants in conjunction with EdF (adopted by RENEL's Board of Administration by Decision No 43/1992, and called the Reform Plan)

The primary recommendations from the study included

- Focusing the operations of RENEL in the production, transmission and distribution of electricity (core activities) and moving non-core activities into separate commercial entities, removed from RENEL's budget, that could later be privatized,
- Transformation of RENEL into a commercial organization that operates as an autonomous entity with the goal of introducing competition and attracting private investment, and
- Adoption of a legal and regulatory framework for the electric sector, including development of a contract based relationship between GoR and RENEL, modeled on the EdF and Government of France arrangement

The MOI and RENEL draft report, entitled "The Strategy for Restructuring and Development of the Electric and Thermal Power Sector", defines the transition program that the energy sector is following. There has been some progress made toward implementation of these reforms in the transitional period 1992-1995. RENEL's programs represent a major step toward corporate reform. The proposed reforms as such do not constitute industry restructuring and it is not clear that they would meet Romanian commitments, as set out in the policy statement addressed to the IBRD, without further modification. The next steps of the project will examine this issue in more detail.

D Existing Commitments and Covenants to Lending Agencies

RENEL, with the guarantee of GoR, has borrowed, or is in the process of borrowing, from a number of international lending agencies and export credit agencies. Each of the financial transactions entails a number of commitments and undertakings on the

part of RENEL and/or GoR, some of which will have implications for the restructuring program

This section summarizes the key provisions of the recently closed World Bank loan and the European Bank for Reconstruction and Development (EBRD) loan currently in negotiation, as summarized in the World Bank August 9, 1995 "Staff Appraisal Report Romania Power Sector Rehabilitation and Modernization Project" and EBRD document "Romania Power Sector Operational Efficiency Improvement Project", respectively. As part of the next phase of the project to develop a set of restructuring options, the project team will review loan documentation for these financings. Other existing and planned transactions will be reviewed as well to determine whether they in any way, intended or otherwise, impose limitations or restrictions on the restructuring.

Many of the commitments made by RENEL and GoR to the World Bank are positive developments that would be welcomed in any restructuring approach as they represent sound business practice -- e.g., bringing more current the outstanding receivables and payables, appointing auditors, adopting international accounting standards, professionally managing project implementation plans, developing five-year business plans and investment plans, preparing financial forecasts and financial performance measures.

The commitment to separate all nuclear activities into a separate entity is a step which has been taken in a number of other countries (e.g., England) where the nuclear power plant post-restructuring remained in the hands of the government. Spinning off the nuclear activities necessitates development of terms and conditions of a power sales agreement covering price, quantity and quality of electricity supply, dispatch procedures, and payment terms. Given the magnitude of the costs to develop and operate the nuclear power plant, pricing of nuclear power sold by this new entity to RENEL in either its current form or in any conceivable restructured form is going to be an issue of great importance to the electricity sector and to GoR.

The agreements with the World Bank commit GoR and RENEL to set electricity prices at not less than US\$50/MWh, to eliminate cross-subsidization of electricity.

prices to household customers, and to carry out a thermal and electricity pricing study. The commitments to raise prices to a level that is more likely to facilitate cost recovery are positive steps. Prices have been set with little reference to the actual cost of producing and distributing electricity. Although constrained by an effective price cap, RENEL's ability to control its costs is now limited (e.g., inability to independently negotiate fuel prices, constraints on economic dispatch, etc.). The elimination of subsidies is consistent with restructuring goals and will start to give the appropriate price signals to customers. The lack of mention of cross-subsidization of thermal sales by electric sales will have to be addressed going forward due to the magnitude of the thermal output in relation to the total output of RENEL.

The financing arrangements incorporate a number of financial undertakings and covenants -- e.g., the commitment of RENEL to fund a portion of the projects, to fund from internal sources at least 30% of its capital expenditures, and to adhere to a debt service coverage ratio of 1.5 times. The ability of RENEL to meet its commitments is being assessed by the lenders and must be taken into account in modeling restructuring alternatives. Moreover, in the event that one or more of the options presented involves disaggregation of RENEL, transfer (or renegotiation) of the indebtedness and ongoing obligations, financial and other, will have to be addressed.

The covenants and conditions contained in the summary term sheet for a loan to RENEL from EBRD are consistent in most respects with those agreed upon with the World Bank. In addition to RENEL and GoR pursuing restructuring and nuclear action plans, the transaction contemplates an operational efficiency improvement plan and environmental monitoring plan, neither of which is likely to limit restructuring options. The EBRD proposed conditions go beyond those dictated by the World Bank in requiring, by mid 1996, a generalized framework governing relations with IPPs (concessions, power and fuel purchase agreements, and performance guarantees). The requirement to develop such a package does not constrain restructuring.

As part of the next tasks, existing and proposed financings will be reviewed to identify any inconsistencies and implications for the restructuring program

* * * * *

In summary, the restructuring option selected by GoR will be driven by the following key considerations

- How much private investment is desired?
- What degree of competition will be allowed?
- To what degree will cross subsidies be eliminated?
- When will Romania join the EU and when will the EU directives for the power sector be finalized?

Decisions made by GoR with respect to these considerations will shape the future structural arrangements, commercial relationships, and regulatory framework for the electric sector of the Romanian economy

VI Technical Constraints

The Romanian electric system operates within various constraints imposed by the physical requirements of the system's equipment, requirements for interconnected operation with countries with which it is or will be synchronized, variations in system demand, obligations to receive energy from generators it does not own or control, and others. Among the more important of these factors which may affect system performance or economics under different restructuring options are limitations on trade with other countries, operation of combined heat and power (CHP) plants and industrial cogeneration/IPPs, and general technical considerations.

A Import - Export

Until April 4, 1994 Romania was synchronized with and a member of IPS-CDO. Its transmission links were strong to the east, weaker to the west. Romania now is taking steps to join UCPTE, the western European grid, which will impose more stringent technical requirements and associated costs. It is still a member of IPS, but is no longer synchronized with IPS countries Hungary, Ukraine, Moldavia, and Bulgaria (with a temporary exception).

Romania is now synchronized only through its interconnections with Serbia, permitting operation on a test basis with its southern neighbors Serbia, Montenegro, Macedonia, Albania, and Greece. The former Yugoslavian republics and Greece are part of the SUDEL group of UCPTE countries, but are electrically isolated from the other SUDEL members and the main body of UCPTE because of the war in the area. Possibilities for joining UCPTE were discussed in Section III D.

The governing agreement with UCPTE will focus on technical matters such as controlling frequency, maintaining at least certain minimum amounts of reserves, meeting N-1 criterion for surviving failure of a single element, and many others. Romania has already taken substantial steps to meet these requirements. Estimated cost of the additional equipment improvements needed to meet the UCPTE

requirements is \$118 million. Joining UCPTE and the equipment improvements themselves will also provide benefits.

Under UCPTE guidelines, with the existing physical system maximum power transfer capability between Romania and the UCPTE members to the west would be 400 MW for exports and 600 MW for imports. The governing factor is limitations within the Hungarian electrical system. That maximum capability increases to about 1,000 MW for both exports and imports if the transmission system in the former Yugoslavia is re-established. Additional increases would occur if a second interconnection between the Romanian and Hungarian electrical systems were completed. Maximum capability for power transfers between Romania and Greece would be about 600 MW for both imports and exports with the existing physical system. Romania's interconnecting lines with bordering countries have thermal transfer capabilities totaling thousands of megawatts. Power transfers with them approaching the thermal limits of some of the lines would also be possible, sometimes in addition to those with UCPTE and/or Greece. Limits on net simultaneous power transfers into or out of Romania will depend on the specific transactions and other conditions at the time, of course including establishing synchronous operation with UCPTE and/or the bordering countries.

B CHP Plants

CHP plants provide for more efficient joint production of electricity and heat than is feasible with separate production. In addition to the benefits they provide, the CHP plants impose certain constraints on the RENEL system. They are operated whenever the industrial steam or district heating systems demand the service. They tend to be inefficient when run in either a heat only or a power only mode. The key constraints include

- When its steam or heat is demanded, a CHP unit must be run, generating a certain amount of electricity at that time. This means that another electrical generating unit cannot run, or must be run at part load. This creates an electrical system impact that does not show up directly in the costs of the CHP plant.

When steam or heat is not demanded, some units are inefficient to run or physically cannot run in a power only mode, as indicated for example by their high heat rates in condensing operation

- The varying modes of operation and the electric system impacts caused by their must-run operation makes it more difficult to allocate costs to the power use and the heat use
- The CHP units may require a fuel that otherwise would not be used for electricity production

A CHP plant owned by another organization (another R A , for example) creates somewhat different problems for RENEL

- It would have to meet RENEL's technical interconnection standards
- If it sells the electricity generated to RENEL, its impact on RENEL could be accounted for in the price paid for the electricity
- If, in the future, it sells to a third party, its impact on RENEL could be accounted for in charges for use of the transmission and distribution system, and in backup charges to the independent generator and/or its customer, depending on the structure of the industry at the time

C Industrial Cogenerators and IPPs

Industrial cogenerators and IPPs will have to abide by RENEL's technical interconnection requirements. The operation of such generators also affects the operation of the RENEL system, in effect imposing constraints on it

The technical interconnection requirements deal with issues related to the safe, reliable operation of the generator synchronized with the RENEL system, such as system and generating equipment protection, voltage and reactive control, power quality, and many others. In addition, the local and national transmission systems must be able to operate properly with and without the independent generators. This is not a problem for the existing generators

System impacts occur because the operation of the independent generators affects the commitment and dispatch of RENEL's generators, as discussed in the section on CHP plants above

- If it sells the electricity generated to RENEL, its impact on RENEL could be accounted for in the price paid for the electricity
- If, in the future, a cogenerator or IPP were to sell to a third party, its impact on RENEL could be accounted for in charges for use of the transmission and distribution system, and in backup charges to the independent generator and/or its customer, depending on the structure of the industry at the time

The technical constraints imposed by RENEL apparently have been acceptable to the existing industrial cogenerators, inasmuch as they have operated in parallel with RENEL for many years

D General Technical Considerations

The Romanian electrical system operates within the general framework of maintaining frequency, meeting load from hour to hour and season to season, the physical characteristics of the different generating plants, and many others. Considerations that are important now or will be in the future include

- The small operating range of many units due to high minimum load and reduced rated output limits flexibility
- There is a substantial minimum output of the group of thermal units due to the high minimum loads of many units and the must-run characteristic of the CHP units and the self-generation Hydro minimum loads due to water management requirements add to the problem
- Cernavoda will add to the minimum output of the group of operating units, especially if it does not cycle, and will require that the other units operate at lower average capacity factors
- Joining UCPTE will require more flexible operation of many units, higher reserves, and other technical features
- The possible fuel mix for electrical generation is constrained in several ways by the physical amount of different fuels available, by the ability to transport the

fuel, by the availability of hard currency to finance imports, by other demands for the same fuels, and by direction from the GoR

- There is need for improved equipment control, communication, and system control systems
- Regional transmission constraints within Romania, usually associated with the uneven spread of power plants across the country, limit transfers and require modified dispatch of generating units under certain conditions

We understand that RENEL is in the process of reorganizing its transmission and distribution functions. Some restructuring options may also address separating the transmission and distribution functions. There are several issues involved with doing this, especially with the 110 kV system, which is often thought of as being within the distribution function. For example

- Maintenance on the 110 kV system is now done by the same crews and with the same equipment that maintain the higher voltage system
- Almost 40% of the generating capacity in Romania is connected to the 110 kV system
- Some generators deliver at voltages below 110 kV, some customers are connected at voltages above 110 kV
- Many of the 110 kV lines are radial and within a single geographical area, but some are looped, with qualities more typical of transmission lines

* * * * *

These technical constraints will be considered as various restructuring options are evaluated

VII Implementation of the Terms of Reference (TOR) and the Workplan

A Issues Affecting Execution of the TOR

The purpose of this section is to identify, based on the results of our situation review, whether there are any outstanding issues which affect the remaining tasks in Phase I. While, as part of this situation review, we have identified a number of factors which may affect the range of feasible options for the restructuring program itself (e.g., RENEL's current corporate reform program, the existence of financial commitments and covenants), thus far, we have identified only two issues which affect our ability to execute the TOR. The principal issues we see as having an impact are as follows:

- The role of CHP plants, and
- Financial information

A.1 The Role of CHP Plants

RENEL is a major producer of heat as well as of electricity. This fact has important implications with respect to the treatment of CHPs under alternative structures (i.e., the ability of RENEL to divorce itself from the heat business), the resultant cost structures, and the implications for the electricity-heat cross subsidies. The TOR is explicit in that this is not a heat study. Yet it is difficult to separate the activities (as well as costs) of RENEL into distinct areas so that the study team can focus on the electric activities.

In view of these problems, we suggest that the project team discuss with the World Bank, as well as with USAID and our Romanian counterparts, the way in which it would be most appropriate to treat the heat sector and CHP plants in the remaining phases of this project. We think that it is essential to come to a common understanding of the relevant boundaries between electricity and thermal heat for this study and to agree on a clear interpretation of the TOR. Once we have achieved such a common understanding, we can finalize the workplan, which, in consequence, may need to be modified.

A 2 Financial Information

The availability of detailed financial information will impact the degree to which the project team will be able to evaluate the benefits and costs of the selected options. Our current understanding is that financial information may not be readily available in a form that would permit detailed analysis of the three functional areas (generation, transmission, and distribution) and alternative combinations of units. A detailed collection of such data is beyond the scope of the workplan.

Accordingly, and in an effort not to duplicate the efforts of others, we propose to build on the financial information collected by the World Bank and the EBRD in developing the analysis envisioned under this workplan. In addition, where appropriate, the project team will rely on normative industry measures rather than de-novo estimates to conduct sensitivity and impact analyses.

B Impact of Current Findings on Completion of the Work

Based on the information collected to date, there is no need to modify the schedule as agreed to at the kickoff meeting.

C Next Steps

With the submission of this report the team will commence the following activities:

- Seek comments back on the inception report,
- Hold the first meeting with the counterpart team using the inception report as a vehicle to engage the counterpart team in dialogue, to obtain their reactions to our initial assessment of the current situation in Romania and the prioritized objectives to be accomplished through restructuring,
- Commence work on Task 3 of the workplan, and
- Continue to collect detailed financial and operating information in preparation for the execution of Task 4 of the workplan.

Appendix 1

List of Meetings

Council for Coordination Strategy and Economic Reform

Dr Eng Nicolae Mihail Marinescu (Counselor)

Ministry of Finance

Silvia Damian (Head of Division, General Directorate for International Financial Relations)

Constantin Marin (Director of Pricing)

Maria Negoisteanu (Chief of Pricing)

Adriana Suta (General Director Adjunct, R A s)

Ministry of Industries

Gabriel Virgiliu Barbu (Director, Directorate for Programs with International Organizations)

Alexandru Badescu, General Director , Industrial Restructuring and Development, General Department)

Dumitru Barascu, (Deputy Director General, Economics-Financial Directorate

Virgil Musatesecu (General Director of the Energy Division)

Dipl Eng Florin Tobescu (Head of Research & Development, Directorate for Energy, Oil & Gas)

Ministry of Justice

Dinu Ianculescu (Director, International Office Directory for International Legal Relations and European Integration)

Cristina Luzescu (Chief Counselor, International Office Directory for International Legal Relations and European Integration)

Ministry of Research & Technology

Mircea Sbarna (Head of the Office, Office for European Integration in R&D Programs)

RENEL

Constantin Badan (Senior Advisor, Finance and Accounting)
Anca Badea (Senior Economist, Management and Human Resources Division)
Stefan Barsanescu (Senior Engineer, International Affairs Division)
Valeriu Bogan (Water Management, ISPH)
Marian Comanescu (Director, Finance Department, GTDEE)
Ion Coneciu (General Manager, GTDEE)
Radu Dinescu (Deputy Director, Strategy and Economic Development Division)
Dan I Dinescu (Director, Department of Strategy & Development Division)
Serbon Dragomurescu (Finance and Accounting Group)
Catalin Dragostin (Deputy Director, Project Implementation Department, Finance Division)
Cornel Dumitru (Finance and Accounting Group)
Paul Gheorghiescu (Hydro Operation Manager - GPEET)
Florin Gugu (Main Engineer, Tariffs Department, Strategy and Economic Development Division)
Stefan Hotopelenu (Strategy and Economic Development Division)
Mioara Huilea (Economics and Finance, GPEET)
Paul Iliescu-Saligny (Group General Manager, GPEET)
Gheorghe Indre (Senior Consultant, Tariffs Department, Strategy and Economic Development Division)
Cristina Ionescu (International Affairs Department, GTDEE)
Ion Tudor Ionescu (Deputy Director, Planning Department)
Francois Jonquieres (Financial Director, loaned from EdF under PHARE program)
Anna Lebedev (Senior Finance Officer, Finance Department, Nuclear Power Group)
Dumitru Manea (Head of Department, Tariffs Department, Strategy and Economic Development Division)
Adela Miculescu (Chief of Service, GPEET)
Miron Nicolescu (Senior Advisor, Legal)
Nicolae Nicolescu (Head of Export Division, ISPH)
X Nistor (Fuels, GPEET)
Christinel Onascu (Chief of Personnel and Training)
Corneliu Paslaru (Director of Maintenance, GTDEE)
Ioana Perju (Management and Human Resources Division)
Mihail Perju (Division for Management, Staff and Social Protection, GTDEE)
Anca Maria Petrescu (National Dispatch System)
Mihail Petrescu (Director of Strategy and Development Division)
Anca Popescu (Director, Power System Division, ISPE)
Gabriel Popescu (Deputy General Director, Head of Research & Engineering Group)
George Puiu (Head of International Affairs Department, GPEET)
Razvan Catalin Purdila (Director of Management & Human Resources Division)
X Rapoleno (Strategy and Economic Development Division)
Victor Romert (President-General Manager)
Nicolae Rotaru (Director, Finance and Business Services, Nuclear Power Group)
Felix Scvortov (Technical Manager, ISPH)
Eugen Tanase (Director of Financial and Accounting Division)
Ioan Ungureanu (Director, International Affairs Department)
Ion Urluescu (Manager, National Dispatch System)

PHARE/Synergy

Mark Velody (Energy Policy Consultant)

U S AID

Jacqueline M De Rosa (Project Manager, Bureau for Europe and the Newly
Independent States)

Richard J Hough (Representative to Romania)

Giannina Moncea

U S Consul

William H Crawford (Commercial Attache)

Luca Corina (Secretary)

Dan Floru (Commercial Assistant)

World Bank

Hernan Garcia (Principal Power Engineer for Power Development, Efficiency &
Household Fuels Industry and Energy)

Sam O'Brien-Kumi

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33/1991 Banking Activity
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10/1991 Public Finances
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Discipline and the Payments in Economy
29/1994 Establishment and Utilization of the Special Fund for the
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13/1994 Moderation of the Inflation Through Extension of Application of the
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- 263/1994 Approval of the Methodological Regulations concerning the Selection of Managers and Appointments for Autonomous Regies
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- 322/1992 regarding Establishment of Trading Companies by Spinning - Off Certain Activities from RENEL
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ARCE	Romanian Agency for Conservation of Energy
BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
CCSRE	Council for Coordination, Strategy, and Economic Reform
CEEC	Central and Eastern European Country
CHP	Combined Heat and Power
EBRD	European Bank for Reconstruction and Development
EdF	Electricite de France
EdP	Electricidade de Portugal
EU	European Union
GoR	Government of Romania
IBRD	International Bank for Reconstruction and Development
IPP	Independent Power Producer
IPS-CDO	Interconnected Power Systems-Central Dispatching Organization
JEB	Jabatan Bekalan Elektrik
MOF	Ministry of Finance
MOI	Ministry of Industry
MWh	Megawatt-hour
NEK	National Electric Company of Bulgaria
R A	Regie Autonome
RENEL	Regia Autonoma de Electricitate
S A	Joint stock company
TNB	Tenaga Nasional Berhad
TOR	Terms of Reference
TOU	Time-of-Use
TWh	Terawatt-hour
UCTPE	Union for the Coordination of Production and Transmission of Electricity
US, USA	United States of America
USAID	United States Agency for International Development
VAT	Value Added Tax